Flood Investigation Report

Higher Folds Estate, Leigh

July 2025

Revision Schedule

Wigan Council

Flood Investigation Report

Revisions

Rev	Date	Details	Prepared	Reviewed	Approved
1	18/07/23		LM	JW	KB
2	01/08/23	Update from UU	NH (UU)		
3		Comments from EA	LM		
4	27/11/23		LM	JW	KB
5	Dec 2024		LM		MB
6	May 2025	Final comments & amendments as per new 2025 guidance	LM	MB	PB

Contents

List of Tables

List of Figures

Executive Summary

This Flood Investigation Report has been completed by Wigan Council under our duties as the Lead Local Flood Authority (LLFA). Section 19 of the Flood and Water Management Act 2010 (FWMA) states that on becoming aware of a flood in our area that has affected 5 or more properties internally, we must investigate the relevant flood risk management authorities involved and find out which flood risk management functions have been, or will be taken, if any.

Following a sustained period of dry weather, the Higher Folds estate experienced flash flooding following heavy rainfall in June 2023. The residents of Stirling Close, Royal Drive and Crown Grove all experienced internal flooding to their properties.

The LLFA are aware of the issues in this location and have been working with the relevant risk management authorities as well as the Flood Action Group and HF Works.

This report provides a summary of the actions being carried out by each of the authorities involved.

1. Introduction

Wigan Council as the Lead Local Flood Authority (LLFA) has a responsibility under Section 19 of the Flood and Water Management Act 2010 to investigate and report flood events in the Wigan Borough.

Section 19 states that:

(1) On becoming aware of a flood in its area, a lead local flood authority must, to the extent that it considers 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 carried out an investigation under subsection (1) it must –

a. Publish the results of its investigation, and

b. Notify any relevant risk management authorities.

A formal investigation will be undertaken when one or more of the following occurs:

- There is a risk to life
- Weight of public, media, political and planning interest
- Impact on critical services
- Internal residential property flooding of more than 5 properties or 2 or more commercial properties
- Economic disruption
- Impact on critical infrastructure and installations
- Frequency of flooding.

On Monday 12th June 2023 the Wigan Borough was hit by a storm event which led to a number of locations experiencing flash flooding following a sustained period of dry weather. Higher Folds was the most affected with a total of 13 properties having been flooded internally. This includes homes on Royal Drive, Stirling Close and Crown Grove. As such this event met the criteria of reporting due to the amount of properties internally flooded.

2. Location

First developed in the 1950's, the Higher Folds Estate is predominantly residential, (consisting mainly of Council Housing), with some amenity space and commercial properties such as a local store, as well as St Gabriels Catholic Primary School.

The estate lies approximately 1.6 miles from the centre of Leigh with only one form of entry via Queensway.

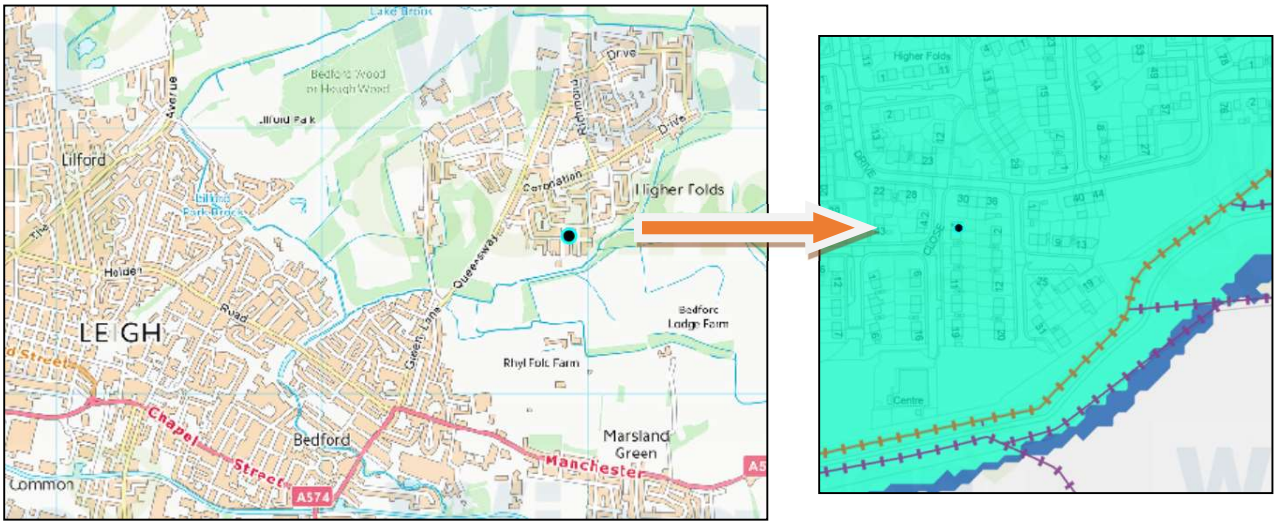

Figure 1. Location Plan

The estate falls into the top 10% of the Countries most deprived areas and sits within Wigan 031B & 031A LSOA, and was ranked 135 out of 32, 884 LSOA'S in England in 2019.

