Carmarthenshire County Council

Flood Risk Management Plan 2025-2030

A plan for managing flood risk across Carmarthenshire

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Contents

Glossary

Abbreviations

Abbreviation	Meaning
AEP	Annual Exceedance Probability
BAU	Business As Usual
CaRR	Communities at Risk Register
CCC	Carmarthenshire County Council
FRM	Flood Risk Management
FRA	Flood Risk Area
FRMP	Flood Risk Management Plan
GIS	Geographic Information System
LDP	Local Development Plan
LFRMS	Local Flood Risk Management Strategy
LLFA	Lead Local Flood Authority
LNR	Local Nature Reserve
NFM	Natural Flood Management
NNR	National Nature Reserve
NRW	Natural Resources Wales
PLP	Property Level Protection
RBD	River Basin District
SAC	Special Area of Conservation
SAM	Scheduled Ancient Monument
SFCA	Strategic Flood Consequence Assessment
SINC	Site of Interest for Nature Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
WG	Welsh Government

Definitions

Word	Meaning
Annual Exceedance Probability	Annual Exceedance Probability is used to describe how likely it is that a certain event will happen in a given year.
Communities at Risk Register (CaRR)	A database to provide an objective means of identifying risk and prioritising flood risk management activities at a Wales-wide, community level.
Fluvial flood risk	The risk of flooding from main rivers.
Lead Local Flood Authority (LLFA)	County councils and unitary authorities which lead in managing local flood risks.
Main river	Usually a larger river or stream, defined in law as shown on a Main River Map. Natural Resources Wales has responsibility and powers for managing flood risk on these in Wales.
Ordinary watercourse	A watercourse that does not form part of a main river e.g. streams.
Pluvial flood risk	The risk of flooding from surface water and ordinary watercourses.
River Basin District (RBD)	CCC have defined 7 River Basin Districts across the county based on main river catchments. These have been defined in the Local Flood Risk Management Strategy.
River Catchments	CCC have defined 7 key catchments in the county as defined in the Local Flood Risk Management Strategy.
Sustainable Drainage Systems (SuDS)	Systems designed to manage stormwater locally by mimicking natural drainage processes and patterns.

1 Executive Summary

Carmarthenshire County Council has drafted a 2024-2030 Local Flood Risk Management Strategy which sets out the objectives and strategic approach for how flood risk will be managed across the county. This Flood Risk Management Plan (has been developed to implement the Local Flood Risk Management Strategy at a local level by firstly identifying communities at the highest risk of flooding and secondly, identifying suitable interventions to reduce this risks flooding posed within the identified communities.

Carmarthenshire County Council have identified 28 priority communities at high risk of flooding from either fluvial or pluvial sources – in some instances at risk of both fluvial (rivers and streams) and pluvial (surface water) flooding. A relatively equal representation of communities from each of the seven River Basin Districts as defined in the LFRMS have been included in the list of priority communities. The identification of the most at risk communities in each River Basin District allows Carmarthenshire County Council to focus resources in an effective and efficient manner ensuring flood risk across the county is managed where the need is greatest.

2 Introduction

2.1 What is a Flood Risk Management Plan?

As the Lead Local Flood Authority (LLFA), Carmarthenshire County Council (CCC) has produced a Local Flood Risk Management Strategy (LFRMS), which identifies local sources of flood risk (i.e. surface water, groundwater and ordinary watercourses) and sets strategic objectives for managing those local sources of flood risk across the county. The LFRMS' approach and objectives are in line with the Welsh Government's national objectives set out in its National Strategy for the managing flood risk across Wales.

This Flood Risk Management Plan (FRMP) has been developed to implement the strategic objectives of the LFRMS at the community level, through local actions which aim to reduce the risk of flooding to people and communities. Actions to manage flood risk can involve reducing the likelihood of flooding, the impacts when flooding happens, or a combination of both.

2.2 Objectives

The objectives of this FRMP are:

- To identify and prioritise the communities across Carmarthenshire that are most at risk of fluvial or pluvial (ordinary watercourses and surface water) flooding.
- To develop a list of specific actions to manage the flood risk and enhance the resilience levels of each priority community identified.

2.3 Purpose of the FRMP

The purpose of this FRMP is to identify communities that are at greatest risk from fluvial and pluvial flooding across Carmarthenshire. These communities are referred to as "priority communities". The FRMP recommends actions to manage the risk of flooding for each priority community. The proposed actions aim to reduce the likelihood of flooding, reduce the consequences of a flood or a combination of both and to enhance the priority community's resilience to flooding. Some communities are also at risk of flooding from groundwater and where known this has been referenced in this document.

In total, 28 priority communities across the county have been identified with a relatively equal representation from each of the seven River Basin Districts (RBDs) as defined

in the LFRMS. Carmarthenshire has been divided into seven RBDs broadly based on river catchments (see Figure 2-1).

