Warrington: Defra/EA Capacity building workshops - Flooding incidents, investigations and strategies

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Presentation

S19 Duty to Investigate - Wirral Policy and Prioritisation.
Significant Flood Event Criteria
Rainfall Events Past & Present
Reporting – General
Reporting Significant Events – Specific Locations
Local Flood Risk Strategy - Document Development
- Aims & Objectives
- Progress

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S19 Flood and Water Management Act 2010 states that:

(1) On becoming aware of a flood in its areas, a lead local flood authority must, to the extent that it considers it necessary or appropriate, investigate-
Which risk management authorities have relevant flood risk management functions, and
Whether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood.
(2) Where an authority carries out an investigation under subsection (1), it must-

Publish the results of its investigation, and
Notify any relevant risk management authorities.

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Wirral MBC Flooding Investigation Policy

Wirral MBC aims to investigate all occurrences of surface water flooding in its local flood risk management area based on the priority listing detailed below but always as resources allow. It will identify which risk management authority, if any, has the relevant risk management function responsibility to respond to the flooding, and notify them accordingly.

Where foul flooding is occurring an initial desktop or visual investigation will be undertaken but it is likely that the responsibility will rest with either an individual or group of properties/business's: or the appropriate Water Company (United Utilities or Welsh Water).

Wirral will endeavour to investigate the flooding within 48hrs, unless it is an extreme event (as defined by a severe weather warning from the Met Office) or similar event that covers a large area. Where an investigation has been undertaken, Wirral will prepare a report within 2 months (resources allowing and depending on extent of the event). The report detailing the investigations and resulting actions will be produced in an appropriate format and be published on the Council's website.

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Priority Listing for Investigation of Flooding

Priority	Type of Flooding Incident	Investigate
1	Any internal flooding (>1 property)	Always
2	Flooding to priority highways (category 1, 2 & 3a)/critical infrastructure.	Always
3	Flooding to gardens and open space where potential risk to life was high.	Always
4	Where there has been an imminent threat of internal flooding	Always
5	Flooding to non-priority highways (category 3b, 4a & 4b), that renders it totally impassable for a significant period (4 hours or more)	As resources permit
6	Flooding to gardens, farmland and open space where no risk was posed.	As resources permit

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Significant Flood Event

For the purpose of reporting Flood Investigations, a flooding incident is deemed significant if it:-

Caused internal flooding to 8 or more residential properties/business premises within a kilometre square area.

Flooded one or more items of critical infrastructure e.g., a pumping station, an emergency services station, electricity sub station, hospital etc.

Caused a transport link to be totally impassable for a significant period.

Category 1 highways (motorways) and rail links – 1 hour or more
Category 2 and 3a highways – 2 hours or more
Category 3b, 4a, 4b highways – 4 hours or more

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A Significant Flood Event?

Although a recurring problem throughout Wirral flooding had, until recently, tended to take place mostly on an isolated incident basis and with a strong operational influence.

However, in August 2011, a 1 in 461 year rainfall event affected the Heswall area in the SW and the Wallasey/New Brighton area in the NW of the Borough with over 30 properties affected by internal flooding.

Although, this was thought to be a one off incident it did enable us to gain funding to undertake property resilience work on 20 of the properties, as they had all flooded before but not specifically during the same event.

However, this event did not specifically meet Wirral's significant event criteria, being based on effect, not the storm intensity.

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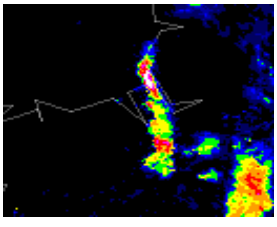
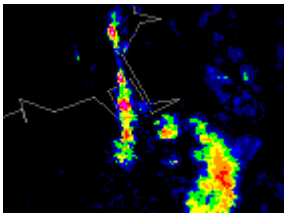
Radar Plots of Storm.



Friday 26th August 2011 6.30pm



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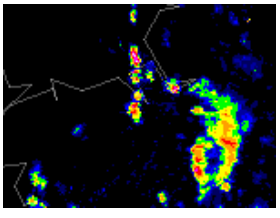
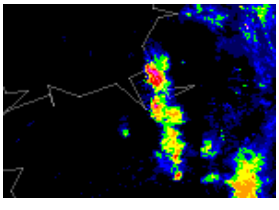


Friday 26th August 2011 7.30pm

Friday 26th August 2011 8.00pm



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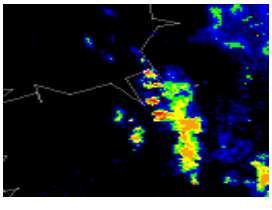

Radar Rainfall Intensity Colour Key

	>32 mm/hr
	16-32mm/hr
	8-16 mm/hr
	4-8 mm/hr
	2-4 mm/hr
	1-2 mm/hr
	0.5-1 mm/hr
	0.25-0.5 mm/hr

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What did we learn from this one event?

