Flood and Water Management Act 2010

Section 19 Report

Storm Bert – Flood Investigation Area 08

October 2025

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RHONDDA CYNON TAF

DOCUMENT VERIFICATION

Client	Director for Highways, Streetcare and Transportation Services
Project	Flood and Water Management Act 2010, Section 19
Document Title	Storm Bert – Flood Investigation Area 08
Document Ref	FRM – S19 – Storm Bert – FIA08
Project No	N/A

Revision Status	Final			
Publication Status	Publication Approved			
Date of Issue	08/10/2025			
Prepared by	Catrin Evans BSc (Hons)			
Checked by	Owen Griffiths MSc (Hons)			
Approved by	Owen Griffiths MSc (Hons)			

This report should be read in its entirety.

This report has been prepared in accordance with the requirements of Section 19 of the Flood and Water Management Act 2010. The Council assumes no responsibility or liability from any person in connection with its contents or findings.

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EXECUTIVE SUMMARY

This report has been produced through the duties placed upon Rhondda Cynon Taf County Borough Council (RCTCBC) under Section 19 of the Flood and Water Management Act 2010. The Act states, “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.”.

This Section 19 investigation provides a factual report of the storm event that occurred on 23 and 24 November 2024 within the RCT area, focusing investigation on the flooding that occurred within the impacted areas of Pontypridd (referred to as Flood Investigation Area 08, Figure 1).

This report was undertaken to identify the mechanisms for flooding, establish which Risk Management Authorities have relevant flood risk management functions under the Flood and Water Management Act 2010 and ascertain if those Risk Management Authorities have undertaken or are planning to undertake actions related to those functions to reduce/alleviate the risk of flooding.

The flooding that affected RCT on 23 and 24 November 2024 was a result of an extreme rainfall event, designated by the Met Office as ‘Storm Bert’. The impact of the event at FIA 08 resulted in internal flooding to 62 properties: including 23 residential and 39 non-residential. Significant flooding to the highway throughout the investigation area, and the National Lido at Ynysangharad Park also occurred.

These impacts were identified through inspections made by RCT's Flood Risk Management team during the days following the storm event, as well as information collated by residents, business owners, RCT's Public Health and Protection team, RCT's Highway and Streetcare Depot, Natural Resources Wales (NRW) and Dŵr Cymru Welsh Water (DCWW).

It has been established from the evidence gathered within this report that the primary sources of flooding at FIA 08 in this incident was a result of the River Taf exceeding its channel capacity and resulting in out of channel flows, in addition to the surcharging of various combined sewer drainage assets following persistent and heavy rainfall. The River Rhondda was also identified as a contributing source of flooding to properties at Mill Street.

River level gauge data from NRW's Pontypridd and Trehafod monitoring stations reveal that the Rivers Taf and Rhondda were almost four times their typical levels during Storm Bert, and both rivers reacted rapidly to the intense rainfall. The high river levels at FIA 08 are considered to have influenced the ability of the combined sewer network to manage flows, resulting in the network becoming hydraulically overloaded and leading various drainage assets to surcharge and cause flooding.

Vertical water seepage into the foundations of homes and businesses as a result of hydraulic pressures exerted by the River Taf, as well as localised surface water accumulation, were also identified as sources of flooding to properties within the investigation area as a result of intense rainfall, overwhelmed drainage infrastructure and high river levels.

NRW has been determined as the relevant Risk Management Authority responsible for managing the main river flooding that occurred during Storm Bert. In response to the flooding at FIA 08, NRW propose to;

- Undertake an in-house hydraulic modelling project specifically for the Pontypridd area and undertake an initial economic assessment of the viability of potential flood risk management options.
- Develop a long-term Strategic Flood Risk Management Plan for the Taf catchment to manage the impacts of flooding on people, property, infrastructure and the environment.

DCWW has been determined as the relevant Risk Management Authority responsible for managing the sewer flooding that occurred during Storm Bert. In response to the flooding at FIA 08, DCWW propose to;

- Carry out modelling within the area to better understand what risks they may have both from Storm Bert and future events so they can manage the flood risk accordingly.
- Develop an Inflow Reduction Team with the aim of locating inflows of surface water, land drainage and groundwater in their sewer network and find ways to reduce these inflows.

RCTCBC as the Lead Local Flood Authority (LLFA) and Highway Authority has been determined as the relevant Risk Management Authority responsible for managing the surface water, ordinary watercourse and groundwater flooding that occurred during Storm Bert. In response to the flooding at FIA 08, RCT propose to;

- Cooperate and collaborate with NRW to carry out a detailed study of the investigation area and help to deliver NRW's Strategic Flood Risk Management Plan for the Taf Catchment.
- Cooperate and collaborate with DCWW's program of inflow reduction projects

The event that occurred on 23 and 24 November 2024 was extreme, and it is unlikely flooding from a similar event could be prevented entirely. It is concluded that the LLFA,

NRW, DCWW and the Highway Authority have relevant flood risk management functions, and all four RMAs have outlined which functions have been exercised and which are proposed to be exercised in response to the Storm Bert flooding event.

ABBREVIATIONS

CaRR – Communities at Risk Register

DCWW – Dŵr Cymru Welsh Water

FIA – Flood Investigation Area

FWMA – Flood and Water Management Act 2010

LDA - Land Drainage Authority

LFRMS – Local Flood Risk Management Strategy

LLFA – Lead Local Flood Authority

NFD – Non-Flood Defence – A structure that provides a flood defence benefit, which is not designated or maintained as a Flood Defence Structure. Thereby the benefits derived from the structure cannot be depending upon to deliver a Flood Defence.

NRW – Natural Resources Wales

PFR - Property Flood Resistance / Resilience

Q – Return Period (1 in X chance of an event occurring in any given year)

RCT - Rhondda Cynon Taf

RCTCBC – Rhondda Cynon Taf County Borough Council

RMA – Risk Management Authority

SFRA – Strategic Flood Risk Assessment

TABLES AND FIGURES

1. INTRODUCTION

1.1. PURPOSE OF INVESTIGATION

On the 23 and 24 November 2024, Rhondda Cynon Taf County Borough Council (RCTCBC) was impacted by a severe weather event which was designated by the Met Office as 'Storm Bert' on 20 November 2024.

The storm resulted in widespread flooding to residential and non-residential properties within Rhondda Cynon Taf (RCT). This report will focus on Flood Investigation Area 08 (referred to as 'FIA 08' within this report) which is comprised of areas adjacent to the River Taf within Pontypridd Town.

The purpose of RCTCBC's investigation is in response to the duties of the local authority as Lead Local Flood Authority (LLFA) in regard to Section 19 of the Flood and Water Management Act 2010 (FWMA), which states:

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. When 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 authority".[1]

[1] Flood and Water Management Act 2010, Section 19

The purpose of the investigation is to determine which Risk Management Authorities (RMA) have relevant flood risk management functions and which functions have been exercised in response to a flood.

Current Welsh Government guidance outlined within the National Strategy for Flood and Coastal Erosion Risk Management[2] stipulate that a Section 19 report should be produced for flooding incidences where twenty or more properties experience internal flooding following a storm event. Due to the extent and impact of the event at FIA 08, the Lead Local Flood Authority (LLFA) have opted to undertake a formal Section 19 investigation for this area.

Specific details of Storm Bert, such as rainfall analysis and watercourse response, are covered within a separate overview report that covers the wider RCT area. The report is titled 'Storm Bert November 2024 – Overview Report'[3].

1.2. Site Location

The area investigated within this report (FIA 08) forms part of the community of Pontypridd within the electoral wards of Pontypridd Town and Trallwng. It is located in the central sector of the county borough within the River Taf catchment, which flows north to south through the centre of the investigation area (Figure 1). The confluence of the River Taf and River Rhondda is located at the south-westerly edge of FIA 08.

The investigation area itself is confined to the base of the valley where residential and commercial development has been built on the floodplains of the River Taf and Rhondda.

[2] National Strategy for Flood and Coastal Erosion Risk Management in Wales, October 2020
[3] RCTCBC Storm Bert Overview Report, March 2025

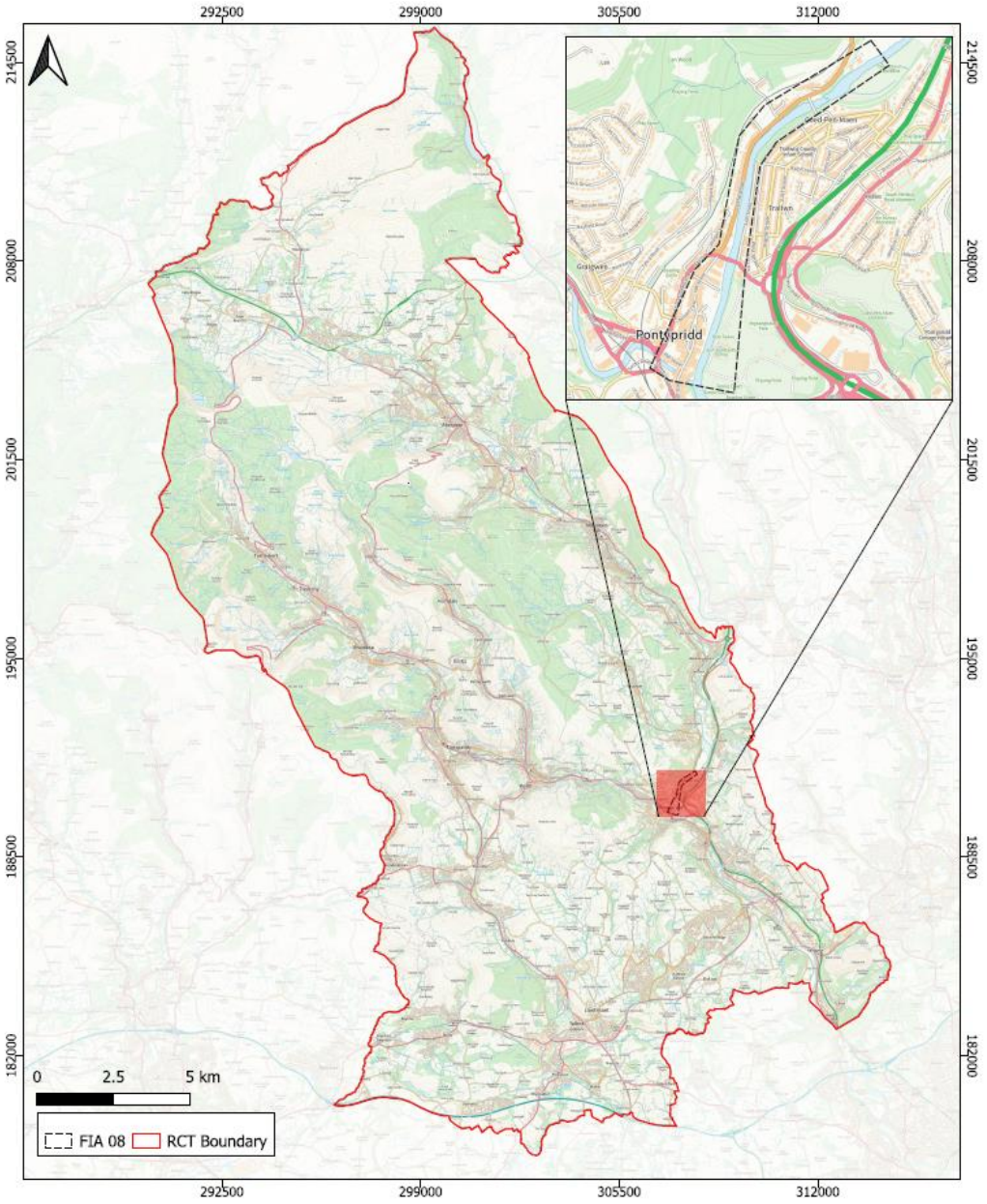

Figure 1: Location plan of FIA 08

FIA 08 falls within the Lower Taf Strategic Flood Risk Area, as defined by RCT's Local Flood Risk Management Strategy and Action Plan 2024[4]. These boundaries are based on the latest flood risk datasets, geographical knowledge of the catchment drainage basins and local flood history to assess flood risk in RCT.

[4] RCTCBC Local Flood Risk Management Strategy and Action Plan, March 2024

According to Natural Resources Wales's (NRW) Flood Risk Assessment Wales (FRAW) maps, the most apparent source of flood risk within the investigation area is associated with main river flooding (Figure 2). The highest risk to people and properties within FIA 08 is broadly associated with the River Taf. Low to high main river flood risk is observed along the eastern and western embankments of the river, particularly at the confluence of the River Taf and Rhondda, which flows into the investigation area from the southwest. Flood risk from surface water and ordinary ('small') watercourses is also noted across parts of FIA 08, although not as widespread or severe. Areas adjacent to the main river may be at risk of both surface water and main river flooding, as illustrated within RCT's Flood Risk Management Plan 2015[5].

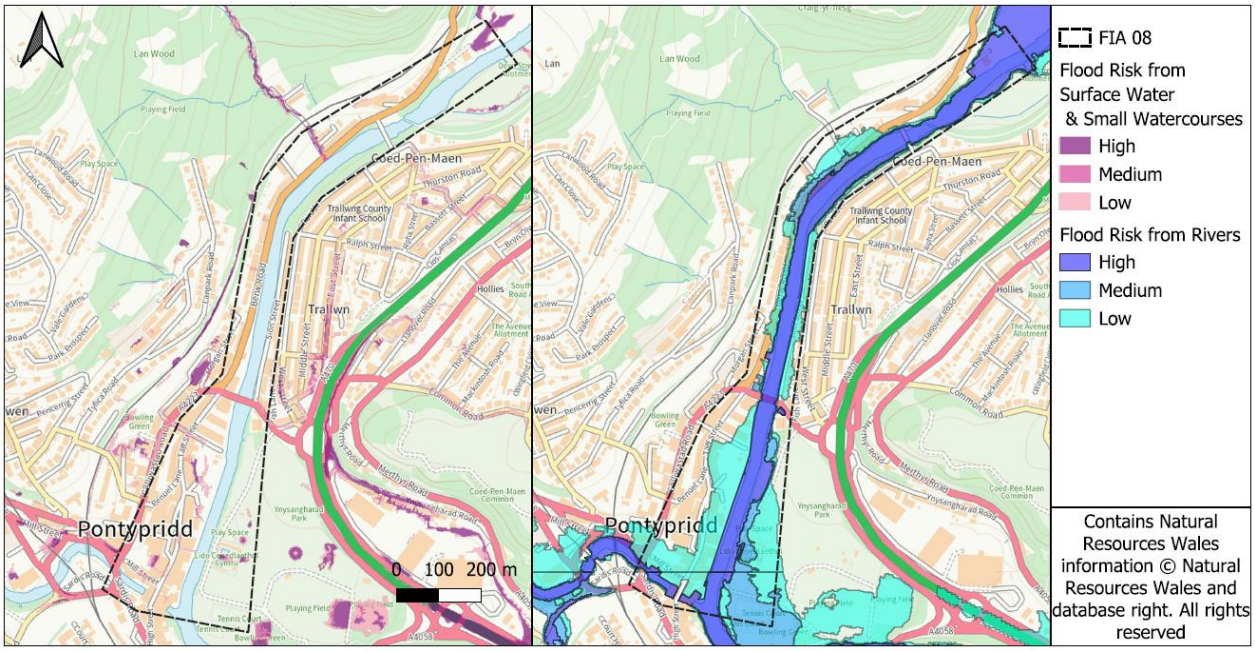

Figure 2: Natural Resources Wales's Flood Risk Assessment Wales (FRAW) map for surface water and small watercourses, and main river flood risk at FIA 08.