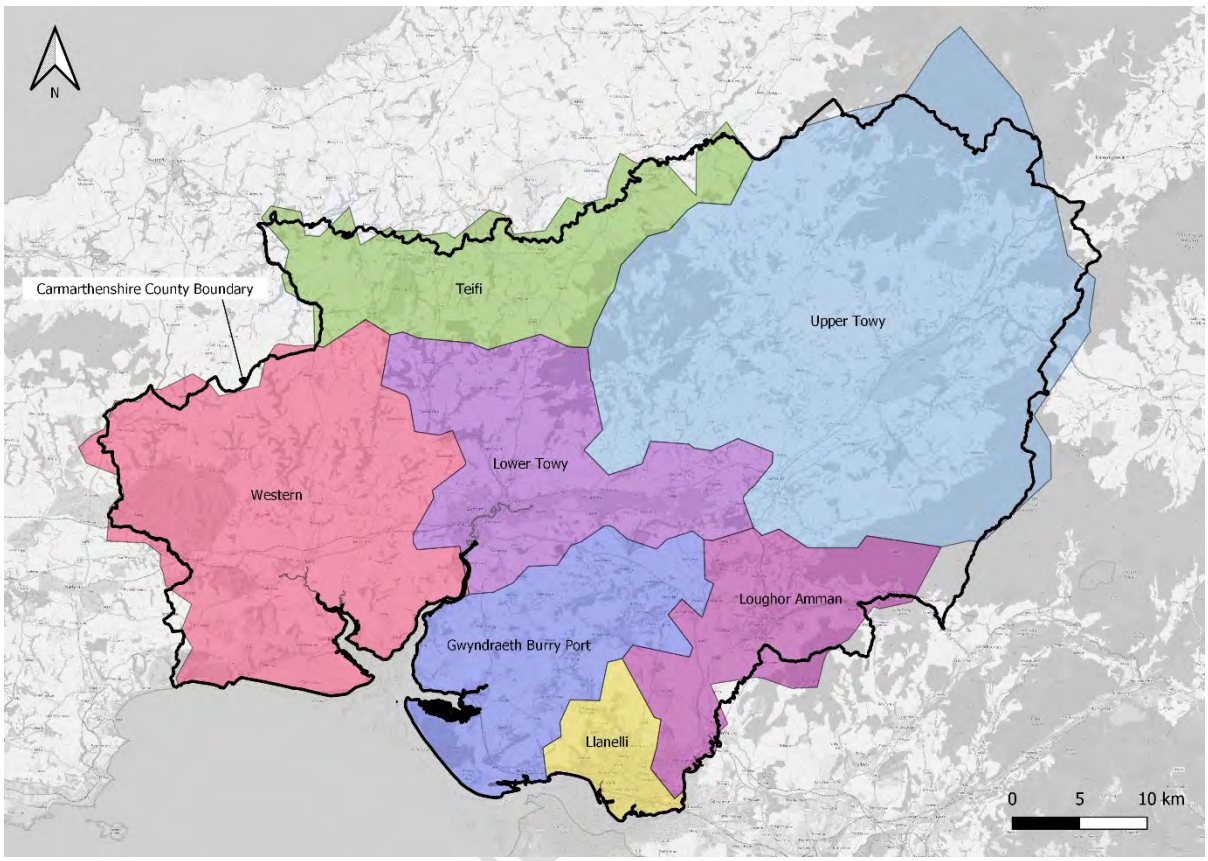

Figure 2-1 The 7 Carmarthenshire River Basin Districts.

This FRMP focuses particularly on events which pose a medium risk of flooding to each identified community, where there is between a 1% Annual Exceedance Probability (AEP) and a 3.3% AEP chance of flooding in any given year.

2.4 FRMP Structure

Section 3 details the methodology used to identify, select and assess the risk of flooding across the communities most at risk of flooding within Carmarthenshire. Section 4 to Section 10 further explores the risk of flooding across the 28 communities identified to be most a risk of fluvial and/or pluvial flooding. More localised information regarding the types of flood risk present, the receptors at risk of flooding and the actions suggested to mitigate the risk of flooding are identified for each community in these sections. Where applicable, a brief update on the Flood Risk Management (FRM) actions identified from the previous FRMP produced in 2019 (referred to as

"FRMP-1") has been provided for each community. These sections also include the identification of Flood Risk Areas (FRAs) within each community which are localised areas determined to be at greater risk.

3 Priority Community Selection

3.1 Data Sources

For the purpose of identifying the communities in Carmarthenshire at greatest risk of fluvial and pluvial flooding, we have used Wales' Communities at Risk Register (CaRR), supplemented with recorded flood incident data, community feedback, and knowledge from Carmarthenshire County Council's teams and other flood Risk Management Authorities as our primary data sets.

3.1.1 Communities at Risk Register

The CaRR, produced by Natural Resources Wales (NRW) in 2013 and updated in 2019, was developed to provide an objective means of identifying risk and prioritising flood risk management activities at a Wales-wide community level.

The dataset allows the distribution of flood risk to be quantified across Wales using a standard methodology across fluvial, pluvial and tidal flood sources to calculate a theoretical 'Danger' score per community. The 'Danger' score, ranging from 'high' to 'low,' allows for comparative risks to be quantified and ranked across individual communities across Carmarthenshire. Data provided within the CaRR can be viewed at a range of spatial scales including at a national level, RBD level, local authority area and community level.

The CaRR consists of Geographic Information System (GIS) files and an associated spreadsheet which provides (amongst other information) the number of properties and key services at risk of fluvial, pluvial and tidal flooding for every community across Wales for a range of flood events at varying magnitudes. The CaRR spreadsheet identifies and ranks the risk of flooding presented within each community across Wales for:

- A natural, 'undefended' scenario, and
- A mitigated scenario (based on the presence of flood defences and/or flood warning systems).

The FRMP utilises data from the CaRR in relation to a 'medium' risk equivalent to between a 1% AEP and a 3.3% AEP and under an 'undefended' scenario.

3.1.2 National Flood Risk Maps

Fluvial and pluvial flood extents obtained from the National Flood Risk Maps (both NRW datasets) were used to further aid the identification of communities at risk. The risk of fluvial and pluvial flooding to communities across Carmarthenshire was explored at a 'medium' risk level, equivalent to between a 1% AEP and a 3.3% AEP event.

It is important to highlight that data utilised from the CaRR dataset predates the modelled fluvial and pluvial extents from the NFRM. While the CaRR was last updated in 2019, modelled fluvial flood extents were updated in 2023, and pluvial flood extents were updated in 2022. There are therefore some instances where properties identified within the CaRR dataset to be at risk of flooding in the 1% AEP do not fall within the modelled fluvial and pluvial flood extents.

3.1.3 River Basin Districts

Due to the demographics of Carmarthenshire, namely that the southern and eastern regions are more densely populated than the rest of the county, the risk of flooding across Carmarthenshire was considered at a River Basin District (RBD) level to ensure that data was analysed in an objective manner geographically and to provide an even distribution of communities at risk. In total, there are seven RBDs defined in Carmarthenshire which are as follows:

- Teifi;
- Upper Towy;
- Lower Towy;
- Western Valleys;
- Amman and Loughor;
- Llanelli, and
- Gwendraeth and Burry Port.

3.1.4 Incident Data

Historical flood incident data, a CCC dataset containing historical flood information reported to CCC between 2018 to 2024, was used to aid the identification of the top 2 priority communities (refer to Appendix A for more information on the selection process). These flood incidents fell into the categories of 'internal' (flood event

occurring within a building) and 'external' (flooding to gardens and to the space of ground / buildings immediately surrounding properties):

- Internal Residential,
- Internal Non-residential,
- External Residential and,
- External Non-residential.

3.1.5 Receptor Data

Receptor data allowed for the evaulation of what specifcally is at risk of flooding across Carmarthenshire's priority communities. Receptor data obtained includes:

- Local Nature Reserves (LNR)[1]
- National Nature Reserves (NNR)[2]
- Ancient Woodlands [3]
- County Parks[4]
- Listed Buildings[5]
- Local Development Plans: Residential, Gypsy and Traveller Sites, Employment, Retail Parks, Town Centres, Strategic Sites, Mixed Use and additional SFCA data.

Alongside Local Development Plans data, receptor data from Data Map Wales was used. Additional receptor data was obtained from the CaRR dataset and are listed below:

[1] Local Nature Reserves, Data Map Wales. Accessed via: https://datamap.gov.wales/layers/inspire-nrw:NRW_LNR. Data Published 24 July 2024

[2] National Nature Reserves, Data Map Wales. Accessed via: https://datamap.gov.wales/layers/inspire-nrw:NRW_NNR. Data Published 28 November 2022

[3] Ancient Woodlands Inventory 2021, Data Map Wales. Accessed via: https://datamap.gov.wales/layers/inspire-nrw:NRW_ANCIENT_WOODLAND_INVENTORY_2021

[4] National Parks, Data Map Wales. Accessed via: https://datamap.gov.wales/layers/inspire-nrw:NRW_NATIONAL_PARK. Data Published 24 July 2024

[5] Listed Buildings. Data Map Wales. Accessed via: https://datamap.gov.wales/layers/inspire-wg:Cadw_ListedBuildings. Data

- Key / Essential Services (number / n)
- Length of Roads (km)
- Length of Railways (km)
- Agricultural Land (m^2)
- Enviromental Count (number / n)

The environmental count dataset considers the number of environmental receptors that are present within a specific area. These receptors are as follows:

- Special Areas of Conservation (SACs)
- Specia Protection Areas (SPAs)
- Ramsar Sites
- Sites of Special Scientific Interest (SSSIs)
- Sites of Interest for Nature Conservation (SINCs)
- Registered Parks and Gardens
- Scheduled Ancient Monuments (SAMs)

3.2 Data Review Outcomes

Following the methodology outlined in Appendix A, the communities assessed to be at the highest risk in each RBD were identified. The number of priority communities identified vary per RBD due to the different level of risk present within each community. The number of communities identified per RBD are presented in Table 3-1 while the 28 priority communities identified are presented in Table 3-2.