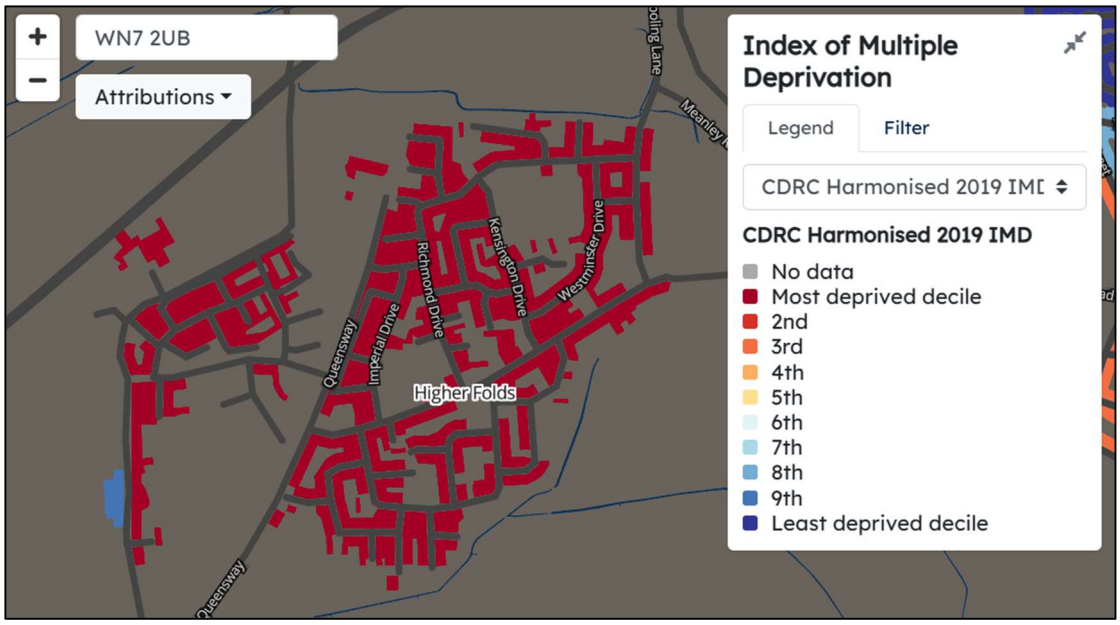

Figure 2. Map Showing Indices of Deprivation Rating

3. Catchment Characteristics

3.1 River Network

The Higher Folds Estate is surrounded by watercourses as shown on the map below (Figure 3). The orange line indicates a main river, with the purple indicating ordinary watercourses The main river known as Penleach Brook, runs around the estate and then enters Bedford Brook just north of Bedford.

The whole catchment is now drained by Bedford Pumping Station (an Environment Agency asset) which was built in its current location in 1964 to pump water up and into the natural course of Bedford Brook to the south to protect the estate.

Many of the ordinary watercourses show little signs of maintenance, with overgrown vegetation and silted up sections.

Due to the proximity of the watercourses to the estate, the area is mapped as at high risk from river flooding on the Environment Agency mapping service.