The Welsh Government's Communities at Risk Register (CaRR), produced by NRW, provides a national assessment of flood risk and hazard from all sources of flooding, enabling flood risk and hazard to be ranked at a local level to identify those

[5] RCTCBC Flood Risk Management Plan, 2015

communities at highest risk. The national flood risk rankings for the community of Pontypridd, which FIA 08 is located within, have been illustrated in Table 1 for the present day and climate change scenario (CaRR, 2024[6]).

Table 1: Surface water and ordinary watercourse, and main river (managed) flood risk ranking for the present day and climate change scenarios for Pontypridd according to the CaRR, 2024.

Community Name	Present Day		Climate Change Scenario (2120)	
	Surface Water & Ordinary Watercourse	Main River (Managed)	Surface Water & Ordinary Watercourse	Main River (Managed)
Pontypridd	59	119	40	79

As illustrated in Table 1, the flood risk rankings for both sources of flooding increase from the present day to the climate change scenario, indicating the increase in the risk of flooding to people and properties. Pontypridd is projected to rank 40th highest community in Wales for surface water and ordinary watercourse flood risk, and 79th highest community in Wales for main river flood risk in the climate change scenario.

Table 2 shows the projected increase in the number of properties at risk of both surface water and ordinary watercourse, and main river flood risk in the community of Pontypridd in line with climate change.

Table 2: Properties at Risk from surface water and ordinary watercourse, and main river flooding in the present day and climate change scenario for Pontypridd, according to the CaRR 2024.

Community Name	Properties at Risk- Present Day		Properties at Risk- Climate Change Scenario (2120)	
	Surface Water & Ordinary Watercourse	Main River (Managed)	Surface Water & Ordinary Watercourse	Main River (Managed)
Pontypridd	762	408	1000	519

[6] Communities at Risk Register 2024 – Present Day (CaRR) | DataMapWales

1.3. Drainage System

The surface water drainage systems that serve FIA 08 are that of the highway drainage network which is designed to manage the surface water within the highway, and public surface water sewer and combined sewer networks (foul and surface water) operated by Dŵr Cymru Welsh Water (DCWW).

There are also small sections of culverted watercourse network designed to convey ordinary watercourse flows present within FIA 08.

1.4. Investigation Evidence

To support the investigation, a range of qualitative and quantitative evidence has been gathered from numerous sources, the summary of which is listed in Table 3.

Table 3: Investigative evidence gathered in preparation of this Section 19 report

Source	Data
Residents	Photographs, videos, statements, email correspondence, public engagement survey responses
Responders' Statements	Local responders' statements
Risk Management Authority (RMA) Responses	In pursuant of Section 13 (1) of the FWMA, relevant RMAs provided RCTCBC with information to support the production of this report
CCTV Surveys	Internal surveys of the local drainage networks
Met Office Data	Weather Warning information (see FRM – Storm Bert – Overview Report)[3]
Natural Resources Wales	River Level and Flood Warning Data
RCT Local Flood Risk Management Strategy and Action Plan 2024	Site specific information and data for each Strategic Flood Risk Area and community in RCT

Source	Data
Communities at Risk Register 2024	Flood risk ranking and scores for all flood types based on community data in Wales
Envirocheck Report	A comprehensive environmental risk assessment tool used by professionals to evaluate potential hazards on a site. These reports include historical maps, flood risk assessments, geology maps and contamination screening.

1.5. PUBLIC ENGAGEMENT

Following the initial flood event that occurred on the 23 and 24 November 2024 during Storm Bert, flood risk officers from the RCT Flood Risk Management department were deployed to areas across the borough to investigate reports of internal flooding by residents. Residents engaged with by the Flood Risk Management team to help determine the initial impacts caused by the flooding event and to investigate the potential source(s) and pathways(s) of flood water during the event. Due to the volume of calls received by RCT's Out of Hours department, visits were prioritised to those areas experiencing significant internal flooding to residential properties.

To support these investigations, a public engagement exercise was undertaken by RCTCBC between 17 March and 28 April 2025. The exercise comprised of an online survey which enabled residents who were affected by the flood event to provide further detail on how they were impacted, the source and movement of flood water within the area, how receptors were impacted as well as drawing on local knowledge to query how local conditions could have exacerbated the event. Residents were also encouraged to submit photo/video evidence of flooding to their properties. This data is useful to help the LLFA better understand and validate our assessment of the flood event to support the investigation under Section 19 of the FWMA.

A total of 6 responses to the public engagement exercise were received from individuals within FIA 08.

2. FLOODING HISTORY

2.1. PREVIOUS FLOOD INCIDENTS

Table 4 lists the previous incidences of flooding to properties within FIA 08 based on resident's accounts and available historical information held by the Council.

The most recent and significant flooding event to have impacted Pontypridd occurred on the 15 and 16 of February 2020 during Storm Dennis which internally impacted 1,498 homes and businesses across RCT, of which 158 were impacted across Pontypridd. During Storm Dennis, the River Taf at Pontypridd rose to almost four times its typical level, reaching its highest recorded river level since the monitoring station's opening in 1970. Record-breaking rainfall resulted in the River Taf overtopping its embankments, causing internal flooding to several properties. Worst affected areas in Pontypridd during the flood event in 2020 include Berw Road, Sion Street, Taff Street and Mill Street. Further details of the flooding caused by Storm Dennis at Pontypridd can be found in the published Section 19 report titled "Storm Dennis – Flood Investigation Area RCT11 (Pontypridd)"[7].

Historical flood information and residents accounts captured by RCT's Flood Risk Management officers indicate that properties along Sion Street had experienced minor internal flooding from the main river in 1998, however, many properties within the investigation area had not experienced internal flooding from the overtopping of the River Taf in over 40 years prior to Storm Dennis. The flooding experienced during Storm Dennis was noted as the most significant flood incident to impact Pontypridd since the floods of December 1979.

Previous incidences of surface water and sewer flooding to properties have been recorded across FIA 08 during smaller-scale events following Storm Dennis, in

[7] Storm Dennis- Flood Investigation Area RCT11 (Pontypridd)

particular along Taff Street and Sion Street. Storm events include Storm Christoph in January 2021, an unnamed storm event in October 2021, Storm Franklin in February 2022 and an unnamed storm event in January 2023. Although the main rivers Taf and Rhondda were not reported to have overtopped during these storm events, the high river levels are considered to have influenced the discharge of the surface water and combined sewer drainage networks, resulting in several properties suffering minor internal flooding.

Table 4: Record of historical flood events within FIA 08 prior to Storm Bert in November 2024.

Name & Date of Storm Event	Nr Receptors Impacted Internally	Streets Affected
Unnamed Storm - December 1979	Unknown	Unknown
Unnamed Storm – October 1998	Unknown	Unknown
Storm Dennis – February 2020	158	Taff Street, Mill Street, Berw Road, Sion Street
Unnamed Storm – June 2020	1	Taff Street
Storm Christoph – January 2021	1	Taff Street
Unnamed Storm – October 2021	4	Sion Street
Storm Franklin – February 2022	2	Taff Street, Sion Street
Unnamed Storm – January 2023	18	Taff Street

2.2. FLOOD INCIDENT

The flooding incident that occurred on 23 and 24 November 2024 was a result of an extreme rainfall event, designated by the Met Office as 'Storm Bert'. The rainfall event affected the majority of RCT and caused widespread flooding to communities.

Specific details of Storm Bert, such as rainfall and watercourse level analysis, are covered within a separate overview report that covers the wider RCT area, referenced 'Storm Bert November 2024 – Overview Report'[3].

The post event inspections undertaken on the days following the storm event by RCTCBC's Flood Risk Management team and RCTCBC's Public Health, Protection and Community teams identified 23 residential and 39 non-residential properties as internally flooded within FIA 08.

A summary of the source(s) and pathway(s) for flooding within FIA 08 during Storm Bert have been outlined in Table 5 and further described throughout this section.

Table 5: Summary of the source(s), pathway(s) and receptor(s) affected during Storm Bert within FIA 08

Source	Pathway	Receptor
The River Taf exceeded its channel capacity, resulting in out of channel flows across the eastern and western riverbanks at multiple locations throughout the investigation area, including Berw Road, Sion Street and Ynysangharad Park.	Main river flood water conveyed onto Berw Road on the western side and Sion Street and Ynysangharad Park on the eastern side, before entering the front and rear of several properties.	The out of channel flows resulted in internal flooding to 8 commercial units at the Old Coach Works at Berw Road and contributed to the internal flooding of 23 residential and 1 non-residential property at Berw Road and Sion Street. Ynysangharad Park and the National Lido were also

Source	Pathway	Receptor
		impacted by flooding from the River Taf.
Water was reported as seeping through the external garden walls and ground floor of residential properties at Sion Street.	The exact flow path is unknown however the conveyance is attributed to vertical seepage of water infiltrating the structural foundations and external garden walls of properties at Sion Street as a result of the high River Taf levels exerting significant hydraulic pressures on the surrounding soil during the storm event.	Vertical seepage of water through the sub-surface contributed to the internal flooding of properties at Sion Street.
Water was reported as seeping into the basements of commercial premises along Taff Street via cracks in the foundations.	The exact flow path is unknown however the conveyance is attributed to the seepage of water infiltrating the structural foundations of several commercial properties, as a result of the accumulation of standing water a lane to the rear of Taff Street.	The seepage of water through structural foundations contributed to the internal flooding of 5 commercial properties at Taff Street.
Private surface water drainage to the rear of two properties at Sion Street were reported to have surcharged during the storm event.	Flood water from the surcharged private drainage entered the rear of two properties at Sion Street.	Surface water contributed to the internal flooding of 2 properties along Sion Street.
The combined sewer network at Sion Street surcharged via a manhole at the northern end of the street during the storm event.	Flood water from the surcharged manhole travelled south along Sion Street before being re-directed by sandbags into the highway surface water drainage system.	Highway flooding to Sion Street however no properties were internally impacted by the surcharged manhole.
The combined sewer network at Mill Street surcharged via two manholes associated to	Flood water from the combined sewer network flowed from the two manholes	The surcharging of the combined sewer network at Mill Street contributed to the

Source	Pathway	Receptor
the Trunk Sewer and its Overflow Network.	located at the northern end of Mill Street, in a southeasterly direction, towards a low point in the road where water accumulated and entered the front of several commercial properties.	internal flooding of 17 commercial properties.
A combined sewer manhole within the boundary of a commercial premise at Mill Street surcharged during the storm event.	Flood water from the manhole was contained within the boundary of the commercial premise.	The surcharging manhole contributed to the internal flooding of 1 commercial property at Mill Street.
A highway surface water slot drain surcharged during the storm event. The slot drain is located within the topographical low point at Mill Street.	Flood water from the slot drain was observed to accumulate within Mill Street, however, water was contained within the topographical low point between several businesses.	The surcharging highway slot drain contributed to the internal flooding of 17 commercial properties at Mill Street.
Following heavy rainfall, levels within the River Rhondda rose and entered the basements and ground floor level of 3 commercial properties at Mill Street.	Main river flood water conveyed into the rear of several businesses located adjacent to the main river. This flooding was largely contained within the basement of the properties affected but was also reported to have emerged from the basements and onto the ground floor of properties.	The River Rhondda caused internal flooding to the basements and ground floor level of 3 commercial premises.
A surface water drain connecting to the River Taf was observed as surcharging outside a commercial property at Taff Street during the storm event.	Flood water from the drain accumulated within the rear lane behind properties at Taff Street and outside the front of a commercial property located adjacent to the drain.	The surcharging drain caused internal flooding to 1 commercial property and is considered to have contributed to the flooding of 5 commercial properties at Taff Street.

Source	Pathway	Receptor
A combined sewer manhole was identified as surcharging to the rear of commercial properties at Taff Street.	Flood water from the surcharging manhole entered the rear of properties along Taff Street.	The surcharging combined sewer manhole caused internal flooding to the basements of 2 commercial properties at Taff Street.
A manhole associated to a culverted watercourse network was identified as surcharging at Gas Road.	Flood water from the surcharging manhole travelled east along Gas Road before accumulating within Gas Road car park.	The surcharging manhole caused flooding to Gas Road car park.
The combined sewer network within the boundaries of some commercial properties at Taff Street, and residential properties at Berw Road, were reported to have surcharged via toilet and shower drains during the storm event.	Wastewater surcharged from various drainage infrastructure and was largely contained within the boundaries of premises.	The surcharging of combined sewer drainage infrastructure contributed to the internal flooding of residential properties at Berw Road and at least 3 commercial premises at Taff Street.
Intense rainfall and subsequent surface water runoff from the surrounding area.	Surface water was observed along several highway networks within the investigation area. This is considered to have contributed to the main river and sewer flooding throughout FIA 08.	Surface water is considered to have exacerbated the flooding experienced at many internally flooded properties throughout FIA 08 during Storm Bert.

On review of Table 4, the primary source of the recorded flooding within FIA 08 was a result of the River Taf exceeding its channel capacity, resulting in out of channel flows across its eastern and western river banks at several locations during the storm event, including Berw Road, Sion Street and Ynysangharad Park. Sewer flooding as a result of various drainage infrastructure surcharging during the storm event has also been identified as a primary source of flooding to parts of FIA 08, notably at Mill Street and Taff Street.

Vertical water seepage into the foundations of homes and businesses as a result of hydraulic pressures exerted by the River Taf, in addition to localised surface water flooding was identified as a contributing source of flooding to several properties across FIA 08. The River Rhondda was also identified as a contributing source of flooding to the basements of properties at Mill Street.

During the early hours of Sunday 24 November 2024, RCT received several calls from residents at Pontypridd reporting the overtopping of the River Taf at Sion Street and Berw Road. At Sion Street, the River Taf exceeded its channel capacity during the storm event, resulting in the overtopping of the highway wall on the eastern river bank at the southern end of the street. Main river water entered the street and accumulated within the topographical low point, reaching a depth of 3 feet in the worst affected areas, according to residents. The overtopping of the River Taf at Sion Street is illustrated below in Figures 3 and 4 which were captured on the morning of Sunday 24 November 2024.

Figure 3: Image of the River Taf exceeding its channel capacity and overtopping the highway wall at Sion Street on the eastern river bank during Storm Bert (Image: BBC News).

Figure 4: Image of the River Taf exceeding its channel capacity and overtopping the highway wall at Sion Street on the eastern river bank during the morning of Sunday 24 November 2024 (image captured by RCT FRM officer).

Water was restricted from entering the fronts of properties due to the installation of property flood resistance (PFR) measures (i.e., flood doors), however water was reported to have entered homes at Sion Street via ingress through the ground floor, external garden walls and from neighbouring property walls during the storm event. One resident also reported a fault with PFR equipment which led to water ingress into the property.