Table 3-1 Distribution of priority communities across each RBD.

River Basin District (RBD)	Number of Priority Communities
Gwendraeth Burry Port	4
Llanelli	3
Loughor Amman	6
Lower Towy	2
Teifi	5
Upper Towy	3
Western	5

Table 3-2 Twenty-Eight Priority Communities in Carmarthenshire

River Basin District	CaRR ID	Community Name	Properties at risk (Fluvial 1% AEP event)	Properties at risk (Pluvial 1% AEP event)
Gwendraeth Burry Port	4781	Burry Port	60	100
	4073	Ferryside	41	37
	4436	Gorslas	0	60
	4054	Kidwelly	14	49
Llanelli	4021	Dafen	171	182
	4005	Llanelli	519	380
	4667	Llwynhendy	0	84
Loughor Amman	4016	Ammanford	247	284
	4750	Brynamman	6	92
	4288	Cross Hands	0	70
	4046	Glanamman	24	91
	4019	Llandybie	90	116
	4064	Llangennech	101	67
Lower Towy	4038	Abergwili	5	5
	4017	Carmarthen/Caerfyrddin	23	190
Teifi	4043	Cwmann	13	34
	4084	Drefach	19	18
	4033	Llandysul	36	13
	4018	Llanybydder	7	9
	4066	Newcastle Emlyn	12	52
Upper Towy	4087	Llandeilo	0	15
	4007	Llandovery/Llanmddyfri	231	14
	4044	Llanwrda	40	5
	4058	Laugharne	47	14
	4061	Llanddowror	33	4

River Basin District	CaRR ID	Community Name	Properties at risk (Fluvial 1% AEP event)	Properties at risk (Pluvial 1% AEP event)
Western	4254	Llansteffan	16	26
	4049	St Clears	30	17
	4029	Whitland	145	15

3.3 Actions

Following the identification of priority communities most at risk of fluvial and pluvial flooding, a list of actions was developed to manage the risks of flooding across each priority community.

The actions identified are ranked into short term (1-2 years, 2025 – 2026), medium term (3-5 years, 2027-2029) and long term (>5 years, 2029 onwards) actions. The financial categories of the proposed actions were banded into low costs '£' (£0-10k), medium costs '££' (£10k-100k), medium to high costs '£££' (£100k-£500) and high costs '££££' (£500k plus) with budget forecasts taken into consideration.

The actions listed below link back into the measures in Carmarthenshire's LFRMS (see Section 11 of the LFRMS).

4 Gwendraeth Burry River Basin District

4.1 Burry Port – 4781

4.1.1 Community Area Description

Burry Port (Figure 4-1) is a coastal town situated in the Gwendraeth Burry RBD, between Carmarthen and Llanelli. As of 2021, the total population within the Pembrey and Burry Port Town was approximately 4965 (2021 census) people[6].

The main hydrological features are the two ordinary watercourses, the Nant Dyfatty and the Dwynant Stream. Both originate on high land to the north and fall sharply to the flat coastal plain. The larger watercourse, the Nant Dyfatty, benefits from multiple flood risk management assets and is culverted along its lower reaches under Burry Port town until its discharges into the harbours. The Dwynant stream has some flood risk management assets, runs in private gardens for much of its length and discharges into the canal. 1 in 59 people are at risk of fluvial flooding while 1 in 32 people are at risk of pluvial flooding in Burry Port.

Predominant land use features in Burry Port include residential areas, commercial establishments, industrial sites, and recreational spaces pastoral farmland and woodland. Northern-most regions of Burry Port display rural characteristics, while southern-most areas display urbanised characteristic. Significant infrastructure includes the Pembrey and Burry Port railway station while major roads include the A484 and the B4311.

[6] Burry Port Census Data. Available at: Pembrey and Burry Port Town (Community, United Kingdom) - Population Statistics, Charts, Map and Location [Accessed December 2024]