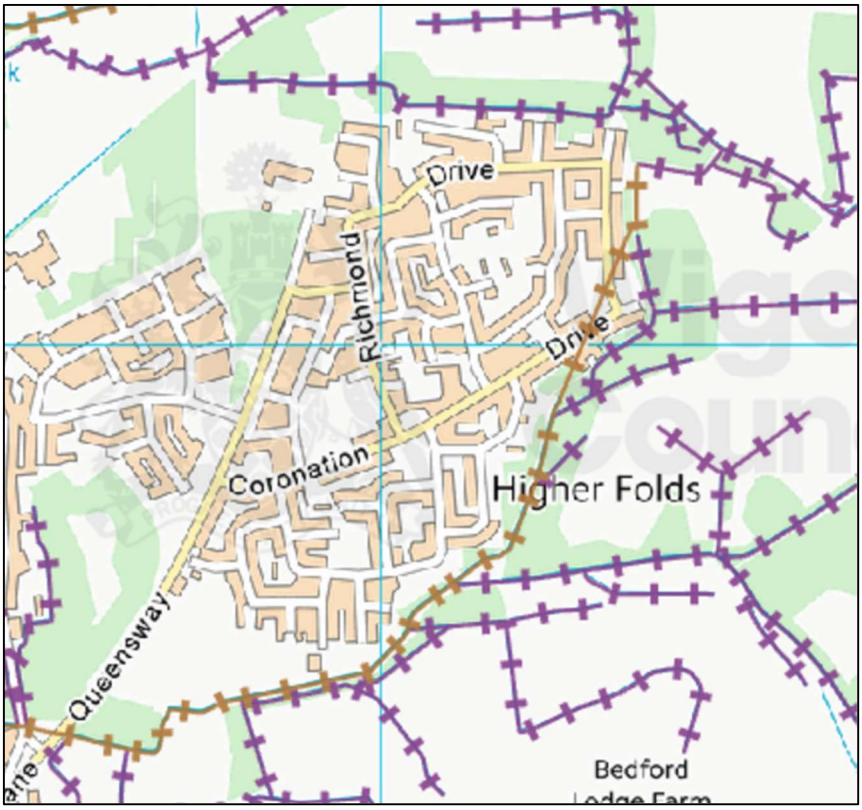

Figure 3. Map of Rivers and Watercourses

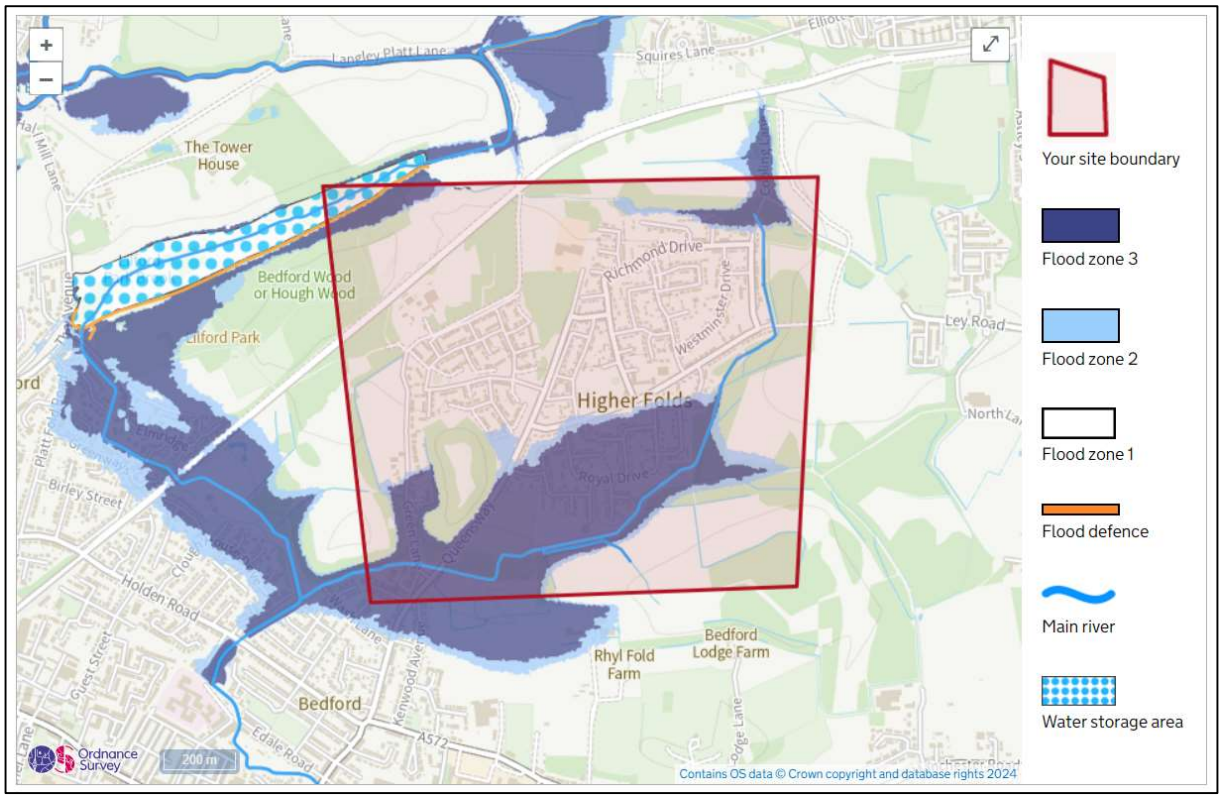

Figure 4. Fluvial Risk Map

3.2 Public Sewer Systems

The estate is predominately served by a separate system as shown in Figure 5 below. This system is owned and maintained by United Utilities. The blue line indicates the surface water system, the brown is the foul system, and the red is the combined system which takes both foul and surface water.

The two surface water networks that serve this part of the estate discharge directly into the main river south of the estate, known as Penleach Brook.

The outfalls are located south of Stirling Close and Royal Drive. These two outfalls are reliant on a free gravity discharge into Penleach Brook. However, there is a connection between the surface water network and the sewerage network at the south end of Stirling Close.

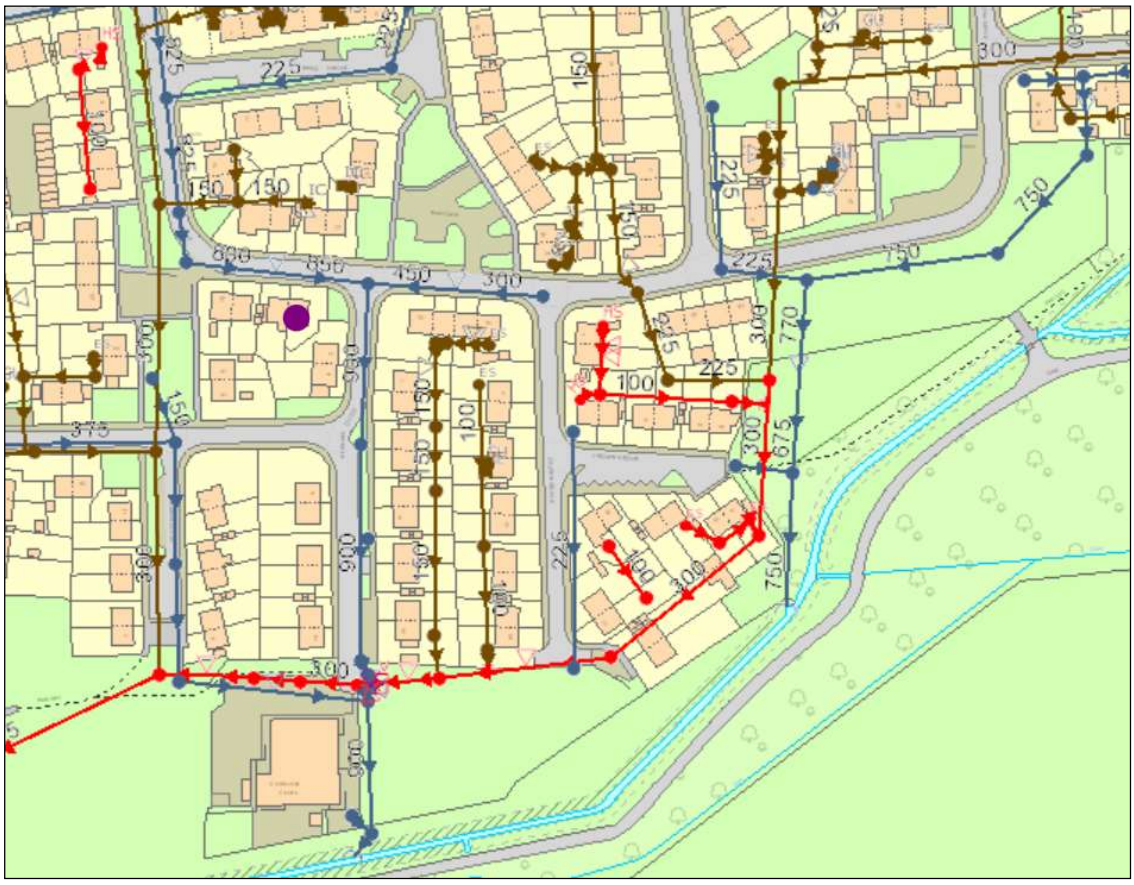

Figure 5. Location of Public Sewer System

3.3 Topography

As part of the Penleach Brook Geomorphological Assessment completed by the Environment Agency, the LiDAR data shows that the Higher Folds estate, and surrounding area, is a flat plain apart from a few hills surrounding the estate (Figure 6).

This is further supported by the topographical map shown in Figure 7, taken from topographic-map.com.

The report characterises Penleach Brook as a shallow, thin channel that has a low gradient south of the residential estate and a slightly higher gradient to the east / southeast of the estate, which therefore allows stream water to move relatively freely downstream.

Due to more localised topography of the estate, storm water collects in a “bowl like” depression centred on Stirling Close and Royal Drive. Data provided by the Environment Agency shows a 2m elevation drop over <100m distance, along Balmoral Road towards Stirling Close, (Figure 8).