Figure 5 depicts residents at Sion Street bailing water out of their properties over their garden walls and flood doors. Reports from residents noted the water entering their properties from the ground was dirty brown water with sand and mud. Water ingress was also reported to have occurred at the same time as the overtopping of the River Taf onto the road.

Private surface water drainage infrastructure was also reported to have surcharged during the storm event, with flood water backing up from the drainage system as a result of the drainage systems in the area becoming over capacitated. This resulted in flood water entering the rear of at least 2 properties along Sion Street, contributing to the flooding coming through the ground floor of properties.

Figure 5: Residents at Sion Street bailing water out of their homes during Storm Bert (Image: Getty Images).

A combined sewer manhole at the northern end of Sion Street (referred to as 'Manhole 1' in Figure 6) was also noted as surcharging during the storm event. Flood water from the manhole flowed southwards down the street and was diverted by residents into the highway surface water drainage system. As a result, flooding to nearby properties was avoided.

A total of 9 residential and 1 non-residential properties at Sion Street were impacted by internal flooding during Storm Bert.

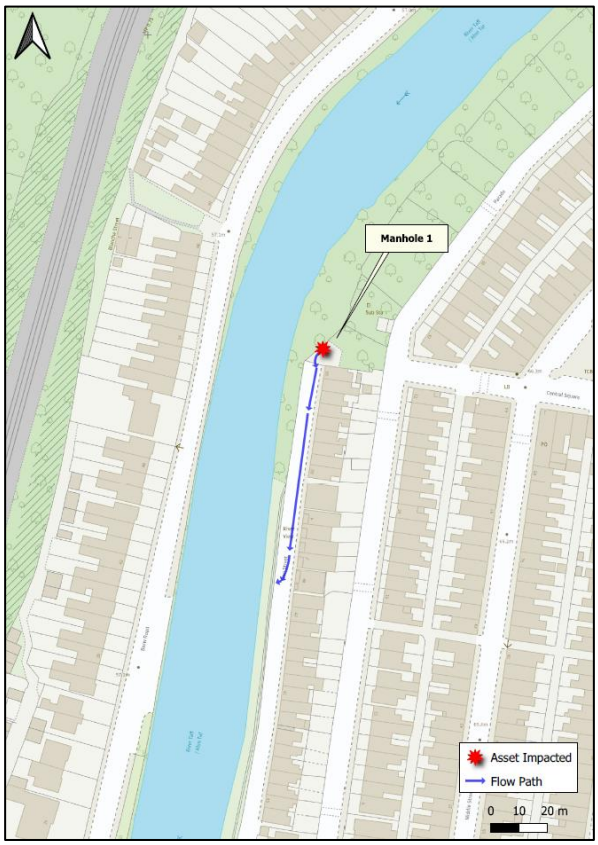

Figure 6: Location plan showing 'Manhole 1' which surcharged and flooded at Sion Street during Storm Bert.

The exceedance of the River Taf's channel capacity during Storm Bert also resulted in out of channel flows across its western river bank at locations along Berw Road. At the northern end of Berw Road at the Old Coach Works, 8 commercial premises were internally impacted due to out of channel flows from the River Taf at this location. Flooding in this area rose to depths of over 1 metre, as illustrated in Figure 7.

Further south along Berw Road, out of channel flows opposite Berw Road Field resulted in main river water travelling in a south-westerly direction along the highway, impacting 14 residential properties on its course. Evidence of main river flooding along Berw Road is shown in Figure 8.

Figure 7: Image of main river flooding at the Old Coach Works, Berw Road on 24 November 2024 (image captured by RCT FRM officer).

Figure 8: Image of main river flooding along Berw Road on Sunday 24 November 2024 (Image: Social Media).

Drainage infrastructure associated to the combined sewer network within the boundaries of properties was also reported to have impacted properties along Berw Road, with some residents reporting water entering their homes via shower and bath drains, contributing to the main river flooding from the front.

Ynysangharad Park and the National Lido of Wales were also impacted by main river flooding from the River Taf. Figure 9 illustrates the extent of flooding to the grounds following the peak of the storm event.

Figure 9: Image showing the flood damage to the National Lido of Wales and Ynysangharad Park as a result of main river flooding from the River Taf during Storm Bert (Image: Wales Online).

Within Pontypridd Town Centre, the worst affected areas include Mill Street and Taff Street. During the morning of Sunday 24 November, several reports of internal flooding to businesses along Mill Street and Taff Street were received by the Council.

Figure 10 depicts the observed pathways of flooding at Mill Street and the infrastructure know to have surcharged and contributed to the flooding during Storm Bert.

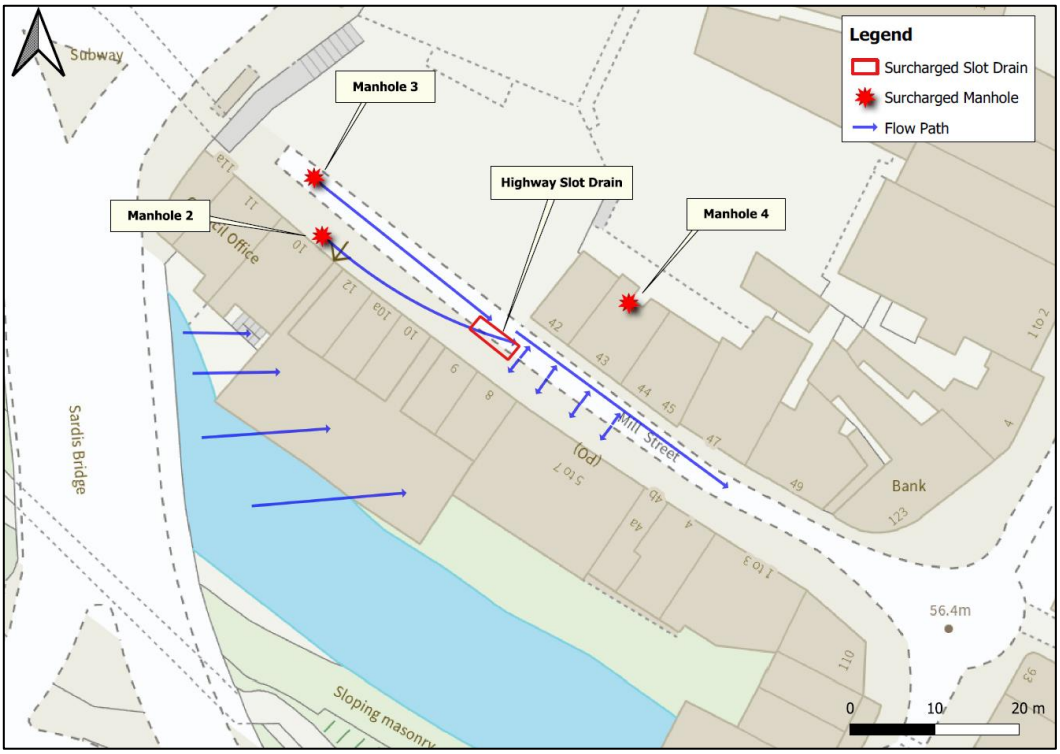

Figure 10: Observed flow paths and surcharging drainage infrastructure at Mill Street during Storm Bert (23-24 November 2024).

The primary source of flooding to commercial premises along Mill Street was identified as the combined sewer network which surcharged from two manholes located at the top end of Mill Street during the storm event. Both manholes (referred to as ‘Manhole 2’ and ‘Manhole 3’ in Figure 10) are associated to the Trunk Sewer and its Overflow Network which runs through Mill Street and outfalls into the Rhondda River to the

southwest of Mill Street. Figure 11 depicts both manholes surcharging during Storm Bert.

Figure 11: Image of 'Manhole 2' and '3' associated to the combined sewer network at Mill Street surcharging during Storm Bert on Sunday 24 November 2024 (Image provided by business owner).

The pathway of water from the surcharging manholes travelled east along Mill Street and accumulated within the street's topographical low point approximately 50 metres east of the surcharging infrastructure. A highway surface water slot drain (referred to as 'Highway Slot Drain' in Figure 10) was also identified as a contributing source of flooding in the area. The slot drain was observed as surcharging brown coloured water during the storm event, contributing to the accumulation of flood water within the low point.

Figures 12 and 13 depict the flood water and depths reached at Mill Street during the storm event. Business owners at Mill Street described the flood depth outside their premises reaching almost a metre in height at the lowest point in the street, principally as a result of the sewer flooding but exacerbated by flows from the 'Highway Slot Drain'. Flood water entered the fronts of 17 commercial properties along Mill Street.

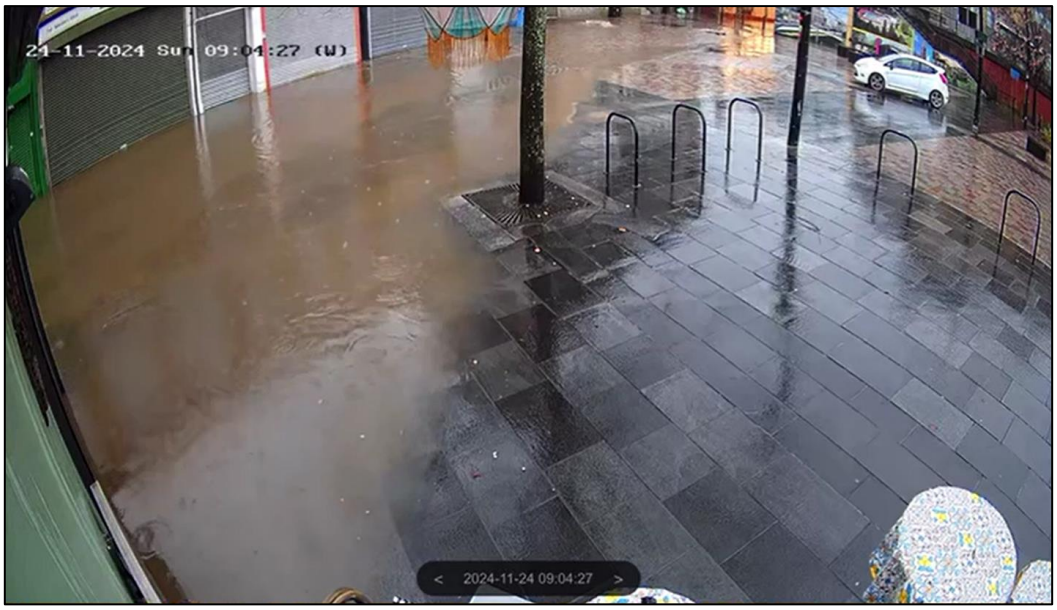

Figure 12: Image of flood water accumulating at Mill Street and evidence of 'Manhole 2' and '3' surcharging during Storm Bert (image captured at 09:04 on 24 November 2024) (image provided by business owner)

Figure 13: Image depicting the flood water depth within the low point at Mill Street during Storm Bert (image provided by business owner)

During post event inspections carried out by RCT's Flood Risk Management team, a combined sewer manhole (referred to as 'Manhole 4' in Figure 10) within a commercial premise at Mill Street was also identified as surcharging during the storm event. Flood water from the surcharging manhole was contained within the property and contributed to the flooding entering the property from the front.

The River Rhondda was also identified to have entered the basement area of 3 commercial premises located adjacent to the main river at Mill Street. Main river water was observed by business owners as emerging from the basements and impacting the ground floor level of properties. Figure 14 shows evidence of debris carried by the high flows in the River Rhondda and deposited along the fire exit of a commercial premise at Mill Street following the storm event. The deposited debris is indicative of the height that the River Rhondda rose to during Storm Bert, submerging the basement level and reaching the ground level of the commercial property.

Figure 14: Image showing debris deposited by the River Rhondda on fire exit steps outside the basement and ground level of a commercial property at Mill Street (image captured by RCT FRM officer on 25 November 2024).

Several commercial properties along Taff Street also reported internal flooding during Storm Bert. Post event inspections and accounts provided by business owners identified sewer and surface water flooding to be the primary types of flooding along Taff Street. Figure 15 depicts the observed pathways of flooding and the infrastructure known to have surcharged and contributed to the flooding at Taff Street during Storm Bert.

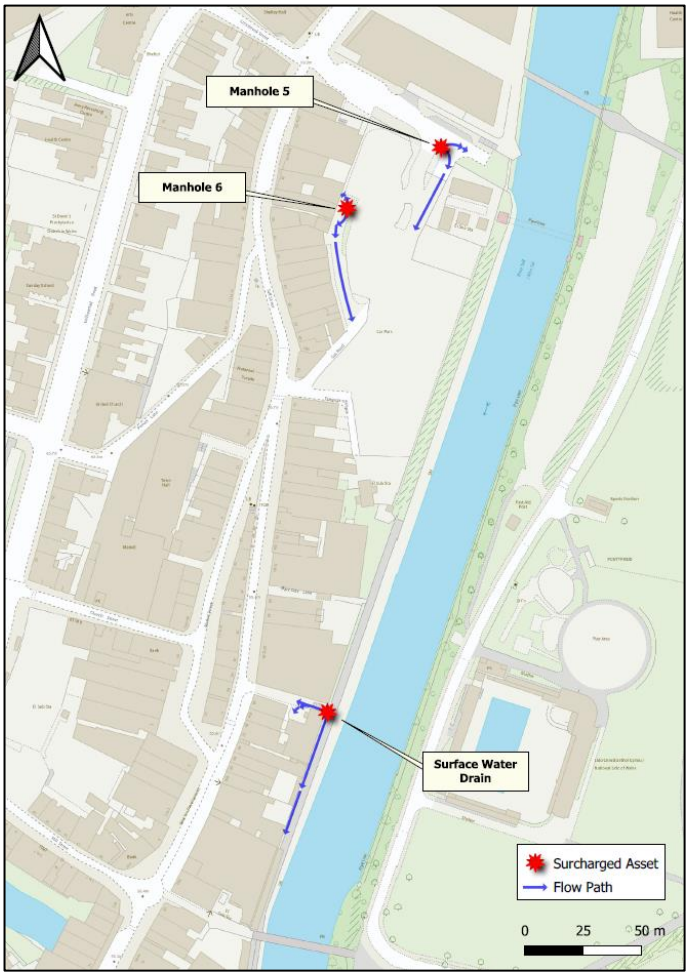

Figure 15: Observed flow paths and surcharging drainage infrastructure at Taff Street during Storm Bert (23-24 November 2024).

Post event inspections carried out by RCT's Flood Risk Management team in the days following the event identified two manholes in the area to have surcharged. The location of both manholes is shown in Figure 15. 'Manhole 5' is associated to a culverted watercourse network running through the area. Flood water from 'Manhole

5’ accumulated within Gas Road car park (illustrated in Figure 16) but was not reported to have impacted properties. ‘Manhole 6’ is associated to the combined sewer network and was reported to have surcharged within the rear lane behind properties at Taff Street, resulting in water entering the rear of two commercial properties.

Drainage infrastructure associated to the combined sewer network within the boundaries of commercial properties was also reported to have surcharged during the storm event, contributing to the internal flooding of at least 3 commercial properties along Taff Steet. The flood water was reported to be foul-smelling, grey and dirty in colour, indicative of wastewater from the combined sewer network.