- Call out were unaware of Wirral's sandbag policy and the need to record specific information when flooding is reported. Coaching/training was required.
- Timescales for visiting and reporting required revising to be more achievable following extreme events and actual staffing levels.
- A need to keep an eye on radar maps as isolated high intensity rainfall does not trigger a extreme rainfall event notification.
- Consider the development of existing software packages to accommodate the flood investigation reporting and mapping, and automatically trigger significant event reporting.

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Actions

- The draft policy was reviewed and amended to increase investigation of the flooding to 72hrs. However, the priority listing and reporting criteria remained unchanged
- The existing highway drainage GIS software package was enhanced to include flood investigation monitoring.
- Meeting arranged with UU/WW to discuss flooding.
- Operation of all gullies etc in vicinity of flooded properties checked.
- Further investigation at a number of properties was proposed to identify any potential highway drainage improvements.
- Purchase of Micro Drainage modelling software and training

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Isolated Flood Event?

However, boy were we wrong to believe this was a one off incident, The following year 2012 a number of extreme rainfall events occurred, as detailed below..

- August 13th 2012, a 1 in 30 year rainfall event affected the whole Borough and 46 properties suffered some form of internal flooding.
- August 15th 2012, a 1 in 12 year event affected the whole Borough and some 26 properties were affected by internal flooding.
- August 29th 2012, a 1 in 20 year rainfall event, led to 10 properties across the Borough suffering some form of internal flooding.
- September 24/25th 2012, a 1 in 25 year rainfall event followed an extended period of rainfall and led to widespread flooding and road closures although only 1 property reported internal flooding
- Again, all properties were visited but it took almost 3 months to complete.

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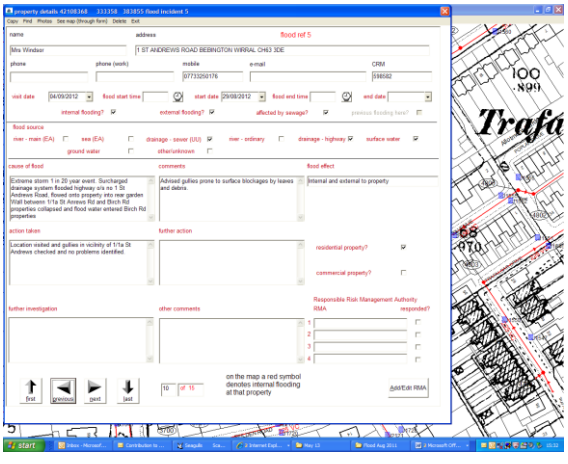
Flood Investigation Reporting - General

Each flood event is identified separately with a detail page produced for all affected properties on the GIS software Package (SEAGULLS) as detailed below.



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Report Part 1

A Final report is produced which identifies general areas affected but does not list individual properties, complying with the legislation by identifying the Responsible Risk management Authority or Authorities and if they have responded.

LOCATION: NGR Area/street name		Various locations within Wallasey/New Brighton/ Leasowe and Heswall		REFERENCE NO.	W/26.8.11/01-27
Start date & time	26/8/11	End date & time	26/8/11	Data collection date	30/8/11 – 22/9/11
				Observer	J. H. Baker
** Responsible Risk Management Authority (RMA)		Highway Authority (LLFA) and United Utilities		** Have RMA responded appropriately?	Yes
Maximum depth (m)		0.35m		**History of flooding?**	Most locations have flooded within the last 10 years

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SOURCE OF FLOODING		CAUSE OF FLOODING				
River: Main (EA)		drainage capacity exceeded				Y
Sea (EA)		mechanical failure				
Drainage: sewer (UU)	Y	operational failure/ breach of defence				
River: Ordinary		system 'tide locked' (ie drain can not discharge due to high river level)				
Drainage: highway	Y	blockage of bridge		blockage in culvert/pipe		
Surface water	Y	blockage in channel		blockage of screen		
Ground water	Y	unknown/other (give details)				
Other/unknown (give details)						

Additional comments on the cause of flooding: An unpredicted extreme storm event hit the Wirral on the evening of Friday 26 August 2011. It is believed to have tracked across the Wirral in a narrow band from southwest to northeast, leading to flooding in low-lying locations in Heswall, Leasowe, Wallasey and New Brighton. No visual supporting information from Wirral staff exists as storm occurred out of hours and was unpredicted.