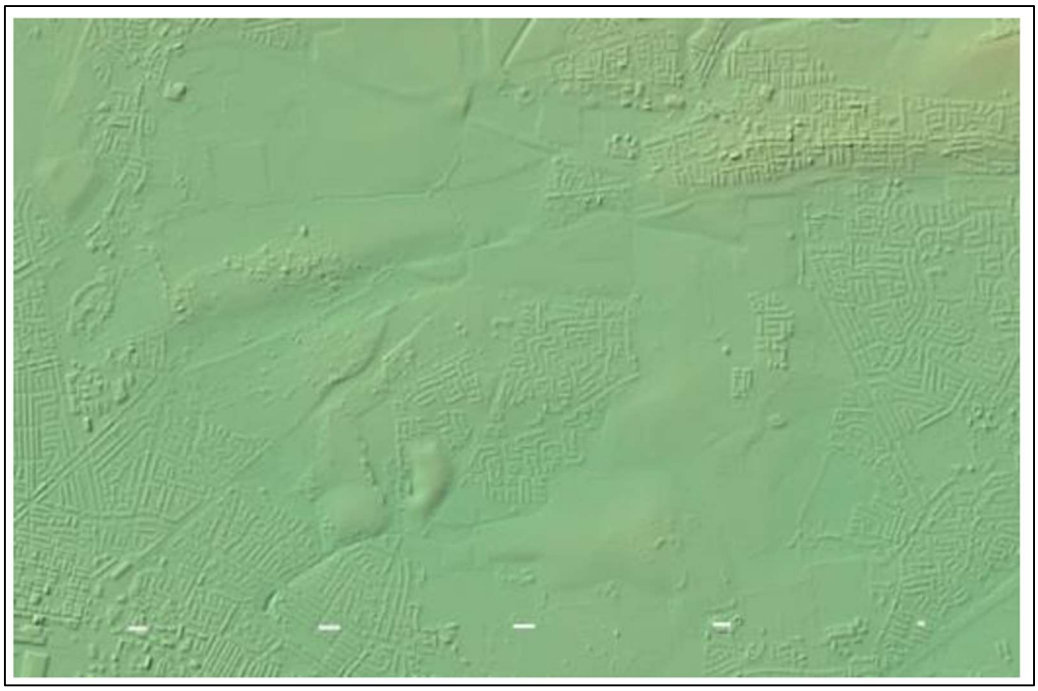

Figure 6. LiDAR Data Map – taken from the EA Geomorphological Assessment – Penleach Brook – November 2024

Figure 7. Topography of Higher Folds, taken from topographic-map.com

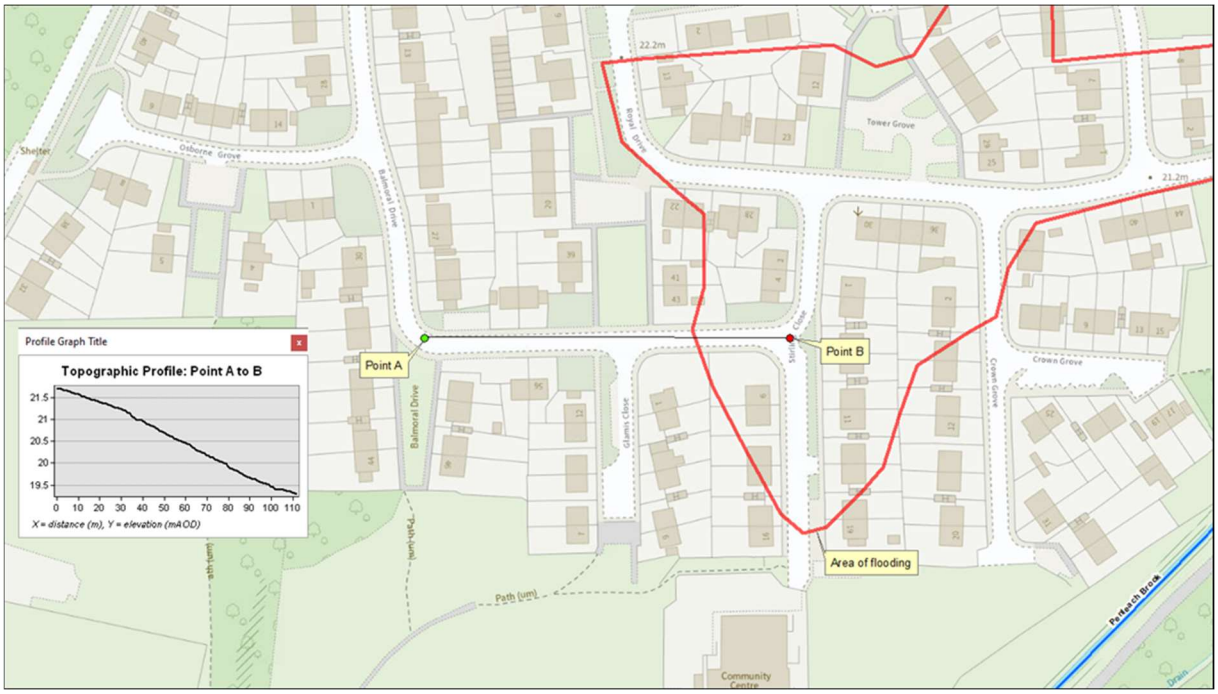

Figure 8. Localised Topography

3.4 Geology

The British Geology Survey mapping system shows that the estate sits upon sedimentary units of the Pennine Middle Coal Measures Formation. This is formed of interbedded muds, silts and sandstones. There are a series of NNW-SSE striking faults in the subsurface, but it is difficult to identify whether they are strike-slip, normal or reverse faults.

The superficial sediments in the area are Devensian tills. The area has several different glaciated deposits, and in the area of interest these are sheet deposits of primarily sands and gravels, typical of areas of sedimentary geology influenced heavily by LGM glaciation.