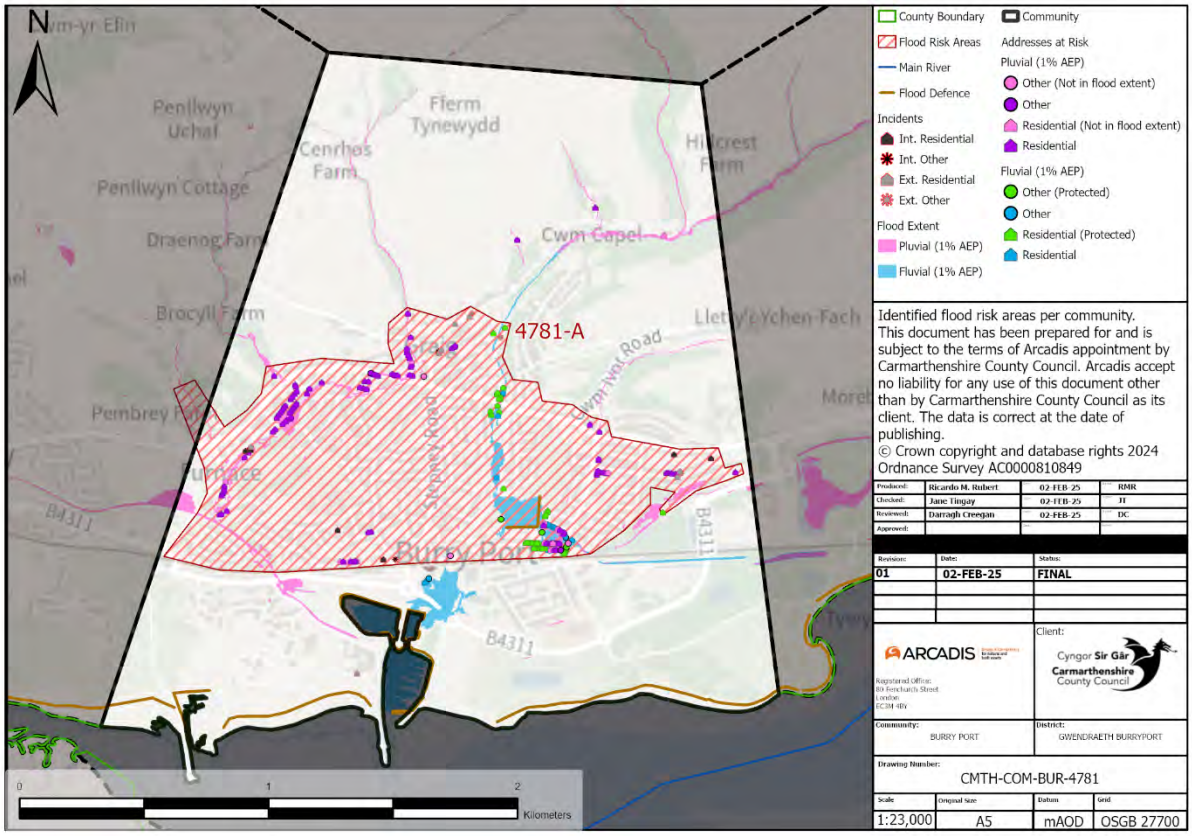

Figure 4-1 Burry Port Community Area

4.1.2 Historical Flood Events

Historically there has been significant flooding in Burry Port with the worst events being in 1983 and 1995 when the memorial park and New Street flooded. There has also been significant historical flooding in Dwynant, when private bridges and culverts have blocked and properties adjacent to the watercourse flooded. Significant interventions have been implemented post these events. Despite the high number of properties at risk in Burry Port, relatively few internal and external property flooding incidents have been reported to CCC. Table 4-1 below highlights that between 2018-2024 only 23 incidents were reported, which is below average reporting when compared to the other 27 high risk priority areas. DCWW have confirmed that 94 incidents of flooding were reported to them over the same period, while NRW have 7 external incidents reported to them.

Table 4-1 Historical Flood Events in Burry Port

Event (Incident) Type	Number of Occurrences	Incidents reported to partner organisations
External Non-Residential	1	-

Event (Incident) Type	Number of Occurrences	Incidents reported to partner organisations
External Residential	13	101
Internal Non-Residential	1	-
Internal Residential	8	-

4.1.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Burry Port community area is presented below in Table 4-2. Properties across Burry Port are at a greater risk of pluvial flooding (including the risk from the Dwynant stream) than fluvial flooding.

As properties across Burry Port are at a greater risk of pluvial flooding, flood risk will be managed by CCC as the Lead Local Flood Authority (LLFA) working in partnership with DCWW who receive the majority of incident reports.

Table 4-2 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Burry Port[7]

Flood Type	Number of Properties at Risk
Pluvial Flooding	100
Fluvial Flooding	60

Gwscwm Road (A484) is shown to be at risk of pluvial flooding while roundabouts located south of Pembrey and Burry Port Station are shown to be at risk of fluvial flooding. Areas located between New Street and Memorial Park as well as Burry Port Town Centre are also shown to be at risk of fluvial flooding.
Table 4-3 presents more information regarding receptors present within Burry Port at risk of flooding.

Table 4-3 Receptors in Burry Port

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	1196	1207
Length of Rail (km)	0	4
Environmental (n)	4	4
Agricultural Land (m^2)	39232	23032

[7] NRW Communities at Risk Register (CaRR) 2019, Available at: https://datamap.gov.wales/layergroups/geonode:nrw_communities_at_risk_register

Residential Properties	56	98
Non-residential Properties	4	2
Town Centre	Burry Port Town Centre	
SFCA Additional Sites	1	0
Mixed Use	2	0
Listed Buildings (n)	7*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

4.1.4 FRM works in the area since FRMP-1

FRM work undertaken in Burry Port since the FRMP-1 are presented below in Table 4-4.

Table 4-4 FRM work undertaken in Burry Port since CCC FRMP-1.

Specific Area (Policy Unit Area)	FRM (FRMP-1) Actions	Progress
Gors Road	CCC will continue to monitor the area and investigate incidents of flooding.	Ongoing
New Street	Desilt culvert beneath Memorial Park.	Complete
	Evaluate options for invasive species management along the Nant Dyfatty.	Ongoing
Furnace	Undertake CCTV camera survey. Any structural or service faults will be actioned on a risk-based basis.	Completed

4.1.5 Flood Risk Areas

Area Description

The main urban area of Burry Port is at greatest risk as shown in Figure 4-2. The primary risks are from the Nant Dyfatty in the east and the Dwynant stream in the west. We also have localised low spots where there is greater risk of pluvial flooding. Key transport links, including the South Wales Mainline railway which is located along the southern portion of the area and the A484 road is located along the northern boundary

of the area. More specific information regarding the risk of flooding within this area can be found in Table 4-5.

Flood Defence Works

Prior and during FRMP-1, resources have been invested into flood risk management in Burry Port. Currently there are no schemes in progress in this area however telemetry has been installed at some of our assets to aid in their monitoring and management.