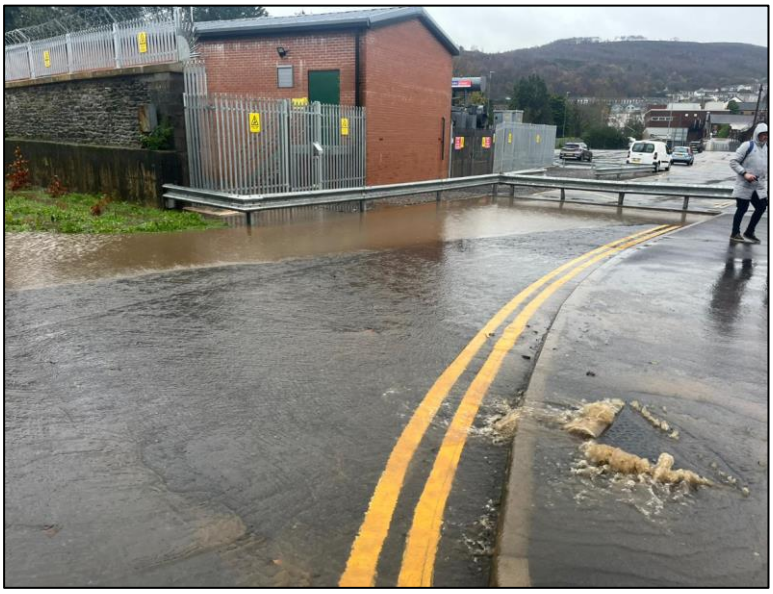

Figure 16: Image of 'Manhole 5' surcharging at Gas Road Car Park, Taff Street during Storm Bert (captured by an RCT FRM officer on 24 November 2024).

Further south along Taff Street, a privately owned surface water drain (referred to as ‘Surface Water Drain’ in Figure 15), which outfalls directly to the River Taf at the bottom of Clwb y Bont Lane, was identified as the source of flooding to 1 commercial property and contributed to the internal basement flooding of 5 commercial properties. Business owners reported that the ‘Surface Water Drain’ was surcharging during the storm event, resulting in water entering the front and rear of a commercial property situated

adjacent to the drain, and accumulating within the rear lane behind commercial properties along Taff Street.

An image of the 'Surface Water Drain' and a view of the rear lane behind Taff Street is shown in Figure 17. As illustrated in Figure 17 (right), roof and yard drainage infrastructure associated to several commercial properties along Taff Street also drain directly into the rear lane which then discharges towards the 'Surface Water Drain'. This is also considered to have contributed to the accumulation of water within the rear lane.

Figure 17: Image of the 'Surface Water Drain' (*left*) and the rear lane which discharges into the 'Surface Water Drain' behind commercial properties along Taff Street (*right*) (captured by an RCT FRM officer following Storm Bert).

Based on reports from business owners at Taff Street, water entered the basements of at least 5 properties from the rear, with water reported to have entered via cracks in the building's foundations and floor. The accumulation of water within the rear lane is considered to have contributed to water ingress to the basements of the affected properties.

In addition to the main river and sewer flooding, intense rainfall and resultant surface water flows exacerbated flooding across FIA 08 during Storm Bert.

2.3. RAINFALL ANALYSIS

See RCT's 'Storm Bert November 2024 – Overview Report'[3], for a detailed analysis of the rainfall and ordinary watercourse response.

3. POSSIBLE CAUSES

The below sections describe the possible causes of flooding that occurred within FIA 08 during Storm Bert.

3.1. CULVERT CONDITIONS

Following the surcharging of ‘Manhole 5’ which resulted in flooding to Gas Road Car Park during the storm event, the Council and DCWW, respectively, undertook CCTV survey operations to establish the assets connectivity. It was identified that ‘Manhole 5’ is associated to a culverted ordinary watercourse which conveys beneath Gas Road and discharges into the River Taf. The section of surveyed culverted watercourse network at Gas Road is shown in Figure 18.

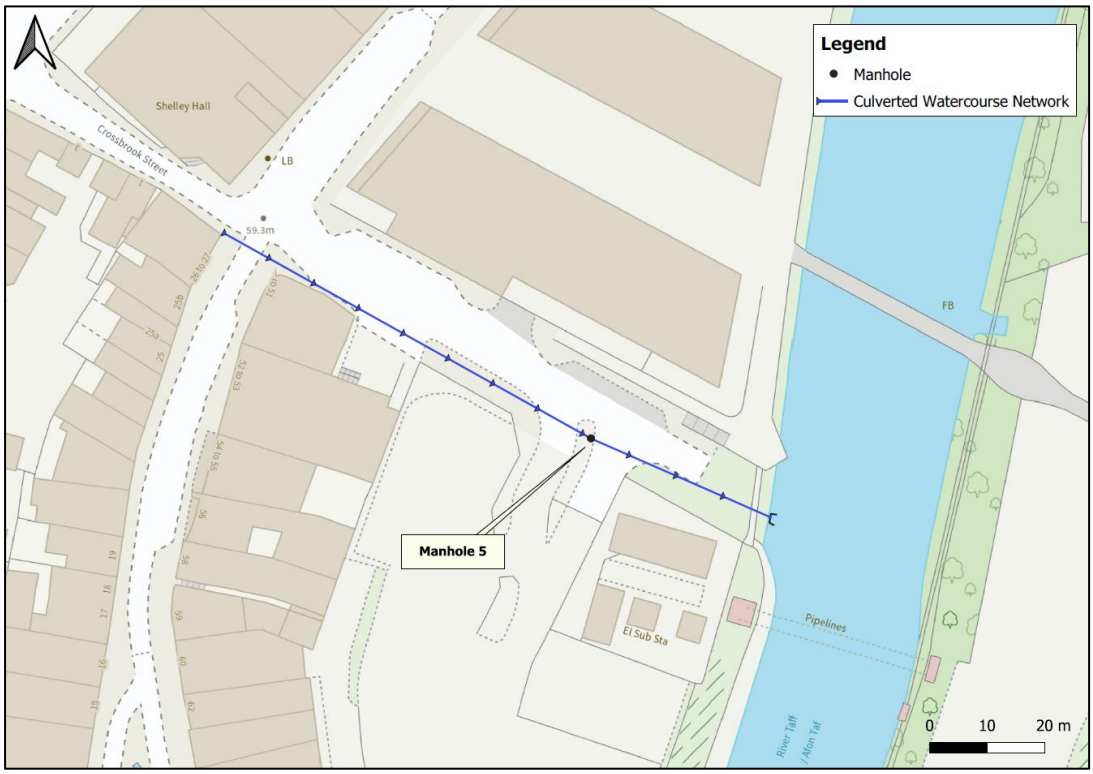

Figure 18: Surveyed culverted ordinary watercourse network conveying beneath Gas Road in FIA 08.

An image of ‘Manhole 5’ is shown in Figure 19 which shows a large diameter culvert with a DCWW combined sewer pipe crossing through. Based on the CCTV survey, the culvert appears to no longer be in use, showing physical signs of deterioration, corrosion and blockages at the downstream and upstream part of the culvert. The culvert was also dry during both CCTV operations, indicating the network no longer functions as part of the active drainage network.

Figure 19: Image of the internal condition of 'Manhole 5' showing a DCWW combined sewer pipe crossing through the large diameter culvert (captured during CCTV operations in August 2025).

Upon an inspection of the outfall associated to the culverted network, a non-return flap valve was not present. The absence of such a valve presents the risk of river water flowing back into the drainage system during high water events, leading to flooding of upstream infrastructure.

Based on GPS-based topographic surveying undertaken by Council appointed contractors, the peak level of the River Taf during Storm Bert was higher than the cover level of ‘Manhole 5’. Without the presence of a non-return flap valve, the elevated pressure of the River Taf is considered to have caused river water to enter the drainage network and overwhelm the system, resulting in the surcharging of ‘Manhole 5’.

3.2. ORDINARY WATERCOURSE CONDITIONS

There are no open ordinary watercourses within the investigation area. As such, ordinary watercourse conditions have not been investigated as part of this report.

3.3. Main River

There are two designated main rivers which flow through FIA 08. The River Taf flows in a south westerly direction through the investigation area. The River Rhondda enters the investigation area from the west. The confluence of both main rivers is located just south of Pontypridd Town Centre. From here the River Taf continues to flow in a south easterly direction towards Treforest.

As previously stated in Section 2.2, many residential and commercial properties across FIA 08 were flooded as a result of the main rivers Taf and Rhondda exceeding their channel capacities and resulting in out of channel flows during Storm Bert.

3.3.1. Main River Levels and Flood Warnings

The hydrographs in Figures 20 and 21 illustrate the significant rise in levels in the River Taf and Rhondda River in response to rainfall between the 23 and 25 November 2024. River level data for the Taf was captured at NRW's Pontypridd gauge, located adjacent to Nile Street, approximately 600 metres southeast of FIA 08, and at NRW's Trehafod gauge for the Rhondda River which is located approximately 2 kilometres west of FIA 08.

The green bar displayed on the hydrographs (Figures 20 and 21) shows the typical level of the River Taf at Pontypridd station, ranging between 0.4 and 1.3 metres, and the River Rhondda at Trehafod, ranging between 0.1 and 0.7 metres. Both main river levels remained above their typical levels for over 48-hours, highlighting the severity of the storm event and its unprecedented nature. At the peak of the storm event, the River Taf was over 3 times its typical level (Figure 20) and the Rhondda River was over 5 times its typical level (Figure 21).

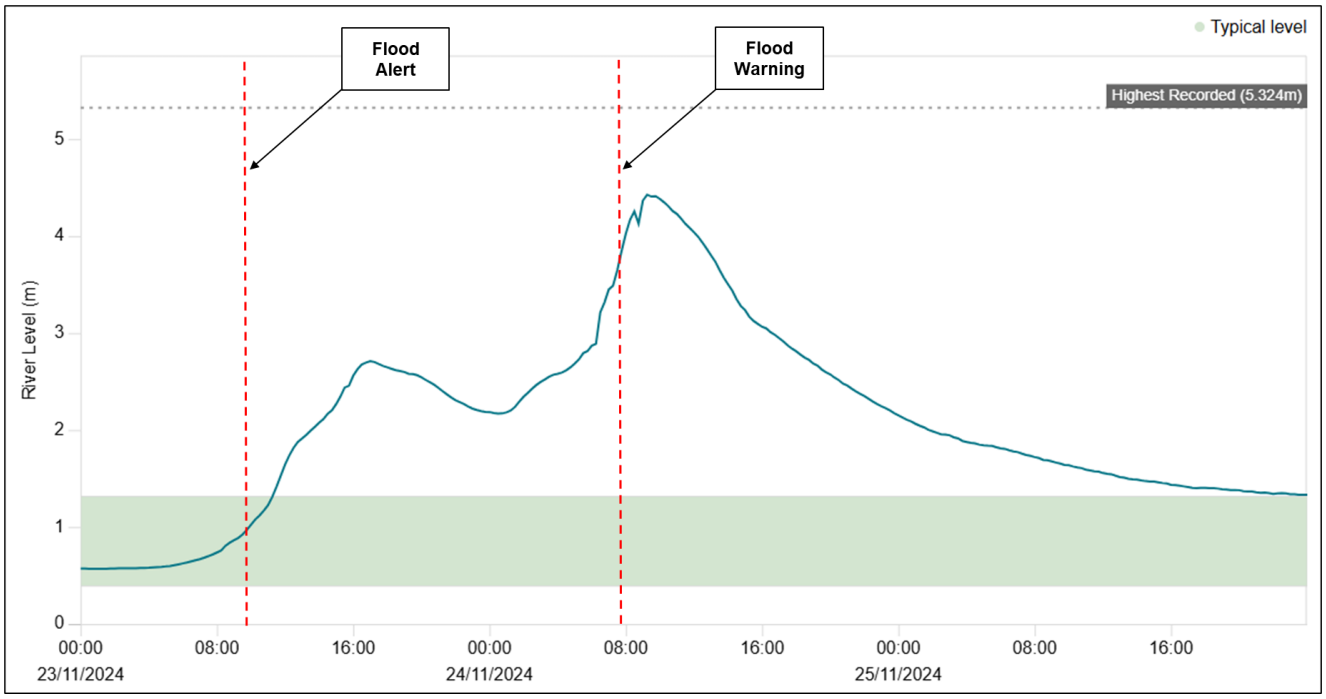

Figure 20: The River Taf levels at Pontypridd station between 23 and 25 November 2024 (Natural Resources Wales)

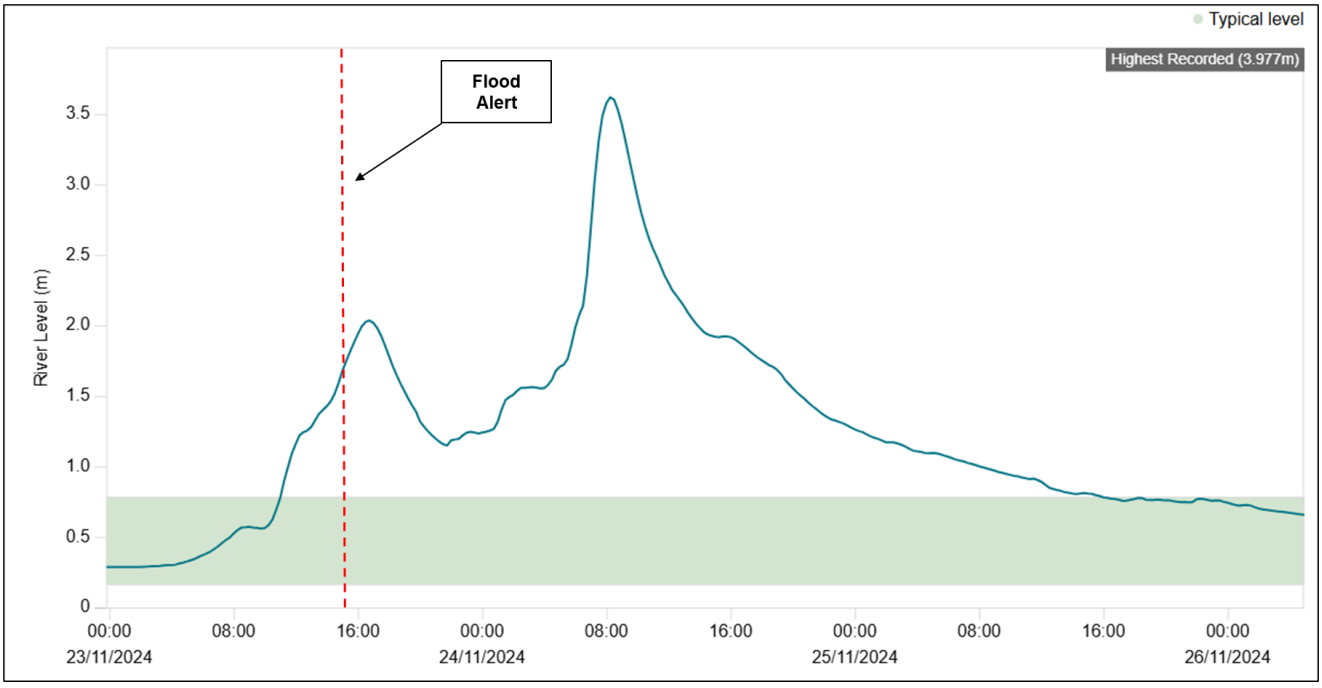

Figure 21: The River Rhondda at Trehafod station between 23 and 25 November 2024 (Natural Resources Wales)

Investigation area FIA 08 falls within NRW's 'River Taff' Flood Alert Area and 'River Taff at Pontypridd' Flood Warning Area. A small part of FIA 08 also falls within NRW's 'Rhondda Rivers' Flood Alert Area. The 'Flood Alerts' (indicating possible flooding) and 'Flood Warnings' (indicating flooding is expected) issued by NRW for the Rivers Taf and Rhondda at FIA 08 during Storm Bert are shown in Table 5 and have also been illustrated within the hydrographs above.