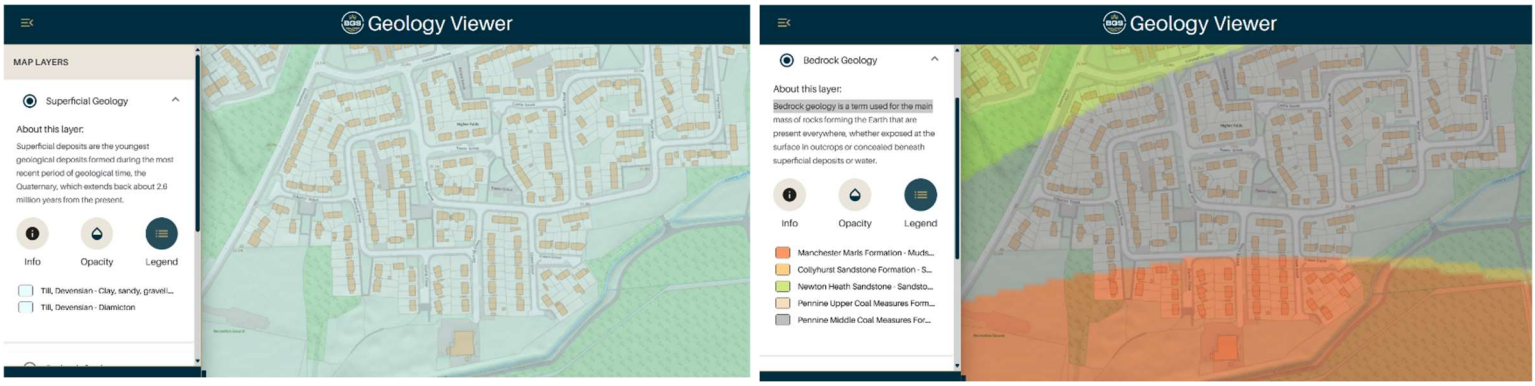

Figure 9. Geology Viewer Maps

4. Flood History

Since 2020 we have 8 reports of major flooding affecting the estate, as outlined in the table below.

Date	Detail of flooding	Properties affected
13/02/2020	Surface water flooding at Stirling Close and Royal Drive	0
04/11/2020	Surface water flooding at Stirling Close and Royal Drive	0
20/01/2021	Storm Christoph resulted in 7 properties having flooded internally.	7
05/08/2021	Surface water flooding to Stirling Close and Royal Drive	0
06/08/2021	Surface water flooding to Stirling Close and Royal Drive	0

30/09/2021	Surface water flooding to Stirling Close and Royal Drive	0
12/06/2023	13 residential properties flooded internally	13
26/08/2023	Surface water flooding to Stirling Close and Royal Drive	0

Table 1. Flood History

5. Roles and Responsibilities

5.1 Lead Local Flood Authority

As stated within the introduction, Wigan Council as the LLFA has a responsibility to investigate flood incidents under Section 19 of the Flood and Water Management Act. The Act gave the Council a strategic role in overseeing the management of local flood risk i.e. flood risk from surface water runoff, groundwater and ordinary watercourses such as streams and ditches. It gives the Council the following new responsibilities:

- To develop, maintain, apply and monitor a record about each structure or feature, including the ownership and state of repair of assets which have a significant effect on flooding
- To designate structures and features that affect flooding
- To keep a record of flooding hotspots across the Borough.

As the LLFA, Wigan Council will be looking for support from other authorities to ensure flood incidents are reported, and any assets which have a significant effect on flood risk are recorded on the asset register.

While Wigan Council can suggest possible causes of flooding and make recommendations to ensure flood risk is mitigated as far as possible, the Flood and Water Management Act does not provide Wigan Council with the mandate or funding to tackle all identified causes of flooding.

Wigan Council also have powers under Section 25 of the Land Drainage Act 1991 to serve notice on any persons impeding the flow of a watercourse and causing an increase in flood risk.

5.2 Environment Agency

The Environment Agency (EA) has permissive powers to carry out maintenance work on main rivers under Section 165 of the Water Resources Act.

The EA will also encourage third party asset owners to maintain their property in appropriate condition and take enforcement action where it is appropriate. They may consider undertaking maintenance or repair of third party assets only where it can be justified in order to safeguard the public interest and where other options are not appropriate.

The frequency of EA maintenance activities is primarily risk based, and activities comprise of vegetation management and clearance of blockages as and when is required.

5.3 United Utilities

Water and Sewerage Companies are responsible for managing the risks of sewer flooding from their infrastructure. They must also make sure their systems have the appropriate level of resilience to flooding and maintain essential services during emergencies.

For the Wigan Council area, the water company is United Utilities. United Utilities also advises the council on how their assets impact flood risk and the impacts of development on their assets which involves working with developers.

United Utilities also works in partnership with Wigan Council as the LLFA; and the Environment Agency, on how surface water can be managed more sustainably to aid all drainage assets.

5.4 Riparian Landowners – Forestry Commission

Riparian landowners are those who own land adjoining a watercourse. Riparian landowners have certain rights and responsibilities, including the following:

- They must maintain the bed and banks of the watercourse, and also the trees and shrubs growing on the banks
- They must clear any debris, even if it did not originate from their land. This debris may be natural or man-made
- They must keep any structures that they own clear of debris. These structures include culverts, trash screens, weirs and mill gates
- If they do not carry out responsibilities, they could face legal action

Riparian landowners must understand and act upon these responsibilities and must be aware that any works in, over, under of withing 8 metres of main rivers require formal consent from the EA under the Water Resources Act and associated byelaws. They must not carry out work without consent. If they do, the EA could reclaim from them the cost of removing, altering or pulling down works.

5.5 Residents

Wigan residents who are aware that they are at risk of flooding should take action to ensure that they and their properties are protected. Community resilience is important in providing information and support to each other if flooding is anticipated.

Actions taken can include laying sandbags and moving valuable items to higher ground, to more permanent measures such as installing floodgates, raising electrical sockets and fitting non-return valves on pipes.

Anyone affected by flooding should try to document as much information about the incident as possible. Wigan Council should be contacted and will make a record of the details provided.

If flooding occurs due to a main river residents are advised to report incidents to the EA, by calling 0345 988 1188.

The residents should also engage as much as possible with the Flood Action Group. The Group are aware of the issues and what actions should be taken during a flood event.

Residents are encouraged to join the Flood Action Group Facebook page for access to information and warnings.

5.6 Highways Authority

Wigan Council is responsible for maintaining the roads and pavements of adopted highways in the Borough. An adopted highway is one where the local authority has taken on the legal responsibility for maintenance. The Council is responsible for the drainage of surface water from the adopted highways.