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Report Part 2

Is a level survey required?	No	Date Surveyed					
EFFECT							
Properties flooded (residential)	Y	internal	24	external	2	Max Depth (m)	**0.35**
Properties flooded (commercial)	Y	internal	1	external			**0.2**
Infrastructure affected (list)	Not known at present						
Roads affected (list)	Y Damage to surface at a number of locations from surcharging sewers						**0.3**
Other (list)	A large number of sewer manholes were dislodged						
Map/ sketch of flood							

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Report Part 3

ACTION TAKEN: All properties visited and details of flooding noted gullies in the vicinity of the properties checked, Residents requested to contact Water Company and advise of flooding

ACTION REQUIRED: Water Company to investigate public sewers in vicinity of flooded properties

FURTHER INVESTIGATION: Wirral to consider possible improvements to highway drainage system to ensure maximum discharge is available from area. However, drainage systems as a whole were unable to deal with the amount of surface water generated by this storm event. Once storm had abated all flooding drained away.

OTHER INFO: It is unlikely that purely improvements/additions to the highway drainage system would prevent future flooding from what appears to be an unprecedented rainfall event. Water Company do not design new sewers to cope with storm events of this magnitude.

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Reporting Significant Events – Specific Locations

The reporting of significant events does not specifically generate a more detailed report but where the flooding mechanism is more complicated and a number of RMA 's are involved (or as is more likely Members, the public or MP's demand it as they generally want someone to blame) a more detailed investigation and report is produced.

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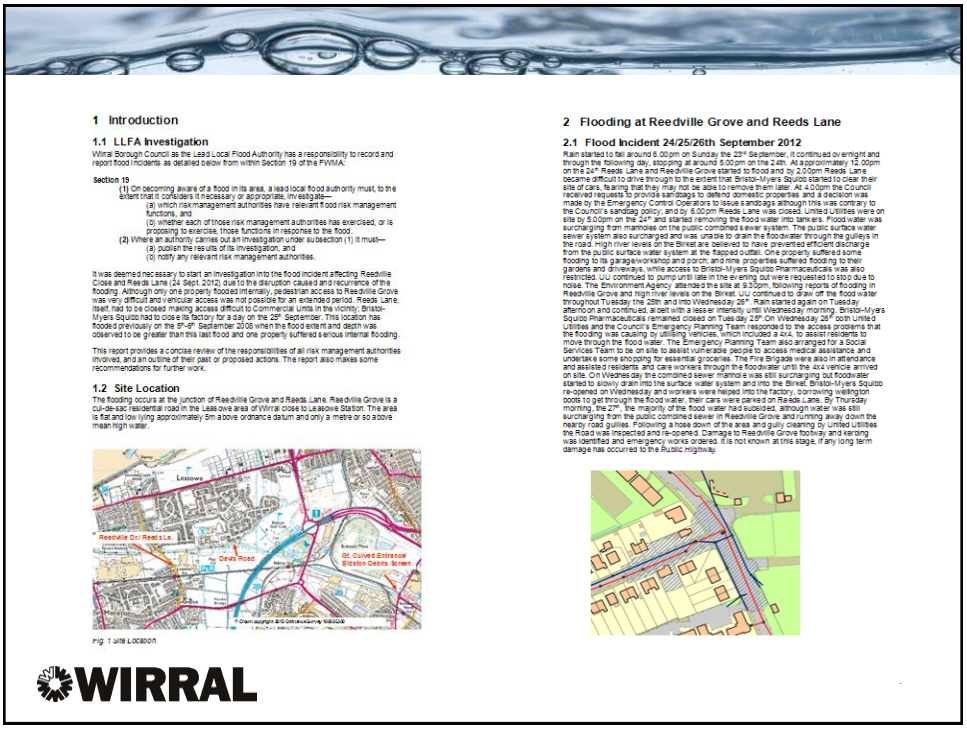

1 Introduction

1.1 LLFA Investigation

Wirral Borough Council as the Lead Local Flood Authority has a responsibility to record and report flood incidents as detailed below from within Section 19 of the FWMA.