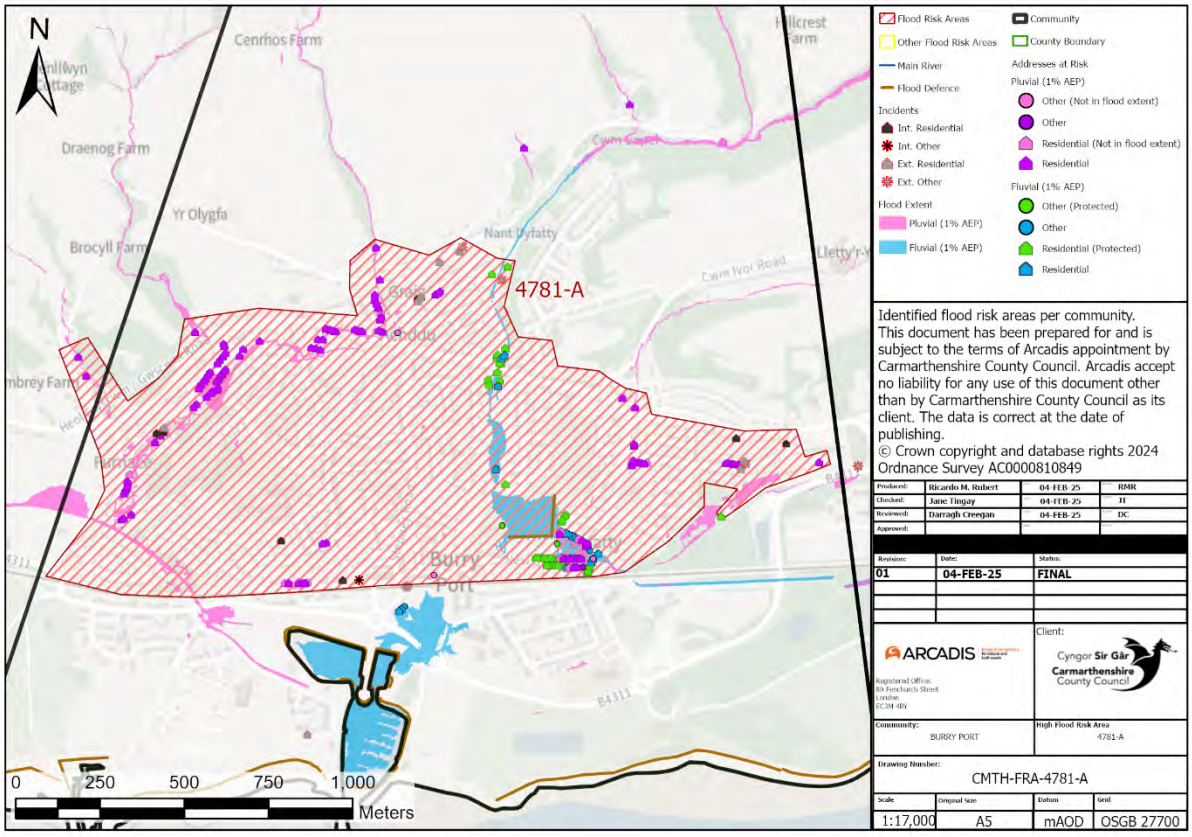

Figure 4-2 Flood Risk Area 4781-A

Table 4-5 Summary of Burry Port's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4781-A	• FRM Good • Highways – Poor A484 and gullies only • Principal FRM assets: Pemberton Arms Grid (CCC biggest trash screen), Dwynant Trash screen Memorial Park trash screen & overflow culverts Memorial Park flood bund	Fluvial: 60 Pluvial:100	• Pembrey & Burry Port Railway station • Schools x 3 (Burry Port Community Primary School; Ysgol Glan y mor; Ysgol Parc-y-Tywyn) • Road (including A484 Gwscwm Road) • Industrial Estate • Town Centre • Pembrey Harbour • Holiday Park (Shoreline Caravan Park)	1983 and 1995 significant events	• DCWW • NRW • Local Landowners, • Welsh Government, • Regeneration Team • Highways/Parks, • Wildlife / Conservation Trusts • Community council	Desired (long / medium term)

4.1.6 Actions Identified

Following the identification of the flood risk within the Burry Port community, a list of actions and interventions was developed below in Table 4-6 to manage the risks of flooding.

Table 4-6 Long List of Potential Actions in Burry Port

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated Costs
4781	Natural Flood Management (NFM)	Prevention	NFM techniques in upper Nant Dyfatty and Dwynant stream catchments could reduce peak flows and reduce pressure downstream. Floodplain reconnection / storage areas in town could reduce flooding.	Medium to long term, dependant on funding	£££
	Asset Management & Maintenance	Prevention	Improve knowledge of sub-terranean drainage assets and road drainage.	Medium to long term	££
	Catchment Scale Flood Alleviation Schemes	Protection	As relatively small catchments are contributing to the flood risk in this community pilot catchment scale Flood Alleviation Scheme with focus on NFM measures could be appropriate.	Medium to long	£££

4.2 Ferryside - 4073

4.2.1 Community Area Description

Ferryside (Figure 4-3) is a coastal village located situated in the Gwendraeth Burry RBD, along Carmarthen Bay. As of 2021, the total population of Ferryside was approximately 861 people[8].

Ferryside is located at the mouth of the River Towy, the main hydrological feature within the area which flows into the Towy Estuary. 1 in 7 people are at risk of fluvial flooding while 1 in 11 people are at risk of pluvial flooding in Ferryside.

Predominant land use features include a mix of residential areas, agricultural land and coastal marshes. Significant infrastructure includes Ferryside Railway Station.

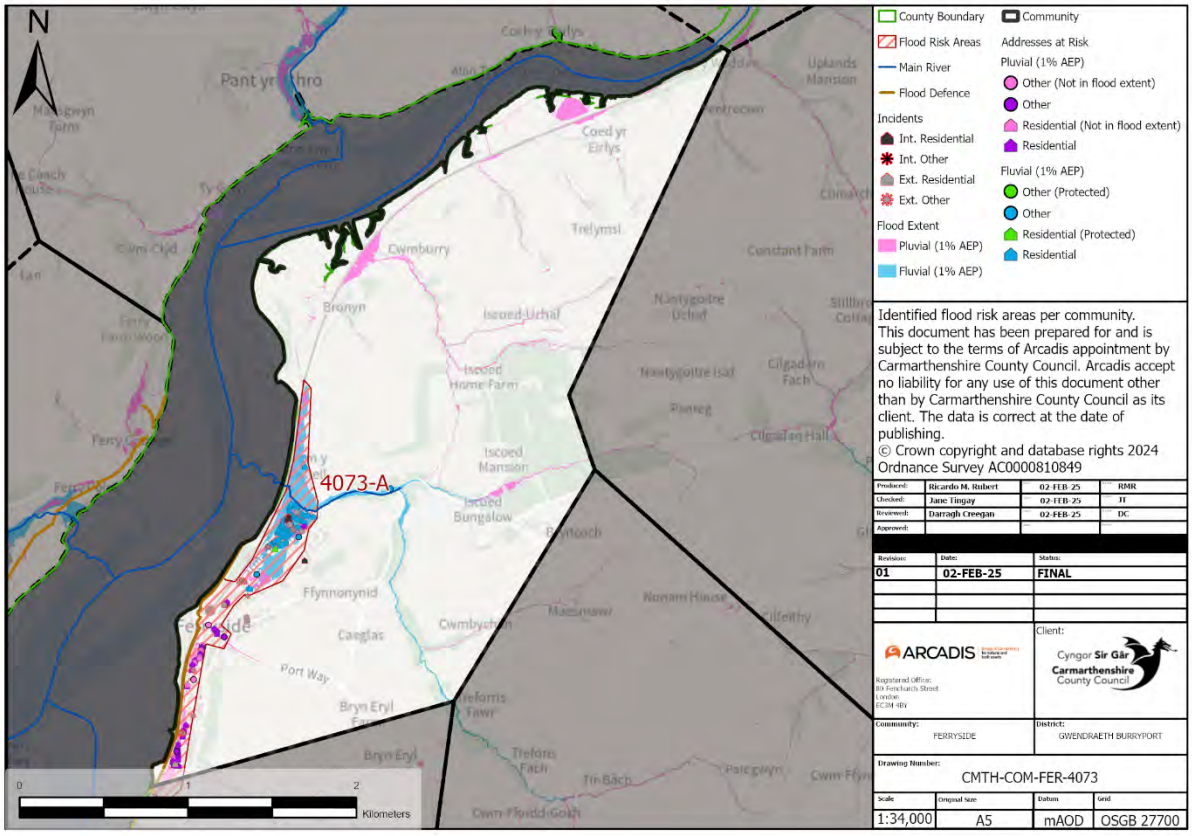

Figure 4-3 Ferryside Community Area

[8] Ferryside Census Data Ferryside (Carmarthenshire, Wales / Cymru, United Kingdom) - Population Statistics, Charts, Map, Location, Weather and Web Information (citypopulation.de)

4.2.2 Historical Flood Events

Historically there has been significant flooding in Ferryside with the worst event being in 1979. Most recently on the 30th December 2023 and 2 January 2024, Storms Gerrit and Henk flooded a relatively small number of properties internally but caused significant external and infrastructure flooding to the village.

Despite the high number of properties at risk in Ferryside, relatively few internal and external property flooding incidents have historically reported to CCC. Works in recent years has made a difference as Table 4-7 below highlights. Between 2018-2024 45 incidents were reported, which is just above average reporting, when compared to the other 27 high risk priority areas.