In addition to the regular cleaning programme, the Council will attend to any reports of blocked gullies to investigate the problem and take remedial action to restore them.

The gullies at this location are on the Councils most frequent inspection schedule, with the team aiming to carry out inspections annually, as well as any reactive cleans that are required. The team will also attend prior to an expected storm event if resource allows.

6. Summary of Event

Following a period of dry weather, on Monday 12th June the Borough was hit by a storm event which resulted in a number of locations experiencing flash flooding, with Higher Folds having been the most affected.

Homes on Royal Drive, Stirling Close and Crown Grove all experienced internal flooding which started at 7pm, with response crews on site until 3am to clear the water.

Due to a combination of causes, the outfalls from the public surface water system became blinded and unable to discharge freely and effectively into the river. This caused the network to back up and then flood water surcharged out of the United Utilities manhole at the top of Stirling Close and adjacent to 76 Royal Drive. From here the water began to pond around the Royal Drive/Stirling Close junction, and also further round on the bend near 27 Royal Drive. As the rain continued the water began to breach the properties at both locations.

Figure 10. Areas of Flooding

Following discussions with the residents, it has been assumed that the properties affected on Crown Grove were flooded from the foul network running behind the properties, this was a result of the outfall being submerged and unable to discharge, causing the system to back up and flood out.

The residents managed to deliver sandbags to those that needed them prior to the event, but this has now depleted the stock of sandbags the Flood Action Group had to offer. On this occasion the Council and the Environment Agency managed to provide a total of approximately 280 sandbags to the residents.

Three of the properties were fitted with Property Level Protection measures following the previous flooding event. These measures were in place prior to this incident but water entered the properties through the floor, therefore bypassing the protection measures. There were also some issues with the way in which the measures were put in place, and further training is needed for the residents to fully understand how to work the gates and doors during a flooding event.

The photos below show the extent of flooding on this occasion.

Picture 1. Taken from junction of Balmoral Drive looking towards Stirling Close.

Picture 2 - Junction of Balmoral Drive and Stirling Close

Picture 3 – Indication of water level

Picture 3 above shows a resident indicating the approximate level the water reached outside the properties on Stirling Close.

6.1 Antecedent Conditions

June began fine and settled, with temperatures around average, but from the 9th it became warm and humid, and rather less settled, with thunderstorms breaking out in many areas.

Temperatures were above average in all areas, with daytime temperatures well above normal, most especially in western areas. The provisional UK mean temperature for June was 15.8 °C, which is 2.5 °C above average, making it the warmest June in a series from 1884.

Rainfall was slightly above average in parts of the English Midlands and some north-western areas. The UK overall rainfall was 68% of average. Sunshine was above normal everywhere, especially in northern and western areas, with 144% of average overall, making it provisionally the fourth sunniest June in a series since 1910, and the sunniest since 1957.

After an uneventful spell of settled, anticyclonic conditions, high pressure moved away and warmer, more humid air arrived which gave rise to rainfall and thunderstorms for some areas between the 10th and the 13th. Heavy showers and thunderstorms developed in numerous areas during the 10th to 13th.

6.2 Rainfall Data

The graph below shows the rainfall data collected at Penleach Brook Gauge located on Queensway.

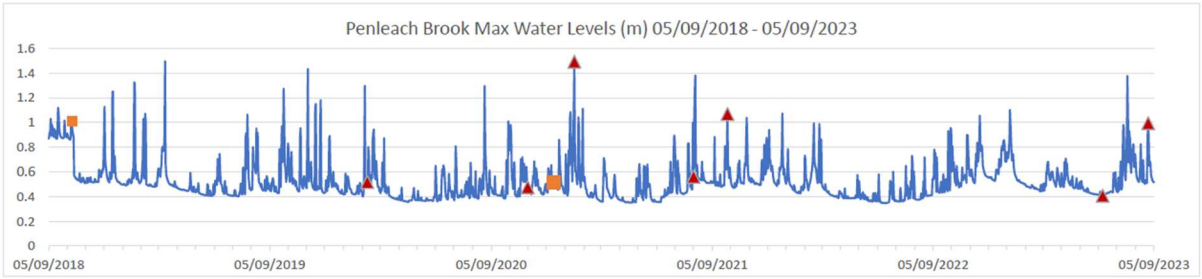

Figure 11. Maximum peak daily flow for Penleach Brook

A key timeline of flooding events (red triangles) along with desilt and de-weed maintenance dates (orange squares) are highlighted. It should be noted that the water levels and their fluctuation are indicative but not representative of the water levels at the two outfalls at Higher Folds. X axis = date, Y axis = water level (m).

7. Source, Pathways and Receptors

7.1 Source of Flooding

The main contributing factor to the flooding at Stirling Close was attributed to the surface water outfall being blocked by litter and debris trapped by the grill on the end of the outfall, along with being hydraulically locked due to the high water level in the Brook. This is similar to the situation in 2021.

Stirling Close outfall 11 October 2021 | Stirling Close outfall 15th June 2023

Picture 4. Stirling Close Outfall

At Royal Drive the outfall was blocked by river silt due to the river level continually increasing. This causes the public sewer outfall to become submerged and therefore unable to discharge freely.

Picture 5. Royal Drive Outfall

Unfortunately, the river gauge that records river levels of Penleach Brook was out of action at the time, maybe caused by the storm, so it is not possible to work out the contribution this made to the flooding.

7.1.1 Contributing Factors

Highway drainage

There are a number of highway gullies serving the area, all of which are believed to discharge into the surface water sewer network.

Highway gullies are designed to a 1 in 5 year standard for exceedance, meaning the system can become easily overwhelmed during heavy rainfall.

The gullies are on a 6 monthly cyclic cleaning schedule, which is the highest frequency available. The Council will also attend reactive cleans if reported and resource allows.

Upstream Vegetation

The upstream section of the Brook leading to the rear of Sandringham Drive is very overgrown with vegetation encroaching on the watercourse in some sections. Although this vegetation can help in holding back water it can also increase risk due to passing forward water, debris and litter etc, that increases blockage risk further downstream.

Picture 6. Upstream of Brook to rear of Sandringham Drive

Downstream Conditions

Downstream of the Royal Drive outfall the watercourse appears to have been widened and is heavily silted up. This siltation is causing a blockage in front of the outfalls.