Section 19

(1) On becoming aware of a flood in its area, a lead local flood authority must, to the extent that it considers it necessary or appropriate, investigate—
(a) which risk management authorities have relevant flood risk management functions, and
(b) whether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood.
(2) Where an authority carries out an investigation under subsection (1) it must—
(a) publish the results of its investigation, and
(b) notify any relevant risk management authorities.

It was deemed necessary to start an investigation into the flood incident affecting Reedville Close and Reeds Lane (24 Sept. 2012) due to the disruption caused and recurrence of the flooding. Although only one property flooded internally, pedestrian access to Reedville Grove was very difficult and vehicular access was not possible for an extended period. Reeds Lane, itself, had to be closed making access difficult to Commercial Units in the vicinity; Bristol-Myers Squibb had to close its factory for a day on the 29th September. This location has flooded previously on the 9th-9th September 2008 when the flood extent and depth was observed to be greater than this last flood and one property suffered a serious internal flooding.

This report provides a concise review of the responsibilities of all risk management authorities involved, and an outline of their past or proposed actions. The report also makes some recommendations for further work.

1.2 Site Location

The flooding occurs at the junction of Reedville Grove and Reeds Lane. Reedville Grove is a cul-de-sac residential road in the Leasowe area of Wirral close to Leasowe Station. The area is flat and low lying approximately 5m above ordnance datum and only a metre or so above mean high water.

Fig. 1 Site Location

2 Flooding at Reedville Grove and Reeds Lane

2.1 Flood Incident 24/25/26th September 2012

Rain started to fall around 6.00pm on Sunday the 23rd September, it continued overnight and through the following day, stopping at around 5.00pm on the 24th. At approximately 12.00pm on the 24th Reeds Lane and Reedville Grove started to flood and by 2.00pm Reeds Lane became difficult to drive through to the extent that Bristol-Myers Squibb started to clear their site of cars, fearing that they may not be able to remove them later. At 4.00pm the Council received requests to provide sandbags to defend domestic properties and a decision was made by the Emergency Control Operators to issue sandbags although this was contrary to the Council's sandbag policy; and by 6.00pm Reeds Lane was closed. United Utilities were on site by 8.00pm on the 24th and started removing the flood water into tankers. Flood water was surcharging from manholes on the public combined sewer system. The public surface water sewer system also surcharged and was unable to drain the floodwater through the gulleys in the road. High river levels on the Birket are believed to have prevented efficient discharge from the public surface water system at the flapped outfall. One property suffered some flooding to its garage/workshop and porch, and nine properties suffered flooding to their gardens and driveways, while access to Bristol-Myers Squibb Pharmaceuticals was also restricted. UU continued to pump until late in the evening but were requested to stop due to noise. The Environment Agency attended the site at 9.30pm, following reports of flooding in Reedville Grove and high river levels on the Birket. UU continued to draw off the flood water throughout Tuesday the 25th and into Wednesday 26th. Rain started again on Tuesday afternoon and continued, at bett with a less er intensity until Wednesday morning. Bristol-Myers Squibb Pharmaceuticals remained closed on Tuesday 25th. On Wednesday 26th both United Utilities and the Council's Emergency Planning Team responded to the access problems that the flooding was causing by utilising vehicles, which included a 4x4, to assist residents to move through the flood water. The Emergency Planning Team also arranged for a Social Services Team to be on site to assist vulnerable people to access medical assistance and undertake some shopping for essential groceries. The Fire Brigade were also in attendance and assisted residents and care workers through the floodwater until the 4x4 vehicle arrived on site. On Wednesday the combined sewer manhole was still surcharging but floodwater started to slowly drain into the surface water system and into the Birket. Bristol-Myers Squibb re-opened on Wednesday and workers were helped into the factory, borrowing wellington boots to get through the flood water, their cars were parked on Reeds Lane. By Thursday morning, the 27th, the majority of the flood water had subsided, although water was still surcharging from the public combined sewer in Reedville Grove and running away down the nearby road gullies. Following a hose down of the area and gully cleaning by United Utilities the Road was inspected and re-opened. Damage to Reedville Grove footway and kerbing was identified and emergency works ordered. It is not known at this stage, if any long term damage has occurred to the Public Highway

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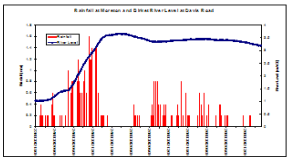

Fig 3. Rainfall and river levels.