During the Storm Gerit and Henk flooding incidents, we are aware that DCWW received the majority of the flooding reports as they had operatives and badged vehicles on site and the public wrongly assumed they were the lead organisation. DCWW has confirmed they received 30 reports of flooding, the Highways Authority have received 11 reports and NRW logged 8 reports of flooding over the same period.

Table 4-7 Historical Flood Events in Ferryside

Event (Incident) Type	Number of Occurrences	Incidents Reported to partner organisations
External Non-Residential	6	-
External Residential	25	37
Internal Non-Residential	0	11
Internal Residential	14	1

4.2.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across Ferryside is presented below in Table 4-8. Properties across Ferryside are marginally at a greater risk of fluvial flooding than pluvial flooding. The main river at the east of the village poses the greatest risk to the community. As properties in Ferryside are at a greater risk of fluvial flooding, the mitigation of flood risk will be driven by NRW, but a partnership approach is being taken with NRW leading on managing the flood risk in the north of the village and DCWW and CCC managing the pluvial risk across the area.

Table 4-8 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Ferryside

Flood Type	Number of Properties at Risk
Pluvial Flooding	37
Fluvial Flooding	41

Sections of Port Way are shown to be at risk of pluvial flooding while Carmarthen Road is shown to be at risk of fluvial flooding. Calon y Fferi community centre is also shown to be at risk of fluvial flooding. Table 4-9 presents more information regarding receptors present within Ferryside at risk of flooding.

Table 4-9 Receptors in Ferryside

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	2189	1759
Length of Rail (km)	0	191
Environmental (n)	4	10
Agricultural Land (m^2)	75880	67700
Residential Properties	39	33
Non-residential Properties	2	4
Key Services (n)	1	2
Listed Buildings (n)	6*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

4.2.4 FRM works in the area since FRMP-1

FRM work undertaken in Ferryside since the FRMP-1 are presented below in Table 4-10.

Table 4-10 FRM work undertaken in Ferryside since CCC FRMP-1.

Specific Area / Policy Unit Area	FRM (FRMP-1) Actions	Progress
Ferryside North	Given the complexities at this location, discussion with NRW and local community are needed on potential to manage flooding.	Ongoing

Specific Area / Policy Unit Area	FRM (FRMP-1) Actions	Progress
Ferryside South	Evaluate the merits in improving the outfall to the 1904 houses to prevent 'back wash' and blockage (Capital Scheme 2022/23).	Completed
	Undertake CCTV camera survey, any structural or service faults will be actioned on a risk-based basis.	Completed

4.2.5 Flood Risk Areas

The area highlighted in Figure 4-4 is the highest flood risk area in Ferryside. The south of the village is predominately at risk from pluvial flooding, while the north is at risk from the Cwm Mill main river to the north. The railway embankment, while protecting the village from tidal inundation, also prevents fluvial and pluvial waters from escaping. Discharging these waters, which flow into the village down a steep sided hills to the east, is via only a small handful of culverts under the railway embankment. These historical culverts were not designed to discharge the volumes of surface water we see today flowing into the village. More specific information regarding the risk of flooding within this area can be found in Table 4-11.

4.2.5.1 Area 4073-A

Area Description

The area highlighted in Figure 4-4 is the highest flood risk area in Ferryside. The south of the village is predominately at risk from pluvial flooding, while the north is at risk from the Cwm Mill main river to the north. The railway embankment, while protecting the village from tidal inundation, also prevents fluvial and pluvial waters from escaping. Discharging these waters, which flow into the village down a steep sided hills to the east, is via only a small handful of culverts under the railway embankment. These historical culverts were not designed to discharge the volumes of surface water we see today flowing into the village. More specific information regarding the risk of flooding within this area can be found in Table 4-11.

Flood Defence Works

Capital flood defence works undertaken in Ferryside include:

- 2022 - Repairs to the 1904 outfall.
- 2024 - A CCTV survey of drainage assets.
- 2024 - Partnership work with DCWW.
- 2024 - NRW to remove shoal at main river in the north of the village.
- 2024 - Development of a drainage masterplan with DCWW (ongoing).

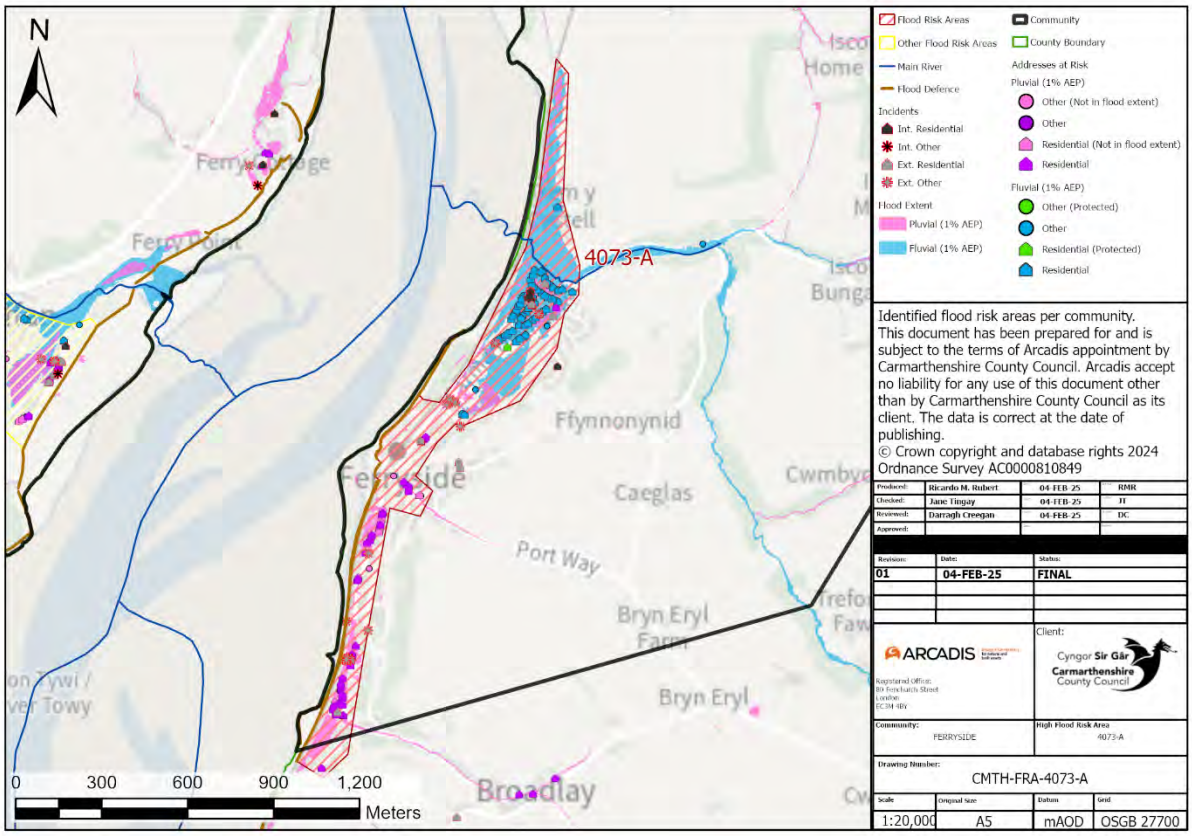

Figure 4-4 Flood Risk Area 4073-A

Table 4-11 Summary of Ferryside's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4073-A	• 1904 Outfall • Drainage runs • Average to good knowledge	• Fluvial: 63 • Pluvial: 56	• Ferryside Railway station • Ferryside Primary School	• Jan 2024	• DCWW • NRW • Welsh Government, • CCC Regeneration Team, • Landowners, • CCC Highways/ Parks	• Recently complete in January 2024 – needs to move forward again in short term

4.2.6 Actions Identified

Following the identification of the flood risk within the Ferryside community, a list of actions and interventions was developed below in Table 4-12 to manage the risks of flooding.

