

**DARD
Rivers Agency**

Muckamore

**August 2008 Flood
Non Technical Summary Report**

September 2009

Introduction

An independent study was commissioned by the Department of Agriculture and Rural Development Rivers Agency to investigate the serious flood event in Muckamore, Antrim, on Saturday 16th and Sunday 17th August 2008 associated with the Sixmilewater River.

This non-technical summary presents the key findings and recommendations contained within the full report.

Location

The report examined three defined areas of Muckamore, Antrim, along the banks of the Sixmilewater. These were:

- Alexandra Park / Old Mill Industrial Estate,
- Seven Mile Straight / Abbeyview / Raceview and
- Oldstone Road / Greenmill.

The first two areas are protected from flooding by a flood defence consisting of an impenetrable barrier of sheet piling with concrete capping, which was completed in November 2000 following serious flooding in 1998. The flood defence was constructed to national standards (1 in 100 chance in any one year).

August 2008 Flood Event

The August 2008 flood event on the Sixmilewater River was a very rare extreme flood event well in excess of the national standard of protection to which the flood defence was designed.

As a result of the extreme nature of the event, the flood defences were overtopped and a number of homes were flooded.

Condition of the Flood Defence

The flood defence remains in good condition and there is no evidence that it has been damaged as a result of being overtopped in the August 2008 flood. Overall the flood defence continues to provide a high degree of flood protection from the river, consistent with national standards.

Mechanism of Flooding

The Report shows that although the flood defence is in generally good condition, a number of factors contributed to the nature and extent of flooding in the area. These include constriction of the river flow by the disused railway bridge (causing flooding at Alexandra Park) and the pedestrian bridge (causing flooding at Abbeyview/ Raceview). This was compounded by the collection of debris by the bridges, including tree branches and large tree stumps.

In addition flooding occurred from a ditch running parallel with Abbeyview which drains a section of the Sevenmile Straight. The ditch, which is in a poor state of maintenance, backed up adding further to the flooding.

Also, although two culverts provide a pathway for flood water immediately upstream of Muckamore Bridge, a third culvert which connects to this system is blocked.

Back Drainage

The back drainage system which collects water behind the river's flood defence consists of separate surface water drainage and underground sewerage systems. Surface water drains to the river via flap valves which automatically close off when river levels are high.

Evidence from local residents in Raceview stated that some gardens were flooded before the river overtopped the flood defences, indicating an issue with the back drainage system. The report concurs with the residents views and recommends that vegetation should be cut back in order to avoid the flap valves getting permanently blocked shut.

The Report also states that the road drains in Abbeyview and Raceview which connect to the sewer network were in extremely poor condition. It is noted that responsibility for maintenance of road drains in this area lies with local residents.

The lack of a flap valve on the storm overflow of the pumping station at Greenmill together with possible infiltration of flood water appears to have caused the combined sewer system to back up during high river flow, leading to flooding of properties in Greenmill.

Conclusion

The August 2008 flood was an extreme event on the Sixmilewater River and probably the most extreme flooding the area has experienced. The August flood was in excess of the national standard of protection to which the flood defence was designed causing overtopping and flooding of properties in the area.

Recommendations

While the flood defence remains in good condition the report makes a number of recommendations:

- **General**
 - Ensure that the level of the flood defence is consistent with the new river model which has just been completed
 - Provide back drainage pumping station
 - Undertake maintenance along the river to remove woody vegetation
 - Road drainage should be mapped, maintained and upgraded as appropriate
 - Sustainable Drainage Systems should be used for all new developments in the catchment
 - Update the Strategic Flood Map to include the August 08 event
 - Assess impact of tree planting on the right bank on flood risk

- **Alexandra Park/Old Mill Industrial Estate**
 - Remove railway bridge
 - Liaise with NI Water to eliminate the untreated foul water

- **Sevenmile Straight/Abbeyview/Raceview**
 - Refurbish road drainage
 - Investigate sewer system
 - Deal with water from mill race
 - Drainage ditch to be taken directly to river avoiding properties
 - Seal culvert beneath property in Abbeyview

- **Oldstone Road/Greenmill**
 - NI Water to investigate drainage system
 - Unblock culverts
 - Raise and construct flood walls