Picture 7 Downstream of Royal Drive outfall

7.2 Flooding Pathway

The flood route is shown below in Figure 12. This shows a flow route from Royal Drive to the junction of Stirling Close from both the east and west. As well as flows from Balmoral Drive to Stirling Close.

Figure 12. Flow Routes

7.3 Receptors

7.3.1 Residents

The event has caused significant disruption to the lives of the residents. Financial losses have been incurred through the cost of house repairs and replacing damaged possessions on numerous occasions. Energy bills also increased for some residents, due to the power required for dehumidifiers and heaters to dry the properties. Residents shared concerns on how the flooding would adversely affect their insurance premiums and property values.

The flood event has caused immense stress and has compromised the wellbeing and mental health of those impacted.

Overall, the experience has generated anxiety about the future, including the possibility that their homes could flood again. Many residents fear that they now associate with rainfall.

7.3.2 Property

A total of 13 properties reported internal flooded, these were located on Crown Grove, Stirling Close and Royal Drive.

Residents reported external flood depths of approximately 500mm (see picture 3). The Environment Agency estimation of potential depth shows that Stirling Close has a high risk of flooding to a depth of 300mm, rising to a high 600mm level in 2040-2060.

7.3.3 Infrastructure

The flooding event led to flooding on the following roads:

- Stirling Close
- Royal Drive
- Balmoral Drive
- Queensway

As mentioned previously, the estate is served solely by Queensway. Once this route is flooded there is no other access to the estate and the bus services terminate. This can leave residents feeling stranded and isolated.

8. Actions Taken

8.1 United Utilities

United Utilities attended the incident and supported with external clean ups on a number of properties on Royal Drive.

Following the incident, United Utilities have surveyed the public surface water and no operational issues were found on the network, the outfall

however was found to be blocked. Due to the consistent high levels in the brook, it is impossible to determine if the outfall was blocked before, during or after the storm.

United Utilities have completed a wider CCTV survey of both the surface water and combined network, and found no operational defects on the network.

UU have increased the inspection visits for the outfalls from an annual inspection to a quarterly visit following the incident in 2021. These inspections did highlight issues with high silt levels in the watercourse.

United Utilities engaged with the Environment Agency and the Forestry Commission in an effort to get the river desilted, to allow free discharge from the public outfalls.

8.2 Forestry Commission

At time of writing, we have had no update from the Forestry Commission. Wigan Council will continue to work to establish a partnership with the Forestry Commission going forward.

8.3 Environment Agency

Following the flooding the Environment Agency commissioned their internal geomorphologists to study the silt levels in the brook and recommend what needs to be done. They recommended de-silting the brook. The Environment Agency discussed this recommendation with Wigan Council, United Utilities and Forestry Commission to agree who will carry out these works. As a result the Environment Agency carried out a de-weeding and desilting operation in November 2023, followed by the start of continual monitoring of in-channel silt levels which began in January 2024.

The EA will review and action all the recommendations of the geomorphology report.

8.4 Wigan Council

Wigan Council successfully bid for a grant under the Resilience 4 Cities (R4C) programme which provides funding to assess community resilience and implement solutions that enhance resilience in the Higher Folds community.

Following extensive resident consultation, the R4C team have identified 4 key aims and objectives.

In regard to flooding, the key aim is to increase green blue spaces including the following:

- Implement a year-round Nature Volunteering program with weekly environmental action days, centred on NFM and SuDs education.
- Conduct ecological surveys (e.g., water quality testing, biodiversity baselining) to inform habitat enhancement projects.
- Co-design and implement Sustainable Drainage Systems (SuDS) like rain gardens and rainwater harvesting.
- Expand tree cover and create green corridors to connect outdoor spaces.

Wigan Council have been working closely with the Environment Agency to assess the options for green blue investments and the best location for any potential SuDS elements.

The Council worked with a number of residents to establish a new Flood Action Group to cover the estate. This included the development of a Community Flood Action Plan. Unfortunately, the group has since become inactive.

Following a successful funding bid, the Council commissioned an independent review into the surface water mapping system. The new surface water maps produced will allow the Council and the Environment Agency to identify future partnership projects, and highlight priority locations to better allocate funding to the most at-risk areas which will ultimately protect more properties from future flooding events.

9. Recommendations

The method for prioritising works on watercourses varies for each risk management authority involved, is dependent on factors such as resources available, operational area, and interpretation of flood risk.
Highlighted below are some of the recommendations following the investigation into flooding at Higher Folds.

1. **Wigan Council LLFA to facilitate sharing of information between risk management authorities, and the community through continued community engagement.**

The Council will continue to hold regular meetings with all RMA's to discuss issues and concerns within the Borough through the quarterly Making Space for Water Meetings, as well as monthly Environment Agency catch-up meetings.

The LLFA team will engage with the local community via connections with HF works and offer opportunity for resident concerns to be passed onto the relevant agencies.
Timescale: Ongoing

2. **All RMA'S should keep a record of all flood incidents and significant flood risk assets within the estate and use this information for future funding submissions and to allocate areas most at risk.**

All RMA's to maintain a Asset Register, and list of flood incidents. This information should be shared amongst relevant RMA's and used as an evidence base for future funding submissions and to allocate areas most at risk.
Timescale: Ongoing

3. **Wigan Council should ensure all owners of culverts and watercourses within the area are aware of their responsibilities.**

Where the condition of a watercourse is such that ordinary flows are being impeded and the risk of flooding increased, the LLFA should ensure the owner of that watercourse remedies the condition. The LLFA should carry out enforcement action if needed.
Timescale: Ongoing

4. **Wigan Council Highways Asset Management Team to consider options to remove the highway drainage from the public drainage system.**

The Highways team should look at options to remove the highway drainage from the surface water system to reduce risk from hydraulic capacity issues.
Timescale : Summer 2026

5. **Wigan Council Highways Asset Management team should inspect and maintain the drainage system on a regular basis with maintenance activities continued based on agreed cyclic cleansing regime.**

The current cyclic cleaning schedule is set to 6 montly visits which is the Councils highest frequency visit option. The Council will continue to attend following reactive reports from residents should they locate an issue on the highway gullies.
Timescale : Ongoing

6. ***United Utilities should establish a maintenance schedule for the checking and clearing of the outfalls.***

The checking and clearing of the two outfalls is essential as part of the wider maintenance requirements for the estate, as proven by the reduction in reports of flooding following the clearing of the screen previously. United Utilities need to confirm a maintenance schedule for this work and share with the RMA's and Groundworks.