Table 6: Flood Alert and Warnings issued by NRW for the main river flowing through FIA 08 during Storm Bert.

Flood Warning Type	Location	Start Date & Time	River Level (m)	NRW Station Name
Flood Alert	River Taf	23/11/2024 10:01	1.023	Pontypridd
Flood Alert	Rhondda Rivers	23/11/2024 15:10	1.677	Trehafod
Flood Warning	River Taf at Pontypridd	24/11/2024 07:41	3.846	Pontypridd

NRW issued a 'Flood Alert' (indicating possible flooding) for the River Taf at approximately 10:00 on Saturday 23 November 2024; at which point the main river at Pontypridd station was over 1 metre in depth and rising quickly in response to rainfall. Following a short drop in levels, the River Taf began to rise again, reaching a peak level of 4.427 metres at 09:15 on 24 November, before falling back to typical levels by the 25 of November 2024. According to NRW, the River Taf rose 300mm every 15 minutes at the height of the rainfall[8].

NRW issued a 'Flood Warning' message (indicating flooding is expected) for the River Taf at Pontypridd at 07:41 on Sunday 24 November 2024; at which point the River Taf was 3.8 metres in height. It was reported by residents that the River Taf at Sion Street and Berw Road had exceeded its channel capacity and was flowing onto both streets prior to the Flood Warning, at approximately 07:15 on 24 November. The River Taf at

[8] Natural Resources Wales / Storm Bert

Pontypridd reached its peak level approximately 1 hour 30 minutes following NRW's Flood Warning.

Flooding to 14 residential and 10 non-residential properties at Berw Road and Ynysangharad Park have been attributed to the River Taf exceeding its channel capacity and causing out of channel flows during Storm Bert. The influence of the high River Taf levels and the overtopping onto Sion Street during Storm Bert, has been attributed as a cause of flooding to a further 9 residential and 1 non-residential properties. This mechanism of flooding has been discussed in further detail in Sections 3.3.3 and 3.7.

NRW issued a 'Flood Alert' (indicating possible flooding) for the Rhondda Rivers at approximately 15:00 on Saturday 23 November 2024; at which point the Rhondda River at Trehafod was over 1.6 metres and rising. The Rhondda River at Trehafod reached a peak river level of 3.619 metres at 08:15 metres on Sunday 24 November 2024, before falling back to typical levels by the 25 of November. The peak river level recorded at Trehafod station was 0.358 metres lower than the peak level recorded at the station during Storm Dennis in February 2020.

Although 3 commercial premises at Mill Street were impacted by flooding from the Rhondda River during the storm event, Mill Street does not fall within a NRW Flood Warning Area for the Rhondda River. As a result, no warning was issued to Mill Street based on flooding from the Rhondda River.

3.3.2. Main River Flood Risk

Figure 22 is an excerpt from NRW's Flood Risk Assessment Wales (FRAW) mapping exercise which depicts the main river flood risk extents for the 'Managed' scenario, i.e., with the presence of flood defence infrastructure. The darker shading identifies areas at higher risk of flooding (more frequent/less extreme rainfall events) and lighter shading showing the lower risk areas (less frequent/more extreme rainfall events).
The flooding that occurred within FIA 08 during Storm Bert is largely consistent with the modelled outputs of NRW's FRAW map (Figure 21), with the majority of the impacted properties falling within an area of low main river flood risk. Notably, areas of Berw Road, Mill Street and Ynysangharad Park are identified at medium and high risk of main river flooding according to NRW's mapping.

A low risk of flooding means that an area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 100 (1%) each year; meanwhile, a medium risk of flooding signifies a yearly chance of flooding between 1 in 100 (1%) and 1 in 30 (3.3%).

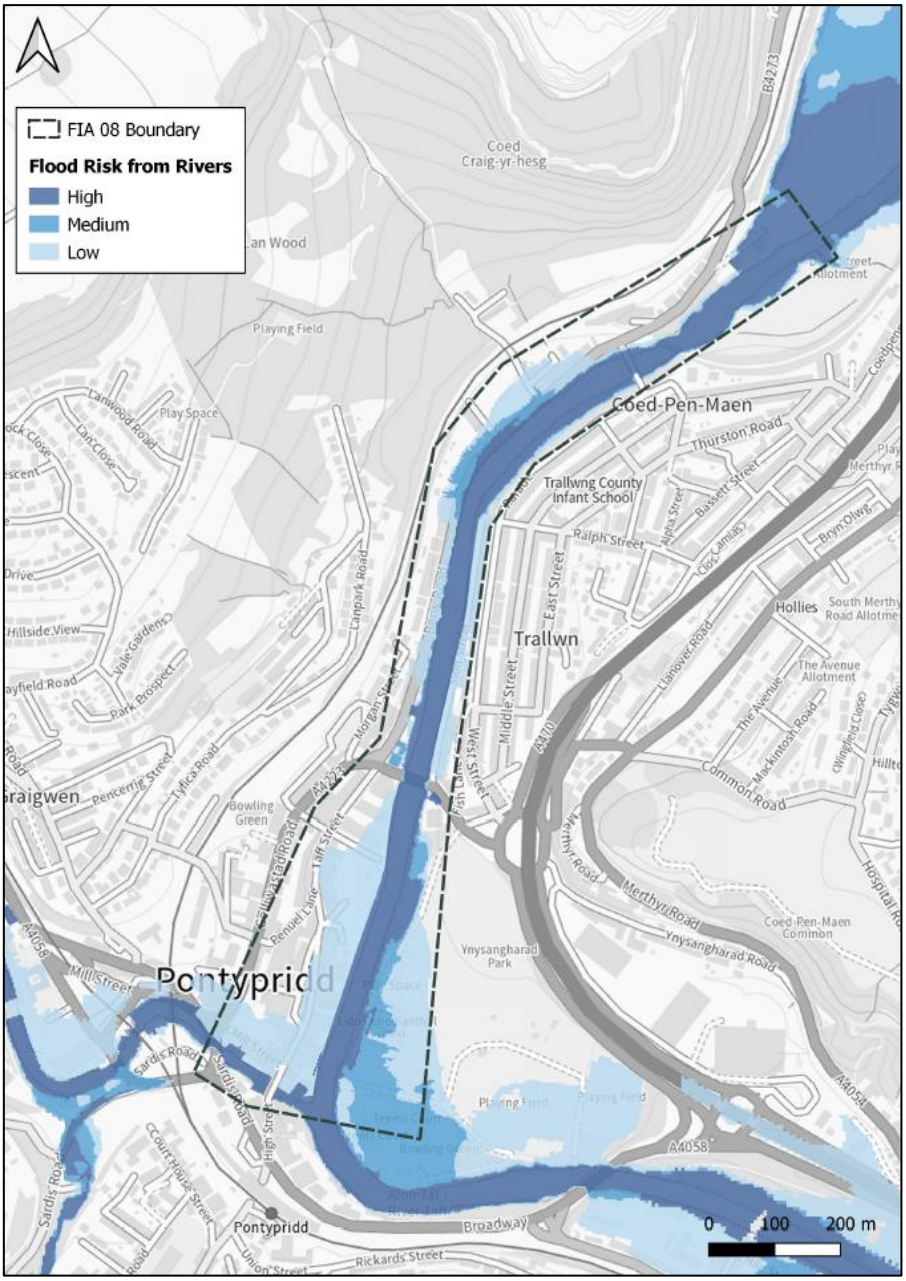

Figure 22: NRW's FRAW map for River sources at FIA 08. Natural Resources Wales.

3.3.3. Main River Flood Defences

As illustrated in Figure 23 (demarcated by the bold red line), there are approximately 2.3 kilometres of recorded flood defence infrastructure along the eastern and western banks of the River Taf at FIA 08. This infrastructure comprises of flood walls, embankments, flood gates and demountable defences which are operated and maintained by NRW.

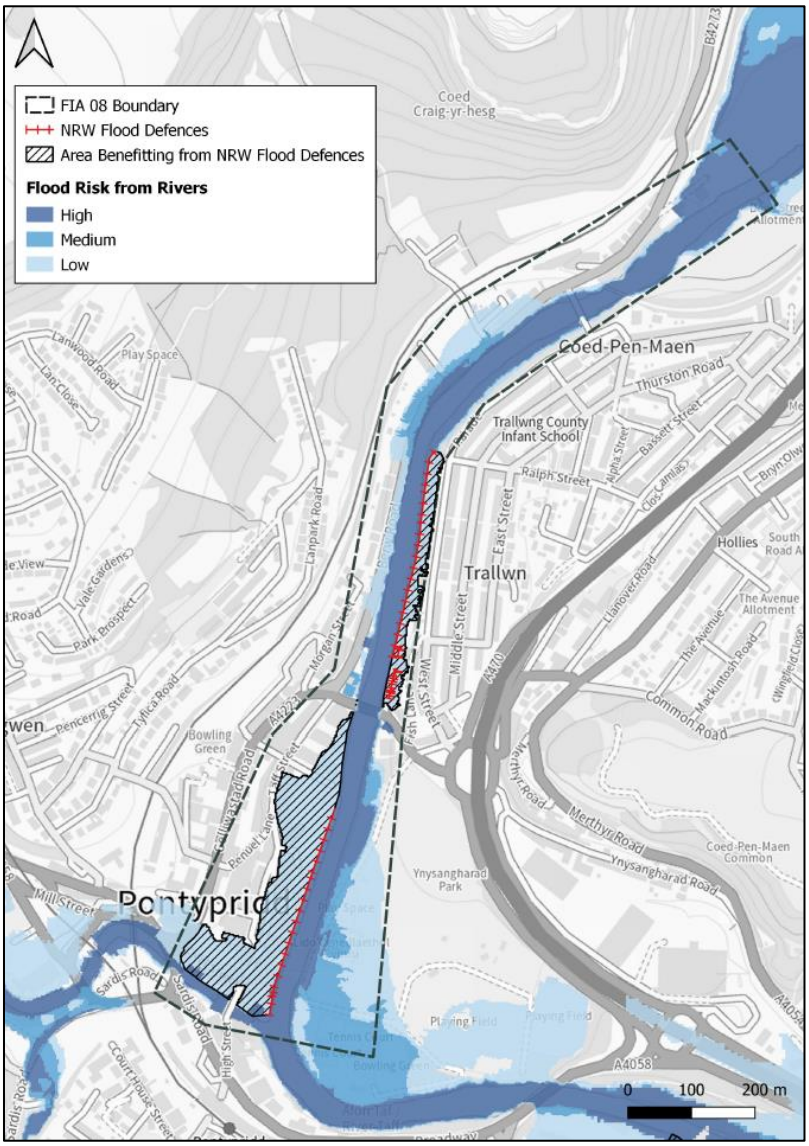

Figure 23: NRW map for Main River Flood Defences and areas benefitting at FIA 08. Natural Resources Wales.

NRW's flood defence sub-types along Taff Street and Sion Street have been enlarged in Figure 24. The flood defence type along Taff Street consists of an embankment and flood defence wall to the rear of commercial properties and a flood gate at the entrance to Ynysangharad Park bridge. The flood defence type at Sion Street consists of a flood defence wall adjacent to the highway and a combination of flood gates and flood defence walls outside the fronts of several residential properties.

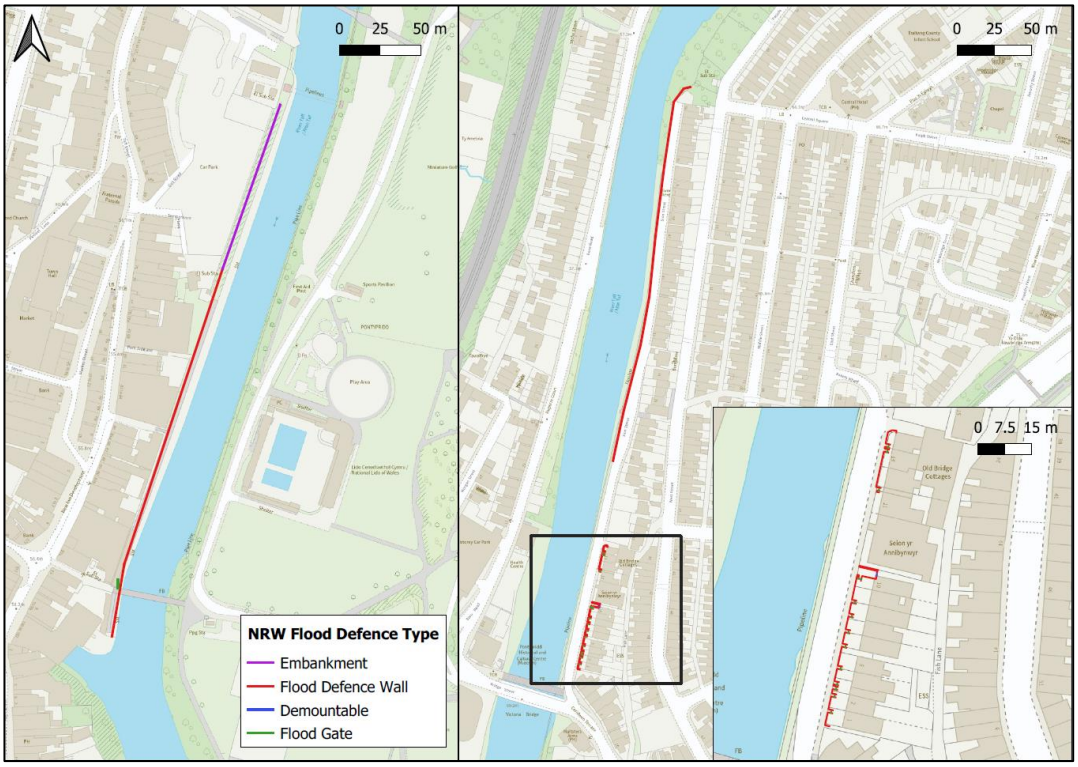

Figure 24: Map showing NRW's Main River Flood Defence Sub-Types at Taff Street and Sion Street. Natural Resources Wales.

The current indicative design standard of protection for flood defences on a main river is 1 in 100 annual probability (Q100) flood event plus, for new schemes, an allowance for climate change. This is stated within the Welsh Government's National Strategy for Flood and Coastal Erosion Risk Management which encourages main river flood alleviation schemes to provide a SOP up to Q100[9].