Table 4-12 Long List of Potential Actions in Ferryside

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated Cost
Community Wide	Asset Management & Maintenance	Prevention	CCTV surveys of drainage.	Short	££
	Partnership Working	Review	Work with DCWW to develop a master drainage plan.	Short	£
	Partnership Working	Review	Support NRW and highlight the risk from Cwm Mill Stream (Cwm Mill Stream is a main river and the legislative powers for management and funding for management lie with NRW).	Short	£
	Community Work	Preparedness	Continue our community engagement and education of risk and interventions	Short	£
	Partnership Working	Review	Seek grant funding from WG to further evaluate the flood risk and look at options for interventions to manage the risk via a business case.	Medium	£££
4073	Natural Flood Management	Prevention	NFM techniques in upstream catchments could reduce peak flows and reduce pressure downstream.	Medium	£££
	Asset Management & Maintenance	Prevention	Evaluate the 1904 outfall again due to increased highways flooding. Investigate if capacity of this could be improved.	Ongoing	££
	Property Level Protection	Protection	Implementation of Property Level Protection (Subject to funding).	Medium	Subject to funding

4.3 Gorslas - 4436

4.3.1 Community Area Description

Gorslas (Figure 4-5) is a village situated in the Gwendraeth Burry RBD. As of 2021, the total population of Gorslas was approximately 5,085 people.[9]

The Gwendraeth Fawr is the main hydrological feature in the community and these upper reaches of one of Carmarthenshire's main rivers lies at over 160m (500 feet) above sea level and is therefore one of our wettest areas in the county. While the risk of fluvial flooding is low, 1 in 31 people are at risk of pluvial flooding in Gorslas.

Gorslas was a former coal mining area with other land uses including rough pasture / pastoral agriculture. Currently, predominant land uses include residential and amenity and mix of rural areas including agricultural land and small patches of woodland. There has been significant highway infrastructure development in recent years and including upgrades to and around the A48, A476, B4556 and the B4297.

[9] Gorslas Census Data Gorslas (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

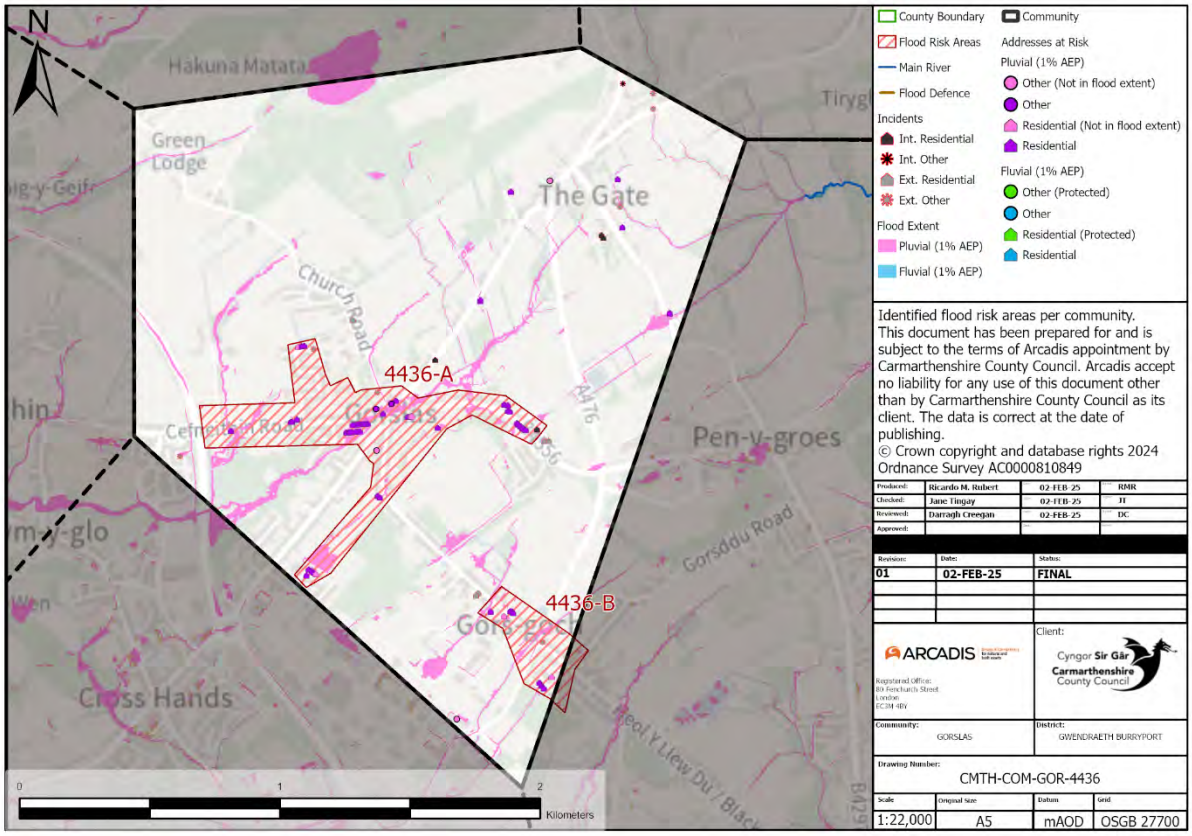

Figure 4-5 Gorslas Community Area

4.3.2 Historical Flood Events

Historically, we are not aware of any significant flooding incidents in Gorslas. We are aware that groundwater and springs cause issues both on Black Lion Road and around Church Road.

Despite the high number of properties at risk in Gorslas, relatively few internal and external property flooding incidents have historically reported to CCC. Table 4-13 below highlights, between 2018-2024 only 21 incidents were reported, which below above average reporting, when compared to the other 27 high risk priority areas.

The Highways Authority have just a single reported incident of flooding in this area while DCWW have recorded 3 flooding incidents.

Table 4-13 Historical Flood Events in Gorslas

Event (Incident) Type	Number of Occurrences	Incidents reported to partner organisations
External Non-Residential	5	1
External Residential	10	3

Event (Incident) Type	Number of Occurrences	Incidents reported to partner organisations
Internal Non-Residential	0	-
Internal Residential	6	-

4.3.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across Gorslas is presented below in Table 4-14. As properties across Gorslas are at a greater risk of pluvial flooding than fluvial flooding, flood risk will be managed by CCC working in partnership with other stakeholders.