Timescale : Summer 2025

7. ***United Utilities to consider options to remove the connection to the combined system at the CSO overflow.***

As part of wider works being investigated under the Leigh East Strategy, United Utilities should look at the possibility of removing the CSO connection on the surface water system, and if not possible, offer reasoning as to why.

Timescale: Summer 2029

8. **The Environment Agency to consider options to maintain Penleach Brook more frequently, and continue discussions on ring-fenced funding opportunities**

The Environment Agency should consider options to increase the frequency of maintenance visits and works on Penleach Brook, by working in partnership with Groundworks on the Nature Volunteering Programme which looks to accommodate weekly environmental action days using volunteers from the estate. The Environment Agency should continue to have internal discussions in regard to ring-fencing of maintenance budgets.

Timescale: Ongoing

9. **The Environment Agency to gain a better understanding of fluvial flood risk and how this impacts on United Utilities modelled flood risk at this location.**

The Environment Agency to continue conversations with United Utilities in regard to network interactions to establish critical assets and how they are impacted during a flooding incident. For example, at what point would the outfall become surcharged if the river was to burst its banks.

Timescale : Ongoing

10. ***The Environment Agency to continue working on the Leigh East Strategy.***

The Environment Agency to continue working on the Leigh East Strategy to cover the below objectives:

- To establish a long term strategic and sustainable approach to reduce the risk of flooding by managing EA assets and flood risk from all sources whilst seeking opportunities for improving the environment.
- To create a prioritised and integrated Flood and Environment Delivery Programme and Investment Strategy
- To understand the interaction and connectivity between fluvial, surface water and sewer flooding so that strategy can recommend a set of integrated interventions.
- To work with Partners and Stakeholders, in an integrated and collaborative way to deliver a plan of multiple benefit outcomes, environmental, social and economic.
- To identify and secure potential funding for implementation in an integrated and co-ordinated way.

Timescale : Summer 2026

11. **Encourage residents to take measures to protect themselves and their property when flooding is imminent.**

All RMA's, Resilient Cities and Groundworks to work with the community to improve resilience across the estate and promote the importance of self reliance.

Timescale : Ongoing

12. **Residents are encouraged to document and photograph flood incidents where possible, report flooding to the relevant authority**

Information gathering is an important part of flood response and investigation. Wigan Council to encourage residents to collect as much information and evidence as possible to submit as part of any flood incident report.

The Council are looking at new ways to make this engagement easier for the residents.

Residents should be aware of the relevant risk management authorities and who is responsible for flooding, so as to be able to report to the relevant authority. For example, issues on Penleach Brook should be reported to the Environment Agency, gully issue to Wigan Council and issues with the outfalls to United Utilities.

Timescale : Ongoing

13. ***Prepare and operate a regular maintenance schedule for the clearance of vegetation and debris in the river***

Groundwork Cheshire, Lancashire and Merseyside in partnership with the Environment Agency, to prepare and manage a schedule for vegetation and debris clearance within Penleach Brook, supported by local volunteers and implement wider monitoring of the brook through citizen science.

Timescale: Spring 2025

14. **Continue partnership working to bring about changes to increase community resilience and options for resilient measures across the estate.**

Wigan Council, the Environment Agency, Groundwork Cheshire, Lancashire and Merseyside, United Utilities, Resilient Cities and HF Works

to continue to work in partnership to ensure the measures and options discussed are resident focussed and help to improve awareness and resilience of the residents on Higher Folds.

Timescale : Ongoing

15. **Wigan Council to re-engage the Community Flood Action Group to encourage further community action and the development of a clear Local Flood Action Plan.**

Wigan Council will work alongside HF Works and the residents of Higher Folds to encourage volunteers to take forward the Community Flood Action Group to ensure continued collaboration with the community and RMA's, as well as create a sense of community ownership in terms of flood resilience management via the Community Flood Action Plan.

Timescale : End of 2025

16. ***All RMAS to work on improving co-ordination in terms of collaborative working to proactively reduce risks identified following maintenance inspections that could involve other agencies.***

All RMAs should ensure a representative from their organisation is present at any meetings in relation to Higher Folds, in order to capture all issues and promote collaborative working towards solutions.

Timescale : ongoing

10. Conclusion

Following the desilting and vegetation cutting there have been no further reports of flooding at Higher Folds, however a robust maintenance strategy needs to be put in place to ensure this is part of a regular scheme to maintain the watercourse to such a level that which

the outfalls can discharge freely, as well as a maintenance programme for both the highway system and the UU outfalls.

As well as regular maintenance, the risk management authorities involved need to look at a long term project that aims to capture storm water and exceedance flows, in the form of retrofitting SuDS.

All RMA's should work together to find a sustainable solution to the flooding issues, and improve collaborative working to share issues and inspection findings.

Useful Contacts and Links

Environment Agency

General Enquiries 03708 506 506 (Mon-Fri, 8am - 6pm)

Incident Hotline 0800 80 70 60 (24hrs)

EA Floodline 0845 988 1188 (24hrs)

e-mail: enquiries@environment-agency.gov.uk

Environment Agency Flood Warning Service – link to sign up

https://www.gov.uk/sign-up-for-flood-warningsgs - GOV.UK

The Flood Hub

https://thefloodhub.co.uk/e Flood Hub

Land Drainage in Wigan

http://www.wigan.gov.uk/Services/Environment/DrainsSewers/Landdrainageditchesandstreams.htm

Prepare your Property for Flooding:

Prepare for flooding: Protect your property - GOV.UK

Wigan Council

The Environment Services Helpline Tel: 01942 404364

E-mail: NetworkManagement@wigan.gov.uk

Out of office hours in an emergency, Central Watch – 01942 404040

United Utilities

Tel 08456020406 (24Hrs)

http://www.unitedutilities.com/default.aspx