[9] National Strategy for Flood and Coastal Erosion Risk Management in Wales, Welsh Government 2020

According to NRW's FRAW maps, the flood defence infrastructure shown in Figures 23 and 24 provide a standard of protection (SOP) up to a 1 in 100 annual probability (Q100) flood event to several properties within the investigation area (demarcated by the black hatched area in Figure 23). The existing flood defence infrastructure at FIA 08 is therefore shown to be in accordance with current indicative standards. The areas noted as defended by flood defence infrastructure include properties at Sion Street, Taff Street and Mill Street.

Based on the available evidence collated from residents, Council officers and NRW, the formal main river flood defences at Taff Street and Sion Street did not overtop during Storm Bert. The River Taf exceeded its channel capacity, resulting in the overtopping of the highway wall at the southern end of Sion Street. This section of wall is not identified as a formal flood defence by NRW and should be referred to as a Non-Flood Defence (NFD) Structure. The formal flood gates (maintained and operated by NRW) at the entrances to residential properties along the southern end of Sion Street were not reported to have overtopped however, 10 properties benefiting from flood gates suffered internal flooding primarily as a result of water emerging from the ground and through external garden walls. This water was reported as being dirty and brown in colour which is not indicative of a groundwater source

The emergence of water from the ground and through the foundations of the impacted properties at Sion Street is considered to have been caused as a result of hydraulic pressure being exerted by the high river levels and overtopping of the River Taf onto the street. River-groundwater connectivity has been discussed in further detail in Section 3.7.

There are no formal flood defences under the operation and maintenance of NRW on the western river bank at Berw Road, nor are there defences for the Rhondda River at Mill Street. Any pre-existing highway walls are considered Non-Flood Defence (NFD) Structures.

3.4. HIGHWAY DRAINAGE CONDITIONS

During Storm Bert, Sion Street and Berw Road were observed as flooding as a result of the River Taf exceeding its channel capacity and flowing overland. The resultant fluvial flows deposited mud, silt and debris across the impacted area. These sediments are considered to have entered the highway drainage system, leading to blockages and a reduction in the hydraulic capacity of the surface water network.

Highway drainage is not designed to manage overland flows from private areas, parks or open space, nor is it designed to accommodate fluvial flows that may arise during storm events. In this instance, the capacity of the highway drainage at Berw Road and Sion Street was exceeded as a result of main river flows entering the network. The maintenance condition of the highway drainage infrastructure in these areas are not considered to have significantly impacted the flooding experienced during Storm Bert.

As discussed in Section 2.2, a highway surface water slot drain was observed as surcharging at Mill Street during Storm Bert, contributing to the sewer flooding which impacted 17 commercial properties. This was identified following a review of CCTV footage shared by a local business owner (Figure 25).

Figure 25: Image (left) showing Mill Street slot drain following the subsidence of heavy rainfall at 07:48 and image (right) at 08:19 showing surcharging over 30 minutes later.

In review of the footage shown in Figure 25, the slot drain was depicted as operating throughout the main rainfall event until approximately 07:48. At around 08:19 the slot drain began to surcharge with silty and brown coloured water which is not typical of urban surface water runoff.

Based on statements provided by business owners and a review of available rainfall data in the area, it is considered that the slot drain at Mill Street was operating during the peak of the storm event, i.e., when rainfall was at its most intense. The slot drain began to surcharge approximately 30 minutes after the rainfall subsided.

Inspection reports held by the Council's Highway and Streetcare Depot confirm that the sections of surface water network at Mill Street which fall under the responsibility of the Council to maintain, was cleansed on two occasions prior to Storm Bert (in May and June 2024). The results of which found no defects in the system and only minimal levels of silt which were subsequently cleansed.

To determine the condition of the highway drainage network at Mill Street following Storm Bert, a CCTV survey was undertaken in December 2024. The survey found no obstructions or defects within the highway slot drain or carrier line. The network was assessed as free-flowing and in acceptable condition, inferring that the drainage network became hydraulically overwhelmed during the storm event. The maintenance condition of the highway surface water drainage system at Mill Street is not considered to have significantly impacted the flooding experienced.

The results of the survey did however confirm that the surface water drainage network at Mill Street discharges into a private surface water sewer that outfalls into the River Rhondda beneath a commercial property. This is highlighted in Figure 26 which depicts the surface water drainage arrangements at Mill Street and the location of the slot drain which surcharged during Storm Bert. The section of surface water network,

including the outfall, which conveys beneath the commercial property falls under private ownership.

The outfall of the surface water system is not fitted with a non-return flap valve. The absence of such a valve can allow the river to backflow into the drainage system during high water event.

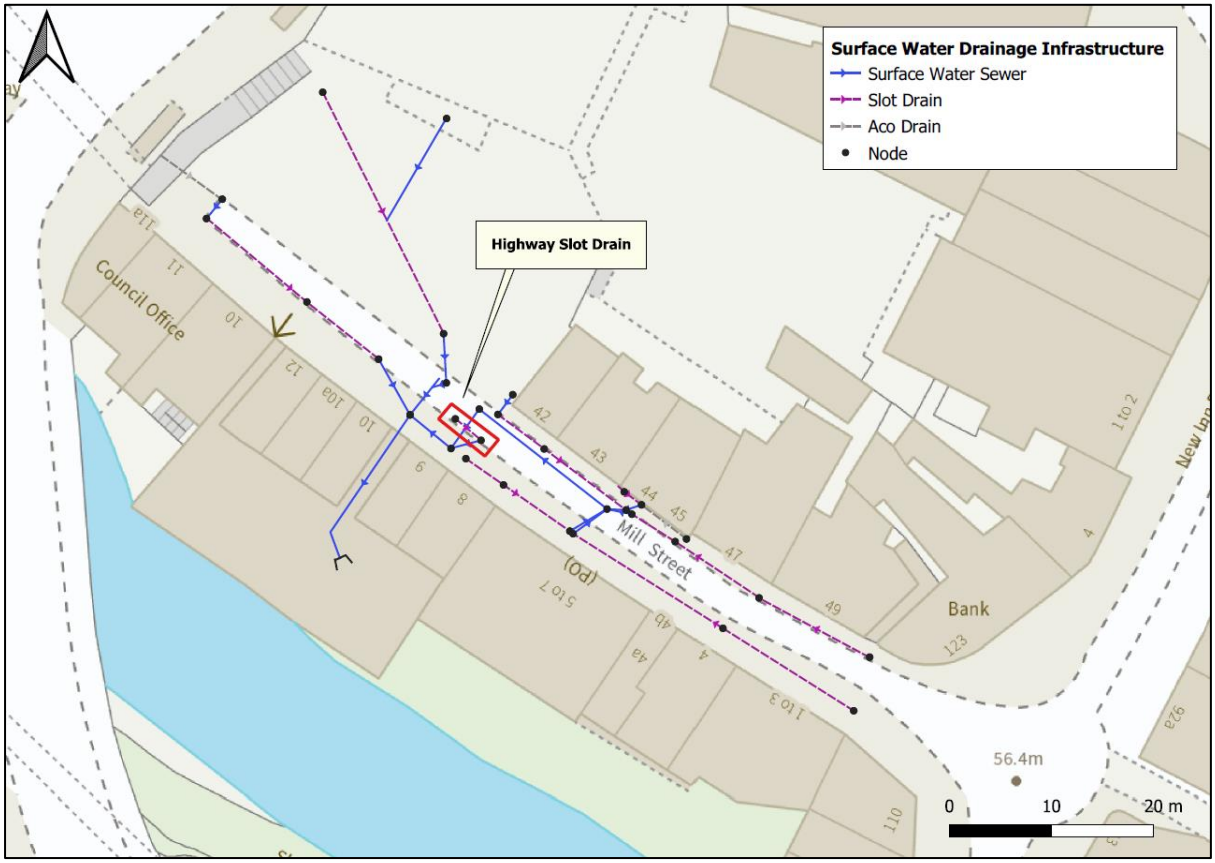

Figure 26: Plan showing the surface water drainage infrastructure in and around Mill Street, along with the location of the slot drain which surcharged during Storm Bert.

During the storm event, the Rhondda River rose to a peak level 3.619 metres at 08:15 on 24 November 2024 (captured at NRW's Trehafod gauge). Based on GPS-based topographic surveying undertaken by Council appointed contractors, the peak river level of the Rhondda River rose above the cover level of the 'Highway Slot Drain' at

Mill Street. This is supported by evidence from business owners at Mill Street showing river water emerging from their basements into the ground floor.

It is considered based on the available evidence that the elevated river pressure in the Rhondda River forced water through the outfall, into the surface water sewer and into the slot drain network, which is located within the lowest point of Mill Street, causing it to surcharge and flood. This is supported by the discolouration of the water surcharging from the slot drain indicative of main river water, as well as the timing of the surcharging of the slot drain (at approximately 08:19 as shown in Figure 25) aligning with the peak river level of the Rhondda River recorded at NRW's Trehafod gauge during the storm event (approximately 08:15 on 24 November 2024).

3.5. DCWW Apparatus

Based on the available evidence, several assets associated to the combined sewer network have been identified as the source of flooding to properties across FIA 08 during Storm Bert.

At Mill Street, 3 DCWW owned and operated manholes which are connected to the combined sewer network were observed as surcharging and causing flooding to properties during the storm event. The DCWW sewer infrastructure within the Mill Street area is depicted within Figure 27, along with the assets known to have surcharged and caused flooding during Storm Bert.

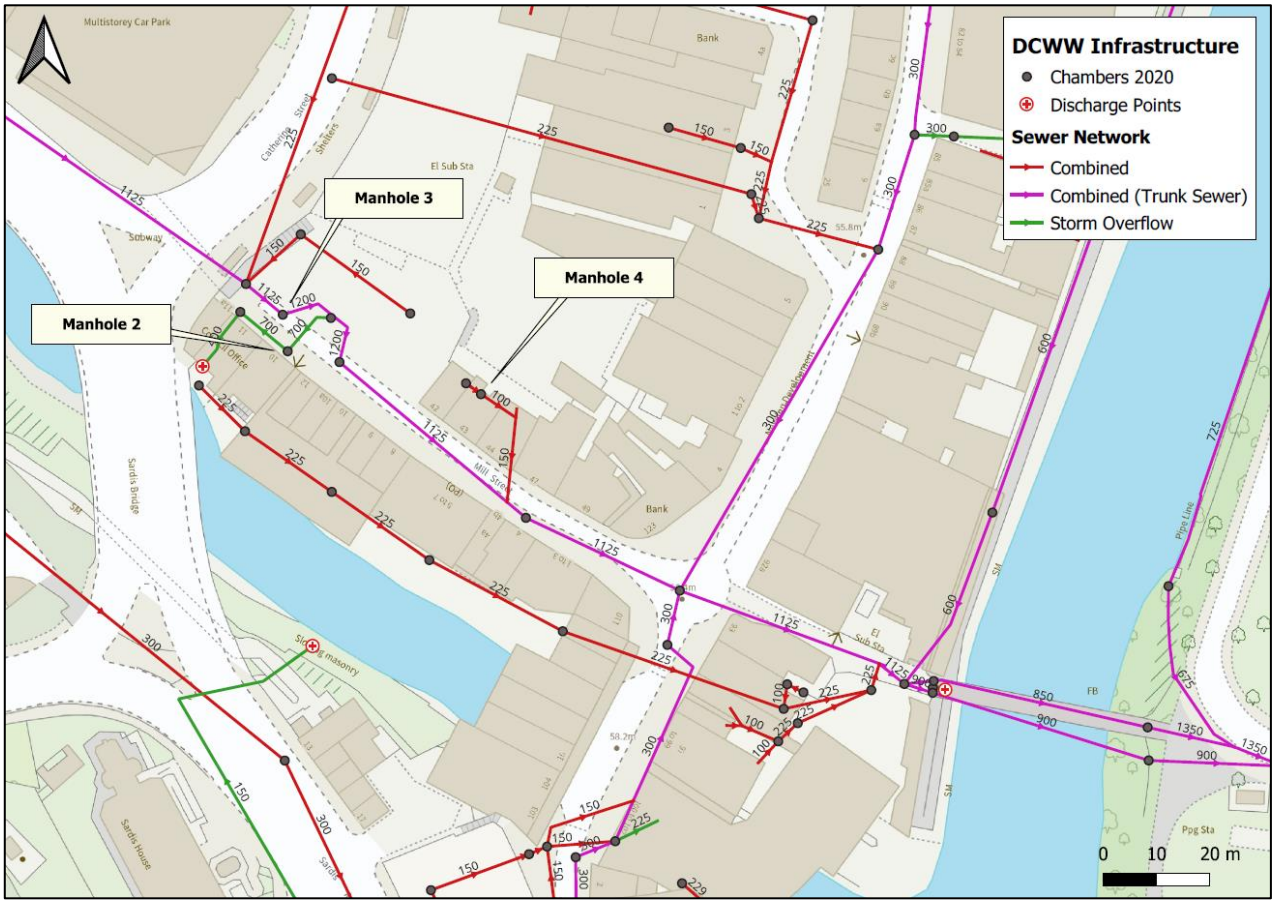

Figure 27: Map of DCWW sewer infrastructure in and around Mill Street

As depicted in Figure 27, there is a 1200-1125mm dia. Trunk Sewer running through Mill Street highway. A Trunk Sewer is a large diameter pipe that receives wastewater from smaller diameter sewer pipes and conveys this wastewater either to an intercepting sewer or treatment plant. The Trunk Sewer at Mill Street receives wastewater from several smaller diameter sewers and conveys wastewater towards Ynysangharad Park.

There is also a 700-450mm dia. Storm Overflow network which conveys from the Trunk Sewer to a Combined Sewer Overflow (CSO) which discharges into the Rhondda River. Storm Overflows are an outlet from the public sewer that is designed to allow excess rainwater and sewage to escape when the sewerage system is at risk of being overwhelmed, such as during heavy rainfall.

On review of the asset information, ‘Manhole 2’ is situated within a 700mm dia. Storm Overflow network which conveys combined sewer overflows from the Trunk Sewer, beneath commercial properties, before discharging into the River Rhondda. The discharge point is fitted with a non-return flap valve on the outfall structure, visible from the A4058 Sardis Bridge and depicted within Figure 28, which was operating according to DCWW. The high levels in the River Rhondda are not considered to have entered the Storm Overflow network..

Figure 28: Image of the outfall structure associated to the DCWW Storm Overflow outfall.

‘Manhole 3’ is situated within the 1125mm diameter Trunk Sewer. It is an interchange manhole increasing from an incoming 1125mm dia. pipe into an outgoing 1200mm dia. pipe. The sewer retains the increased size as the sewer conveys through the Storm Overflow connection manhole, following which the sewer reduces back to a 1125mm dia. pipe before continuing across Mill Street towards Ynysangharad Park.

‘Manhole 4’ is located within the premises of a commercial property at Mill Street and is connected to a 150mm dia. combined sewer line which discharges into the 1125mm dia. Trunk Sewer. This manhole is depicted within Figure 29 and contributed to the flooding of a singular commercial premise during the storm event.