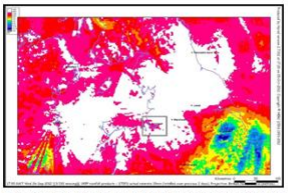

Fig.4 Rainfall Radar Accumulation over 2 days, the white area received in excess of 64mm.

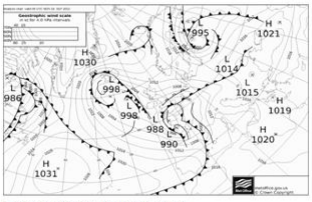

Fig.5. Synoptic Chart for 0000 hours on the 24th Sept

2.3 Previous Flood Incidents

Although this location floods on a regular basis, the last significant incident occurred on the 5th-6th September 2008 when the flood extent and depth was observed to be greater than this last flood but again only one property suffered serious internal flooding.

The flooding at the time was exacerbated by operating difficulties with the debris screen at the Great Culvert Entrance and the Environment Agency agreed to investigate the possibility of undertaking improvements to its operation and these improvements were completed earlier this year.

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The United Utilities public combined sewer surcharged and was unable to cope with the flows generated and the pumps at the pumping station at Moreton were reported to have tripped on overload when the flows arriving at the station exceeded its operational pumping capacity. They agreed to investigate the capacity issues and the possible installation of a storm tank. They undertook some work on the public sewers to desilt and de-scale them and improvements to the pumping station. Unfortunately, the provision of a storm tank was later not considered to be a cost effectively viable solution for the degree of property flooding being experienced.

2.4 Surface Water and Foul Drainage System

The area is presently drained via a public combined and surface water drainage system. The combined sewers drain to a pumping station located close to the Moreton Driving Range at Tarran Way South and are then pumped to the United Utilities waste water treatment works at Moreton, while the surface water system, which takes run-off from the public highway, flows generally north for about 250 metres before discharging into the Birket via a flapped outfall. The combined and surface water sewer networks are the responsibility of United Utilities. The combined sewer accepts both foul and some surface water drainage.

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Fig 6 United Utilities sewer network and approximate flood outline

3 Potential Causes of Flooding

3.1 River Flooding

The rainfall during the 23rd to 25th of September fell on a saturated ground and rapidly ran-off into the river system forcing the levels to rise quickly, rain fell over three days, off and on, and maintained the rivers at a high level for several days. The river height came up to within about 1m of the bank top in the area close to the Debris Screen at the Great Culvert Entrance and level monitoring gauge at Davis Road but still had a great deal of capacity in the channel. There are three major elements of infrastructure affecting the Birket, a recently upgraded debris screen at the entrance to the Great Culvert, a pumping station operated by United Utilities that intercepts the River Birket flows and pumps them into the West Float Docks, the pass forward flows, particularly during storm conditions then combine with discharges from the surrounding public sewers and pass to a further pumping station which lifts the flows to the United Utilities Shore Road treatment works on the River Mersey. During the period of the flooding, the debris screen was in operation and both the pumping stations were reported to be running at their maximum capacity. Although none of the flooding in Reeds Lane area was due to the Birket overtopping its banks, the continued high levels prevented the discharge of the flooding for an extended period.

3.2 Sewer Flooding

The flooding on Reeds Lane and Reedville Grove was caused by a combination of flows from the surcharged combined sewer in Reedville Grove and surface water which was unable to discharge to the separate surface water sewer through the road gullies due to high river levels that prevented free discharge at the surface water sewer outfall into the Birket. The flood water level at the low point in the road was at a similar level to the peak water level of the Birket at the outfall and over the period of flooding the river level remained fairly constant. The road started to drain when the river level had dropped sufficiently to allow the flap valve at the outfall to open.

3.3 Highway Drainage

The highway gullies drain into the surface water sewer system that discharges into the Birket via the flapped outfall. The surface water sewer was prevented from discharging by the high river levels during the flood but drained when the river levels went down (see above), thus relieving the flooding through the highway gullies. The gulleys were cleaned out by United Utilities after the flood water receded as a precautionary measure. The inability of the highway drainage system to discharge to the surface water system and hence the Birket will have contributed to the flooding.

