FloodProBE

Case Study:
Gloucestershire, GB - flooding in 2007

FACT SHEET

The FloodProBE Gloucestershire Pilot Site summary:

This report provides an overview and summary of the accounts from different organisations that were involved in the event in order to provide an introduction to the problems and solutions that developed during the days in July 2007. It has been compiled from publicly available resources

The document is intended for:

- Flood defence experts
- City planners
- Emergency planners

Where to find the document:

- www.floodprobe.eu

Figure 1 – Mythe Water Treatment Works under flood (source, Severn Trent Water)

In Brief

In the summer of 2007 Gloucestershire suffered one of the worst emergencies ever seen in the county due to extensive flooding. The summer of 2007 was one of the wettest on record. On 20th July, two months' rain fell in just 14 hours resulting in two emergencies–widespread flooding and tap water shortages affecting 350,000 people. It is estimated that the flooding and water crisis cost the county of Gloucestershire £50 million.

- **5,000** homes and businesses were flooded.
- **48,000** homes were without electricity for two days.
- **135,000** homes (over half the homes in Gloucestershire) were without drinking water for up to 17 days.
- **825** homes were evacuated resulting in approximately **1,950** people (including **490** children) seeking temporary accommodation.
- **500** businesses were affected.
- **10,000** motorists were stranded on county roads, including the M5 where many people remained overnight.
- **40 million** bottles of drinking water were distributed.
- **1,400** bowsers were deployed.
- The estimated cost to repair the county's roads was **£25 million**.

Gloucestershire Constabulary (Police)

Operation Outlook was the multi-agency response to the emergency, which was the largest peacetime event this Country has seen in terms of complexity, duration and those affected.

Gloucestershire Constabulary led the Strategic Co-ordinating Group and the Gold, Silver and Bronze Command structure, co-ordinating the response to the emergency. Much of the success of the operation can be attributed to the investment made by Gloucestershire Constabulary and the Gloucestershire Police Authority in the Gloucestershire Tri-Service Emergency Centre (GTEC), and Police Headquarters.

Gloucestershire Fire and Rescue response

Thirteen boats were deployed and 529 people were rescued. High Volume Pumps (HVPs) were used to protect the strategic infrastructure and normal pumping operations continued in commercial and domestic properties. Various types of military assistance were used in Gloucestershire, notably to assist in protecting Critical National Infrastructure.

The Military Contribution

A formal request for military assistance was received to protect Walham and Castlemead electricity stations which were under threat. Military capability was also required for:

- Distribution of life saving water.
- Engineering capability – construction of water defence systems.
- Helicopter support for reconnaissance.
- Evacuation of vulnerable people

Severn Trent Water response

As a consequence of river flooding, the Mythe WTW was shut down resulting in approximately 140,000 properties without a piped water supply. Customers were provided with alternative water supplies through use of bottles, bowsers and tankers. In excess of 1,400 bowsers were deployed to over 1,100 locations, with up to three fills each day. STW sourced up to 6 million bottles per day. At the water works, eight of the ten main treatment processes were damaged, as were 40 critical assets. The treatment tanks required cleaning and disinfection. In response to warnings of further severe weather, additional flood defences to protect critical parts of the site needed to be installed.

National Grid and Central Networks response

The Walham sub-station provides 470MW of demand via 4 transformers to 500,000 power customers. Temporary flood defences were deployed with the help of the emergency services and the military, and withstood peak water levels (just). One transformer out of the 4 was de-energised due to the risk posed by rising water levels. Central Networks engineers working closely with the emergency services and the armed forces to erect an emergency flood defence and pump water away from the Castle Mead substation. Due to rising flood waters over 40,000 customers were cut off for several hours to minimise damage to the substation.

Recovery and flood resilience projects: a Complex Environment

The context for recovery and resilience work is highly complex. There are 15 different groups with an interest/responsibility for flood management, all with separate reporting mechanisms. The County Council has a direct responsibility for road and footway drainage, which is managed on its behalf by Gloucestershire Highways. Once the water drains away it usually becomes the responsibility of the water companies (Severn Trent Water, Thames Water, Welsh Water and Wessex Water). Smaller streams and watercourses are overseen by the district councils and, in certain areas, below the 10m contour, the Lower Severn Internal Drainage Board. When water eventually reaches the mainstreams and rivers, the Environment Agency takes the lead. Gloucestershire County Council chairs a county-wide multi-agency Flood Risk Management Group which brings together all the different organisations involved in flood risk management, with the aim of sharing information and helping one another to drive forward positive flood alleviation work.

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