Figure 29: Image of 'Manhole 4' which surcharged during Storm Dennis and contributed to the flooding of 1 commercial property at Mill Street.

DCWW were contacted by the Council in respect of the operation and condition of the various combined sewer assets within Mill Street. Their investigations following Storm Bert did not identify any blockages or structural issues within the combined sewer network.

Based on the available evidence, and information provided by DCWW, it is considered that the combined sewer network surcharged during Storm Bert after becoming hydraulically overloaded as a result of intense rainfall, resulting in the surcharging of ‘Manhole 2’, ‘3’ (see Figure 10) and ‘4’, which contributed to the internal flooding of 17 commercial premises at Mill Street.

The combined sewer network elsewhere in FIA 08 also became hydraulically overwhelmed during the storm event as a result of intense rainfall. This resulted in the surcharging of ‘Manhole 6’ located to the rear of commercial properties at Taff Street, causing internal flooding to 2 commercial premises from the rear. The location of ‘Manhole 6’ is shown in Figure 30. The asset is connected to the Trunk Sewer which conveys sewer water from Taff Street towards Ynysangharad Park.

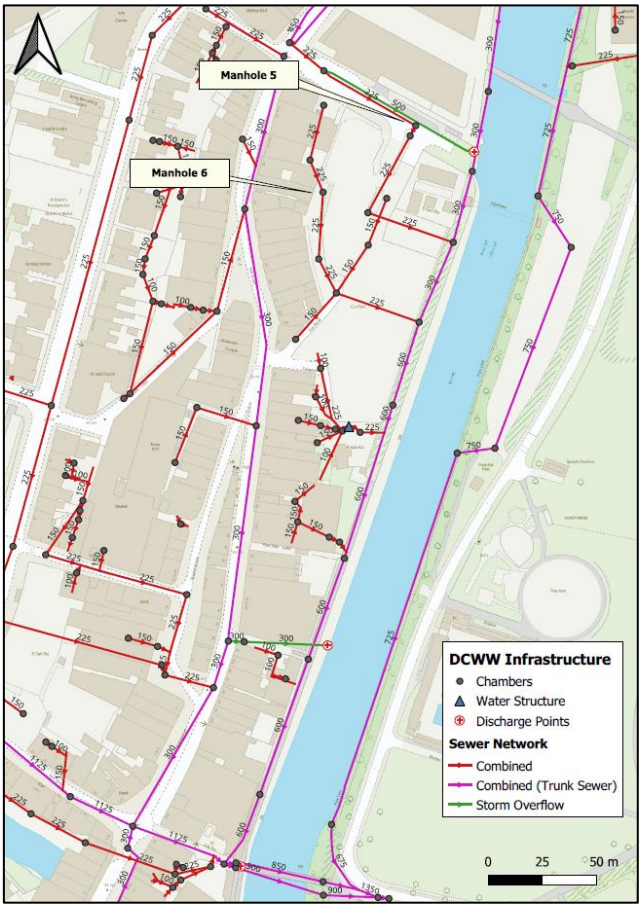

Figure 30: Map of DCWW sewer infrastructure in and around Taff Street.

‘Manhole 1’ at the northern end of Sion Street (shown in Figure 5) surcharged during the storm event but did not result in internal flooding to homes. According to DCWW, the high river levels in the River Taf has been identified as the cause of flooding to ‘Manhole 1’.

In addition to this, several reports of drainage infrastructure surcharging within the boundaries of residential homes at Berw Road and commercial premises along Taff Street were received during the storm event. Reports of dirty water surcharging out of toilets and shower drains suggest the flood water was associated to the combined sewer network which as previously suggested, became over capacitated during Storm Bert.

DCWW have reviewed their telemetry for their network within FIA 08 which they identified as showing levels in the network were high but operating during the storm. No damages or blockages to DCWW’s infrastructure were identified during and post event. Whilst DCWW have concluded that their assets were operating during Storm Bert, the majority of drainage infrastructure within the investigation area is comprised of combined sewer networks which are considered to have become overwhelmed during the storm event as a result of intense rainfall and high river levels influencing the efficiency of the drainage network to discharge effectively.

3.6. SURFACE WATER

Whilst surface water is not considered to have been the primary cause of flooding across parts of FIA 08, surface water is considered to have contributed to and exacerbated the main river and sewer flooding observed across the investigation area.

On review of NRW's national surface water and ordinary ("small) watercourse flood map (Figure 31), the extent of flooding from these sources is minimal, with only small, localised areas of high to low flood risk observed along parts of Taff Street, Mill Street, northern end of Berw Road and Ynysangharad Park.

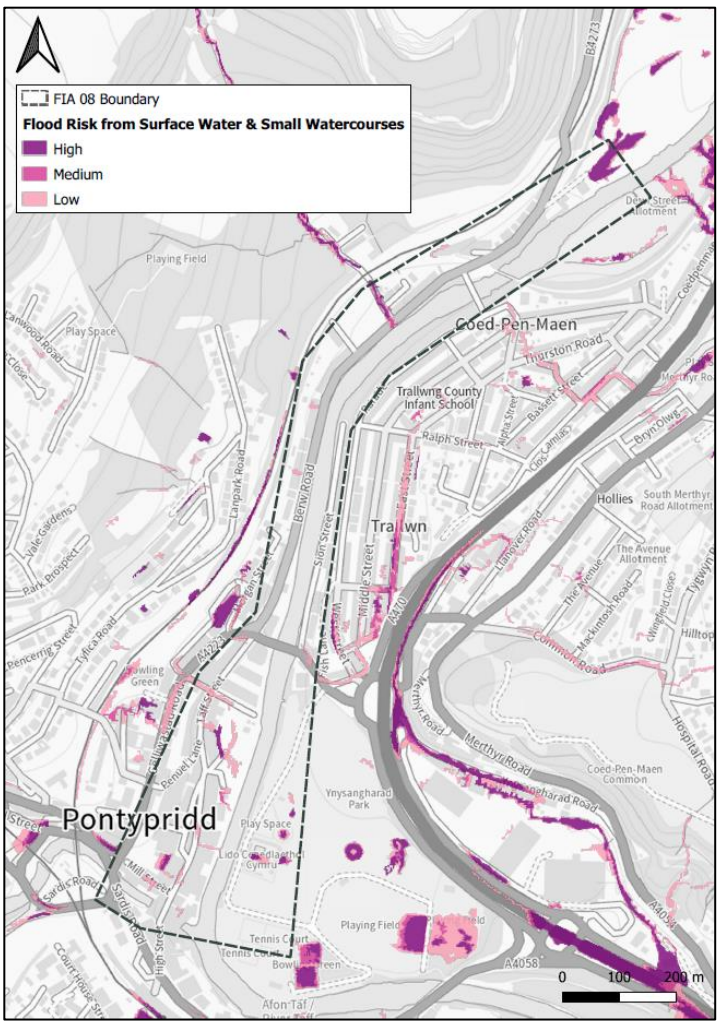

Figure 31: NRW's FRAW map for Surface Water and Ordinary Watercourse flood risk at FIA 08. Natural Resources Wales data.

As discussed in Section 2.2, a privately-owned surface water drain located to the rear of a commercial property at Taff Street (location depicted in Figure 15) was identified as surcharging and contributing to the internal flooding of 6 commercial properties during the event. The drain (shown in Figure 17) has no incoming connections and outfalls directly to the River Taf. Based on an inspection of the area, a non-return flap valve is present at the outfall.

Although a non-return flap valve is installed at the outfall to prevent backflow, available evidence, inclusive of business-owner accounts, suggest that the elevated levels of the River Taf during the storm event conveyed back up through the outfall and flooded the surface water drain. This is supported by Figure 32 which shows a discoloration between the brown and muddy water near the drain, indicative of river flows, and the clear water which is indicative of surface water flows conveying from Taff Street towards the commercial property which is set at a lower level than the main high street.

The surcharging of the surface water drain also resulted in river water accumulating within the rear lane which runs between the NRW flood defence wall and commercial premises along Taff Street (shown in Figure 18). The rear lane also receives roof and yard surface water drainage from the commercial properties, meaning surface water also contributed to the accumulation of water in this location.

A further 5 commercial properties situated adjacent to the rear lane reported water seeping through the structural foundations of the buildings and into the basements. A review of available data identifies no obvious flow paths into the basements of these properties. The primary flow path has been attributed to the high river levels of the Taf and the accumulation of standing water in the rear lane exerting hydraulic pressure, causing water to infiltrate through the ground and finding its way into the basements of properties. It is unknown whether the commercial buildings along Taff Street have appropriate waterproofing systems to prevent water ingress to the basements.

Figure 32: Image of flooding to a commercial property at Taff Street during Storm Bert (captured by an RCT FRM officer on 24 November 2024).

Although a non-return flap valve was present on the outfall, there remains a residual risk of river water entering the drainage system during high water events. This can occur if the valve is damaged, obstructed by debris, or not properly maintained, preventing it from sealing effectively.

Surface water conveyance along highway networks and pedestrian footways was observed elsewhere within the investigation area during the storm event. This has been attributed to intense and persistent rainfall resulting in the accumulation of runoff towards localised low points.

3.7. GROUNDWATER FLOODING

Residents at Sion Street and business owners at Taff Street referenced water entering the basements and ground floor of their properties during the storm event, indicating a potential groundwater source contributed to the flooding of 9 residential and 7 non-residential properties across both streets.

Groundwater flooding occurs when water levels in rocks, underground soil or dormant springs (referred to as the water table) rises to meet the ground surface. This tends to occur after extended periods of sustained rainfall and is most common in areas with porous geological formations, such as chalk or sand. Unlike surface water or river flooding, groundwater flooding is slower to develop and can persist for weeks or even months following heavy or prolonged rainfall[10].

Based on anecdotal evidence presented in this report, the onset of water entering the impacted properties at Sion Street was rapid and correlated with the overtopping of the River Taf onto the highway during the storm event. The rapid onset of water in line with the peak of the storm event, in addition to the flood water reportedly being brown in colour with silt present, is not indicative of originating from a groundwater source.

An environmental report was conducted for the investigation area following Storm Bert to determine the risk of groundwater flooding. Upon a review of available geological information, FIA 08 is underlain by superficial deposits consisting of Alluvium and Glaciofluvial Deposits, overlying sedimentary bedrock formation known as the Brithdir Member. Superficial deposits associated with fluvial deposition, such as river gravels and alluvial clays and sands, are found at the base of the main river valleys. These types of deposits are highly permeable meaning that the likelihood of groundwater flooding is increased, particularly in low-lying areas or valleys where water can accumulate.

[10] What is groundwater flooding? – Creating a better place, Environment Agency 2019

In contrast, the Brithdir Member bedrock, composed of sedimentary rocks, including mudstone, sandstone and siltstone, has a lower permeability. It is however classified as a Secondary Aquifer, meaning groundwater flow is likely to be influenced by fractures in the bedrock which still allow groundwater movement, influencing local groundwater flood risk.

Whilst the environmental report identifies FIA 08 as having a high groundwater vulnerability, it is an area of limited potential for groundwater flooding to occur (British Geological Survey Groundwater Flooding Susceptibility (GFS) Data). This can be attributed to the surrounding terrain of FIA 08 being steep, preventing prolonged saturation, in addition to the geology of the underlying area favouring the movement of water rather than long-term storage.

High river levels can increase the risk of groundwater flooding due to the interaction between surface water and subsurface water systems. When river levels rise, the hydraulic pressure exerted by the river can cause groundwater levels to rise as well, particularly in areas with permeable superficial deposits such as Alluvium and Glaciofluvial Deposits. This process is known as river-groundwater connectivity. The infiltration of river water into the surrounding soil can also saturate the ground, reducing its capacity to absorb further rainfall and increasing the likelihood of groundwater flooding[11].

The exact flow path of groundwater during Storm Bert is unknown, however the conveyance is attributed to vertical seepage from the River Taf through the sub-surface soil and into adjacent structures. The high river levels and the overtopping of the River Taf at Sion Street are considered to have exerted significant hydraulic pressure, driving water through near-surface deposits and leading to seepage into structures, underground spaces and emerging from the ground. This mechanism of

[11] How can floods affect groundwater levels? | GRAF

flooding has been determined as a contributing cause to the flooding of properties along Sion Street.

At Taff Street, the seeping of water through the foundations of some commercial properties has been attributed to the accumulation of river and surface water within the rear lane behind properties at Taff Street and adjacent to NRW's flood defence wall infiltrating through the ground and finding its way through cracks in the basement walls.

3.8. SUMMARY OF POSSIBLE CAUSES

The above sections have identified and described the possible causes of flooding within investigation area FIA 08 during Storm Bert. A summary of the identified sources and possible causes of flooding (issue) have been outlined below in Table 6.

Table 7: Summary of the source(s) and possible cause(s) of flooding in FIA 08 during Storm Bert.

Ref Nr	Asset (Source)	Issue	Asset Owner	Type of Flooding
1	River Taf	High river levels within the River Taf resulted in the channel exceeding its capacity, causing the main river to overtop a NFD highway wall at Sion Street on the eastern river bank, and causing out of channel flows on the western river bank at Berw Road.	RCTCBC Highway Authority	Main River
2	River Taf	High river levels within the River Taf resulted in the channel exceeding its capacity, causing out of channel flows on the western river bank which conveyed over the floodplain and into 8 commercial units at the Old Coach Works, Berw Road.	Private Landowner	Main River
3	River Taf	High river levels within the River Taf resulted in the channel exceeding its capacity, causing out of channel flows onto the eastern river bank at Ynysangharad Park, resulting in flooding to the grounds and the National Lido.	RCTCBC	Main River
4	River Rhondda	High river levels within the River Rhondda resulted in the main river entering the basements and ground floor of 3	Private Landowner(s)	Main River

Ref Nr	Asset (Source)	Issue	Asset Owner	Type of Flooding
		commercial properties at Mill Street.		
5	Manhole 1 (Sion Street)	A manhole associated to the combined sewer network was identified to have surcharged during the storm event, resulting in flooding along the highway at Sion Street.	DCWW	Sewer
6	Manhole 2 (Mill Street)	A manhole associated to the storm overflow sewer network was identified as surcharging during the storm event, causing water to travel along Mill Street, accumulate at the low point and entering several commercial properties.	DCWW	Sewer
7	Manhole 3 (Mill Street)	A manhole associated to the combined sewer network was identified as surcharging during the storm event, causing water to travel along Mill Street, accumulating at the low point and entering several commercial properties.	DCWW	Sewer
8	Manhole 4 (Mill Street)	A manhole associated to the combined sewer network was identified as surcharging within the boundary of a commercial property at Mill Street during the storm event, contributing to the flooding of 1 premise.	DCWW	Sewer
9	Manhole 5 (Gas Road)	A manhole associated to a disused ordinary watercourse culvert network at Gas Road was identified as surcharging during the storm event, causing water to accumulate within Gas Road Car Park.	RCTCBC	Ordinary Watercourse & Main River