3.4 Groundwater Flooding

In this area of the Wirral the groundwater aquifer is capped by a layer of mudstone and flooding from this source is unlikely. But due to the flat nature of the area it is highly unlikely groundwater emergence significantly contributed to the flooding, however a high water table and saturated ground would likely have prevented natural infiltration of the rainfall into the ground and this run-off would have gone into the sewer system and watercourses.

3.5 Analysis and Conclusions on the Cause of Flooding

Flooding was caused by a combination of under capacity in the combined sewer network and the Moreton Pumping Station which led to the sewers surcharging, resulting in flooding in Reedville Grove; and the locked surface water drainage system, which prevented discharge from the highway. The rainfall on the preceding days fell on to saturated ground and rapidly ran-off into the river system forcing the levels in the Birket to rise quickly, locking the surface water sewers preventing any discharge.

The water being unable to drain from either system inundated the road and gardens and eventually caused some internal flooding in one property. The area that floods is in a low point and has been identified as an area susceptible to surface water flooding on the Environment Agency's Flood Map for Surface Water. (Fig 7)

It should be noted that there will always be a risk of flooding at this location due to its

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proximity to the River Birket and its low lying aspect.

Fig.7. Environment Agency flood outline maps

4 Roles and Responsibilities

4.1 Lead Local Flood Authority

As a lead local flood authority, Wirral Borough Council has a role in overseeing the management of local flood risk, including:

- Groundwater flooding - caused when heavy or prolonged rainfall makes the groundwater table rise above its normal level.
- Surface water (rainfall) runoff - flows from, or over, surfaces such as roads, roofs and patios that cannot easily absorb water.
- Ordinary watercourses (streams and ditches) - channels which cannot contain large volumes of surface water runoff during or after heavy rain.

Wirral Borough Council attended the flooding on Tuesday 25th September when the Highway Inspector for the area closed Reeds Lane and although this was contrary to its sandbag policy, sandbags were also provided as part of its call out. On Wednesday 26th September it arranged for vehicles to be provided to enable residents to move in and out of the flooded areas and a team of Social Workers visited the site to assist any vulnerable residents. It also liaised with its partners to ensure that the Infrastructure that drained the Birket and the combined sewers were operating.

A multi agency public meeting was organised by the local Councillors to allow both residents and partner organisations to discuss the flooding issues and possible solutions.

4.2 Environment Agency

The Environment Agency has permissive powers to carry out maintenance work on Main Rivers under Section 165 of the Water Resources Act. The Environment Agency performs maintenance activities on main rivers based on risk. The River Birket is a Main River. The Environment Agency attended the site at Reeds Lane at 9.30pm on the 24th September following reports of property flooding. The Environment Agency had already been out to check the operation of the debris screen close to the great culvert entrance after reports of flooding to the pavement on Davis Road and high river levels on the Birket at around 5.30 to 6.00pm. The Birket has embankments that provide around a 1% standard of protection. (A flood you would expect to see every 100 years.). The flooding at Reeds Lane was not due to the River Birket overtopping its banks but high river levels will have prevented the surface water system operating effectively. A flood Alert for river flooding was issued for the Birket at 12.22pm on the 24th Sept 2012.

4.3 Highways Authority

Wirral Borough Council has a duty to maintain the highway under Section 41 of the Highway Act 1980. There are road gulleys on Reeds Lane and Reedsville Drive that are maintained by the council and cleaned annually in May. The road gulleys were believed to be functioning correctly but are connected to the surface water sewer network which was locked off by high river levels. The area drained away via the road gullies on Reeds Lane/Reedville Grove, suggesting that they were operating and not blocked.

4.4 Sewerage Undertaker (United Utilities)

United Utilities is the sewerage undertaker in this area and is responsible for foul and surface water drainage from residential and commercial properties, they also take water in many cases from the highway drainage system into the sewer network. The latest design criteria for the public sewer network aims to prevent flooding up to a storm with a 30 year return period providing around a 3.3% standard of protection.

United Utilities were contacted by a number of residents and attended the site on Reeds Lane at around 5.00pm on the 24th September and continued to draw the flood water off and on until Wednesday 26th September when the flood water started to slowly drain away from the site through the surface water sewers. United Utilities cleaned up the site following the flooding by hosing down areas and clearing road gullies of any debris and silt deposited during the flooding incident.

United Utilities have confirmed that a scheme within the catchments is at present being developed that may significantly reduce the flood risk at this location. However, although United Utilities prioritise all flooding schemes and this area has been identified as high in priority and is being considered to receive a permanent solution for sewer flooding, possibly within the current investment period (i.e. 2010 – 2015), they cannot firmly commit at this stage to the delivery of the scheme as other factors will need to be considered. These include detailed design, land acquisition, planning permissions and the overall cost to deliver it.

United Utilities will be meeting its Partners, the Environment Agency and Wirral Borough Council in January 2013 to consider the proposed scheme further.

5 Recommendations

- United Utilities should check the functionality of the flapped outlet from the surface water sewer into the Birket.
- The Environment Agency together with United Utilities and Wirral Borough Council should consider whether there are any viable options to minimise river locking of the surface water outfalls into the Birket.
- United Utilities should review the performance of their assets/infrastructure during the event and consider any viable options to reduce the surcharging of the system at this low point.
- Wirral Council to investigate any flood reports from the nearby area to see if they are in anyway linked to this location.
- Wirral Council to consider as part of its flood risk planning at this location the early closure of the road to prevent problems from the wake of buses and cars
- In partnership with the Local Community, the Council's Emergency Planning Team will develop a local flood response plan, as any works proposed or undertaken are unlikely to completely remove the risk of flooding at this location. Resident's expectations concerning any proposals need to reflect the Partners individual funding methods and the future funding changes likely to be experienced by both the Environment Agency

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Learning Outcomes/Actions (1)

- Hot spots list to be updated and locations prioritised for further investigation/solutions
- Closer liaison with water companies during and immediately after event.
- The flood map for surface water which had been adopted for the PFRA again showed good correlation with the flooding that occurred.
- Land drainage is becoming a major issue in the Wirral, even in built up areas. (This may have a limiting effect on the future use of SuDs.)

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Learning Outcomes/Actions (2)

- Significant flood event to now include incidents where 25 or more properties across the Borough suffer from internal flooding.
- Review the draft Local Flood Risk Management Strategy for flooding and actions
- A couple of local community flood groups in process of being developed/supported.
- We also consider garage flooding as internal as the majority of properties visited had operating white goods located within them. One property still had a garage door but behind it was a breeze block wall and a very wet recording studio.

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Local Flood Risk Management Strategy

Strategy Document Development

- The CFMP
- The PFRA
- Coastal Strategy
- The LGG Preliminary Framework
- Other Completed Strategy Documents
- The National Strategy

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Local Flood Risk Management Strategy Primary Objective

- Wirral Council as the LLFA will work with its partners, other flood risk management authorities, individuals, communities and organisations to reduce the threat of flooding and coastal erosion. It will achieve this through the detailed aims and objectives as set out in its strategy.

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Local Flood Risk Management Strategy Aims & Objectives (1)

- The aim of the local strategy is to ensure that the overall context of the National Strategy is met through Wirral's management of local flood and coastal erosion risk.
- The Council will, through its flood and coastal erosion activities, manage the local risk to people and their property through the objectives set out below.
- Understand the local risks of flooding and coastal erosion, working together with partners, other risk management authorities, organisations and the community to put in place long-term plans to manage these risks and make sure that other plans take account of them;
- Avoid inappropriate development in existing and future areas at risk of flood and coastal erosion while elsewhere, carefully managing other land to avoid increasing the risks;

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Local Flood Risk Management Strategy Aims & Objectives (2)

- Where financially viable, build, maintain and improve local flood and coastal erosion management infrastructure and systems to reduce the likelihood of harm to people and damage to the economy, environment and society;
- Increase public awareness of the risk that exists and engage with people specifically at risk, to encourage them to take action to manage the risks that they face and to make their property more resilient;
- Support and assist the appropriate bodies responsible for improving the detection, forecasting and issue of warnings of flooding. Plan for and co-ordinate a rapid response to flood emergencies and promote faster recovery from flooding

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Local Flood Risk Management Strategy Progress

- The recent flood events led to some major changes to the strategy especially the actions.
- The draft document is at present with a partner organisation that is undertaking the SEA environmental assessment, which will include some external consultation.
- The draft document is also being scrutinised by the Planning Member of Strategy Group to ensure it is up to date with both Planning Legislation and local policies etc.
- Once assessments completed. Partner Organisation/Departments will be consulted on the final draft before formal public consultation in the late summer/early autumn.
- Cabinet Approval and publication anticipated late 2013/early 2014.

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Thank you

Any Questions

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