Ref Nr	Asset (Source)	Issue	Asset Owner	Type of Flooding
10	Manhole 6 (Taff Street)	A manhole associated to the combined sewer network was identified as surcharging within the lane behind properties at Taff Street during the storm event. This resulted in flood water entering the basements of 2 commercial properties from the rear.	DCWW	Sewer
11	Highway Surface Water Slot Drain (Mill Street)	A highway surface water slot drain located within the low point of Mill Street was identified as surcharging dirty, brown water during the storm event. This water is considered to have been caused by backflow of main river water due to elevated river levels.	RCTCBC Highway Authority	Surface Water & Main River
12	Surface Water Drain (Taff Street)	A privately owned surface water drain located to the rear of commercial properties at Taff Street surcharged during the storm event. The drainage grid outfalls directly to the River Taf and is considered to have been influenced by the high river levels during the storm event. Flood water entered the front and side of a commercial premise and accumulated within the rear lane behind commercial properties.	Private Landowner	Surface Water & Main River
13	River Taf	Residents at Sion Street reported water emerging through the ground floor and external front garden walls of their properties during the storm event. The evidence suggests that the high river levels and overtopping of the River Taf onto	NRW & Private Landowner(s)	Main River

Ref Nr	Asset (Source)	Issue	Asset Owner	Type of Flooding
		the highway, exerted significant hydraulic pressure and caused water to infiltrate through the sub-surface and into several properties.		
14	Groundwater	Business owners reported water entering the basements of their premises during the storm event. The evidence suggests that the accumulation of surface water within the rear lane behind properties at Taff Street caused water to infiltrate through the sub-surface and into the basements of 5 commercial properties.	Private Landowner(s)	Surface Water, Groundwater & Main River
15	Combined sewer network at Berw Road and Taff Street	Some residents at Berw Road reported wastewater entering their properties via shower and bath drains surcharging during the storm event. Business owners at Taff Street also reported surcharging drainage within their premises.	DCWW & Private Landowner(s)	Sewer
16	Private surface water drainage network at Sion Street and Berw Road	Residents at Sion Street and Berw Road reported surface water ingress to the rear of their properties, contributing to the flooding of some properties. It is considered that intense rainfall overwhelmed private surface water drainage infrastructure.	Private Landowner(s)	Surface Water
17	Surface water drainage network across FIA 08	Intense rainfall across RCT combined with the overtopping of the River Taf overwhelmed highway drainage infrastructure, resulting in the accumulation of surface water on several streets throughout the investigation area.	RCTCBC Highway Authority	Surface Water

4. Risk Management Authority Functions

4.1. Risk Management Authorities and their Functions

The term 'Risk Management Authority' refers to the organisation(s) that have legislative powers concerning flood risk management. Risk Management Authorities (RMA) across Wales include NRW, the 22 Local Authorities as Lead Local Flood Authority (LLFA) and highway authority, water companies, and the Welsh Government as highway authority for trunk roads. Each RMA is required to fulfil a number of statutory duties, as defined under the FWMA. In addition to these statutory duties, the Act sets out a range of permissive powers for RMAs, enabling them to undertake defined activities if they so wish.

RCTCBC work in partnership with those organisations to investigate and manage flood risk. Whilst RCTCBC as the LLFA has a duty to investigate flood incidents in its area, it may be the responsibility of another RMA, or land/property owner, to take actions to resolve an issue.

Table 7 summarises which RMAs are primarily responsible for managing flood risk dependent on the type of flooding.

Further information pertaining to the roles and responsibilities of each individual RMA to manage flood risk is described in Section 5 of RCTCBC's Local Flood Risk Management Strategy and Action Plan[4].

Table 8: Risk Management Authorities responsible for managing different types of flooding in RCT

Source of Flooding	Lead Local Flood Authority	Natural Resources Wales	Water Company	Highway Authority	South Wales Trunk Road Agency (Trunk Roads & Motorway)
Main River		✓			
Surface Water	✓			✓ (on or coming from the Highway)	✓ (on or coming from the Highway (Trunk Roads & Motorway)
Ordinary Watercourse	✓				
Groundwater	✓				
Sewer Flooding			✓		
Reservoirs		✓			

Risk Management Authorities have direct flood risk management functions under the Flood and Water Management Act 2010, as well as the Land Drainage Act 1991 and the Highways Act 1980. Through analysis of the flooding that impacted FIA 08, the flood risk management functions exercised or proposed to be exercised by relevant RMAs was recorded in pursuant to Section 19 of the Flood and Water Management Act 2010, which states;

“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 the response to the flood."

Through the investigation process, the source(s) and possible causes of flooding in FIA 08 as a result of Storm Bert have been previously identified and summarised within Table 6. The RMAs responsible for managing that type of flooding have been determined in Table 8.

Table 9: Risk Management Authorities identified in response to the source(s) and type of flooding in FIA 08 (as per Table 6)

Ref Nr	Asset (Source)	Asset Owner	Type of Flooding	RMA responsible for managing risk
1	River Taf	RCTCBC Highway Authority	Main River	NRW
2	River Taf	Private Landowner(s)	Main River	NRW
3	River Taf	RCTCBC	Main River	NRW
4	River Rhondda	Private Landowner(s)	Main River	NRW
5	Manhole 1 (Sion Street)	DCWW	Sewer	DCWW
6	Manhole 2 (Mill Street)	DCWW	Sewer	DCWW
7	Manhole 3 (Mill Street)	DCWW	Sewer	DCWW
8	Manhole 4 (Mill Street)	DCWW	Sewer	DCWW
9	Manhole 5 (Gas Road)	RCTCBC	Ordinary Watercourse & Main River	LLFA
10	Manhole 6 (Taff Street)	DCWW	Sewer	DCWW
11	Highway Surface Water Slot Drain (Mill Street)	RCTCBC Highway Authority	Surface Water & Main River	Highway Authority & LLFA
12	Surface Water Drain (Taff Street)	Private Landowner	Surface Water & Main River	LLFA

Ref Nr	Asset (Source)	Asset Owner	Type of Flooding	RMA responsible for managing risk
13	River Taf	NRW / Private Landowner(s)	Main River	NRW
14	Groundwater	Private Landowner(s)	Surface Water, Groundwater & Main River	LLFA
15	Combined sewer network at Berw Road and Taff Street	DCWW & Private Landowner(s)	Sewer	DCWW
16	Surface water drainage network at Sion Street and Berw Road	Private Landowner(s)	Surface Water	LLFA
17	Surface water drainage network across FIA 08	RCTCBC Highway Authority	Surface Water	Highway Authority & LLFA

4.2. LEAD LOCAL FLOOD AUTHORITY

In review of Ref 9, 11, 12, 14, 16 and 17 in Table 8, the LLFA have been identified as the relevant Risk Management Authority in relation to the ordinary watercourse, surface water and groundwater flooding which occurred across FIA 08 during Storm Bert.

The LLFA exercised the following functions in response to the flooding at FIA 08:

- Officers investigated the initial flooding and have produced this report in line with Section 19 of the Flood and Water Management Act 2010.
- Officers contacted residents affected by flooding to offer support and advice to assist in the recovery following the event.
- A public engagement exercise was carried out by the LLFA in order to gain further local insight and anecdotal evidence to support the flood investigation.
- The LLFA has exercised its powers, under Section 13 of the FWMA, to request information and co-operation from the relevant Risk Management Authorities (NRW and DCWW) in relation to their responsibilities as RMAs in response to Storm Bert.
- The LLFA has developed a revised "Flood Response Protocol", designed to pro-actively determine the agreed requisite response and resource levels related to potential storm events.
- The Council's central Control Room, which was established following Storm Dennis, was in operation during Storm Bert to provide a comprehensive and informed response to the residents of RCT as appropriate during storm events, and to accommodate multi departmental / agency meetings where required.
- The Council introduced a Community Flood Recovery Grant (Hardship Payment) programme, with support from the Welsh Government, to provide

financial assistance to residents who were subjected to internal flooding as a result of Storm Bert.

- The Council's Prosperity & Development Directorate, working alongside Pontypridd Town Council, supported affected businesses through the provision of resources for clean-up operations as well as providing deployable flood gates to affected businesses at Mill Street to enhance resilience.
- The LLFA, working alongside the Council's Prosperity & Development Directorate, supported businesses impacted by Storm Bert by establishing a Flood Recovery Grant and Flood Resilience Grant, providing financial assistance during the recovery phase and longer-term measures to enhance resilience against future events.
- Notwithstanding that NRW are the relevant RMA for main river flooding, the LLFA have expanded their interim Property Flood Resistance project offering expandable flood gates to those residential properties who have suffered repeat flooding from the main river during Storm Dennis and Bert.

The LLFA also propose to exercise the following functions in response to the flooding at FIA 08:

- Following a review of Met Office and NRW warning systems and their effectiveness when applied to localised weather events, the Council will establish internal trigger levels for extreme weather to provide a more robust warning and informing arrangement and improve the Council's standby protocol.
- The LLFA will cooperate and collaborate with NRW to carry out a detailed study of the investigation area in accordance with NRW's Strategic Flood Risk Management Plan for the Taf Catchment.
- The LLFA will engage with landowners and property owners to provide advice and guidance to help make them aware of their personal flood risk and the options available to improve flood resilience.

- RCTCBC will cooperate and collaborate with DCWW's program of inflow reduction projects.
- In review of Ref 9, the Council proposes to install a non-return valve in the culverted watercourse network, to reduce the risk of river water entering the network and surcharging upstream infrastructure.

4.3. NATURAL RESOURCES WALES

In review of Ref 1-4, and 13 in Table 8, NRW have been identified as the relevant Risk Management Authority in relation to the main river flooding from the Rivers Taf and Rhondda during Storm Bert.

NRW have exercised the following functions in response to the flooding at FIA 08:

- NRW have carried out post event data collection including an assessment of the properties impacted by main river flooding and a survey of wrack marks, i.e., the marked high-water level.
- Following Storm Bert, NRW undertook post event T98 inspections of main river flood defences in the area.
- NRW instructed the post event inspection of flood gates at Sion Street by the flood gate manufacturer.
- NRW have undertaken a review of Operational Responses at Pontypridd and adjusted trigger levels in response to the rate of river level rise seen during Storm Bert.
- Utilising post event data and information, NRW have reviewed the Resultant Thresholds for the River Taf at Pontypridd Flood Warning Area (FWA). This is critical for assessing the performance, timeliness and accuracy of the warning service after a flood.

NRW propose to exercise the following functions in response to the flooding at FIA 08:

- NRW are undertaking an in-house hydraulic modelling project specifically for the Pontypridd area.
- Following the completion of NRW's Pontypridd Flood Modelling Project, NRW propose to undertake an initial economic assessment of the viability of potential flood risk management options.

- NRW will investigate options for the replacement of Flood Gates at Ynysangharad Park.
- NRW has been asked to contribute to a combined RMA investigation at Pontypridd by local businesses.
- In review of Ref 13, “NRW will look into how flood water may be accessing properties, possibly through the ground, on Sion Street”.
- NRW are developing a long-term Strategic Flood Risk Management Plan for the Taf Catchment to manage the negative impacts of flooding on people, property, infrastructure and the environment. The Strategic Plan will identify where we need to act and who is best placed to action the opportunities identified.

4.4. WATER COMPANY

In review of Ref 5-8, 10 and 15 in Table 8, DCWW have been identified as the relevant Risk Management Authority in relation to the sewer flooding identified across FIA 08 during Storm Bert.

DCWW have exercised the following functions in response to the flooding at FIA 08:

- DCWW have reviewed all incidents reported to them and ensured all flood risk has been identified to ensure they are investigating and managing any identified risks.
- DCWW have worked closely with RCTCBC's Flood Risk Management team through various meetings and onsite to determine the causes of flooding and working collaboratively to resolve flood risks.

DCWW propose to exercise the following functions in response to the flooding at FIA 08:

- Considering the most recent evidence following the flooding during Storm Bert, DCWW will be carrying out modelling within the area to better understand what risks they may have both from Storm Bert and future events so they can manage the flood risk accordingly.
- DCWW have recently developed an Inflow Reduction Team with the aim of locating inflows of surface water, land drainage and groundwater in their foul and combined sewer and finding ways to reduce these inflows. The first batch of surveys were carried out in Winter 2024.
- DCWW will "install a Duckbill Flap valve (on their siphons at Mill Street) which will be more suited to the location as it is more pressure based than the one currently in place and should be more effective".

- DCWW “have been trying to complete a sonar survey of our network to further understand its operations and any actions required but have been having access issues to the key manholes to complete this work. We will continue to try and get this complete as quick as possible and will update RCTBC once this is completed”.
- In review of Ref 8, DCWW will be investigating all manholes in the basements of 3 properties at Mill Street to understand any potential risks from their main Trunk Sewer and will look at options to protect these properties
- In review of Ref 15, DCWW “will attend and check our sewers are clear and operating and would encourage any flooding from the sewer system to be reported to us”.
- DCWW will continue to take a risk-based approach to the prioritisation of investigations and will seek to work closely with RCTCBC to identify any opportunities for collaboration in the delivery of inflow reduction projects.

4.5. HIGHWAY AUTHORITY

In review of Ref 11 and 17 in Table 8, the Highway Authority has been identified as the relevant Risk Management Authority in relation to the surface water flooding that occurred along the highway across FIA 08.

RCTCBC as the Highway Authority have exercised the following functions in response to the flooding within FIA 08:

- The Highway Authority assisted with the emergency response during the event by supplying equipment and sandbags, some to individual properties and using sandbags to redirect flood water away from properties.
- The Highway Authority exercised their functions under Section 100 of the Highways Act 1980, to arrange for all gullies and open drains in the highway to be inspected and cleansed following the influx of fluvial flood water to ensure the safety of the highway post event.
- Since Storm Bert, the Highway Authority have sourced and deployed an additional Gulley cleansing vehicle for 6 months annually to increase gulley cleansing activities ahead of winter to improve the resilience of their highway drainage infrastructure to the impacts of heavy rainfall.
- The Highway Authority has jetted, cleansed and mapped an estimated 506 metres of surface water drainage network length within FIA 08 following Storm Bert to ascertain both the operational condition and structural integrity along sections of the network.

RCTCBC as the Highway Authority propose to undertake the following functions in relation to the storm event at FIA 08:

- The Highway Authority's Pluvial Drainage Team, which was established following Storm Dennis, are to be reviewed and restructured to create increased

response and resilience including staff, stores, machinery and materials deployment.

- In review of Ref 11, the Council proposes to install a non-return valve in the section of surface water sewer located in the highway, to reduce the risk of river water entering the network and surcharging upstream infrastructure.

USEFUL LINKS/CONTACTS

Blue Pages – property Resilience - http://bluepages.org.uk/

Flood Re – Flooded Property Insurance Scheme - https://www.floodre.co.uk/

Natural Resources Wales – Check Flood Warnings – Natural Resources Wales / Check flood warnings

Natural Resources Wales – Check your flood risk on a map (Flood Risk Assessment Wales Map) - Natural Resources Wales / Check your flood risk on a map (Flood Risk Assessment Wales Map)

Natural Resources Wales – Sign up to receive flood warnings – Natural Resources Wales / Sign up to receive flood warnings

Rhondda Cynon Taf County Borough Council – Flood Risk Management - Flood Risk Management | Rhondda Cynon Taf County Borough Council