Table 4-14 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Gorslas

Flood Type	Number of Properties at Risk
Pluvial Flooding	60
Fluvial Flooding	0

Sections of Penygroes Road (B4556), Llandeilo Road and Cefneithin Road are shown to be at risk of pluvial flooding. Table 4-15 presents more information regarding receptors present within Gorslas at risk of flooding.

Table 4-15 Receptors in Gorslas

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	0	1118
Length of Rail (km)	0	0
Environmental (n)	0	2
Agricultural Land (m^2)	0	101616
Residential Properties	0	54
Non-residential Properties	0	6
Key Services (n)	0	2
SFCA Additional Sites	0	2
Residential Allocation	0	3
Proposed Employment Areas	0	1
Listed Buildings	0*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

4.3.4 FRM works in the area since FRMP-1

FRM work undertaken in Gorslas since the FRMP-1 are presented below in Table 4-16.

Table 4-16 FRM work undertaken in Gorslas since CCC FRMP-1.

Specific Area / Policy Unit Area	FRM (FRMP-1) Actions	Progress
Gorslas Square	CCC will continue to monitor the culvert and undertake CCTV camera survey of the local infrastructure. Any structural or service faults will be actioned on a risk-based basis.	Ongoing

4.3.5 Flood Risk Areas

One flood risk area has been identified within Gorslas, labelled as 4436-A (Figure 4-6). Area 4436-A is situated in the southern region of the Gorslas community area. Addresses identified are predominantly at risk of pluvial flooding. More specific information regarding the risk of flooding within this area can be found in Table 4-17.

4.3.5.1 4436-A Gorslas Square

4436-A Area Description

The area mainly consists of properties located along Cefneithin Road and Black Lion Road. The area is largely residential, and the source of flood risk is from pluvial flooding associated with the alignment of the Gwendraeth Fawr which flows through the centre of the area.

Flood Defence Works

None currently in progress.

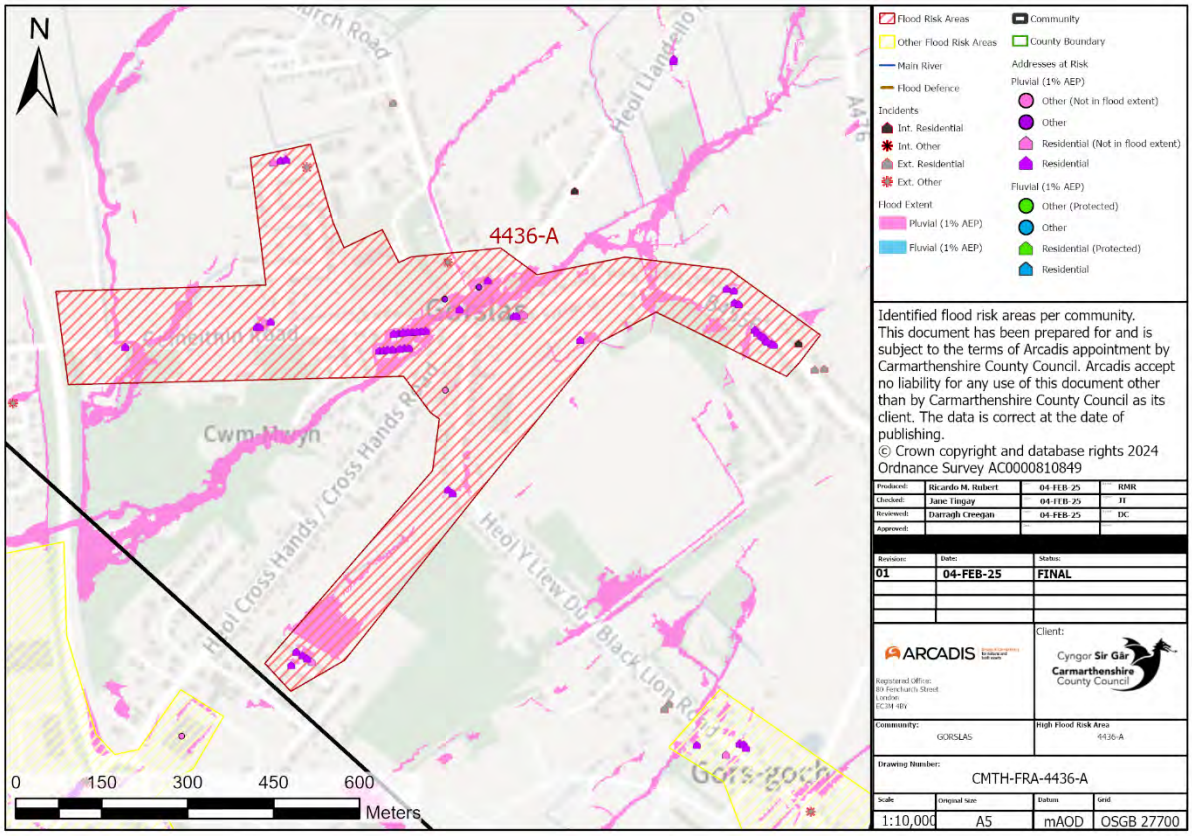

Figure 4-6 Flood Risk Area 4436-A

Table 4-17 Summary of Gorslas's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4436-A	• Poor	• Fluvial: 0 • Pluvial: 51	• Ysgol Gynradd Gorslas (School) • Roads (A476, B4556) • Gorslas Industrial Estate	• No information provided	• DCWW, Regeneration Team, Ten Towns Initiative, CCC Highways/ Parks, NRW, Landowners	• Desired (medium to long term)

4.3.6 Actions Identified

Following the identification of the flood risk within the Gorslas community, a list of actions and interventions was developed below in Table 4-18 to manage the risks of flooding.

Table 4-18 Long List of Potential Actions in Gorslas

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimate Costs
4436-A	Natural Flood Management	Prevention	Explore Natural Flood Management solutions and funding options within this area to reduce probability of out of bank flooding.	Medium	£££
	Retro Fit Sustainable Drainage Systems (SuDS)	Prevention	Look for opportunities to fund and work in collaboration with partners to retrofit SuDS in street scape to reduce runoff and provide attenuation.	Medium	£££

4.4 Kidwelly - 4054

4.4.1 Community Area Description

Kidwelly (Figure 4-7) is a small coastal town situated in the Gwendraeth Burry RBD, in the southern region of Carmarthenshire. Due to the historical nature of the town the drainage and flood risk infrastructure are ageing, and historical overland flow routes have been replaced by piped systems. As of 2021, the total population of Kidwelly was approximately 5,053 people[10].

The main hydrological features are the Gwendraeth Fawr and Gwendraeth Fach watercourses. The Gwendraeth Fach flows through the northern region of Kidwelly while the Gwendraeth Fawr flows through the central and southern regions of Kidwelly. NRW has flood defences present on the lower sections of the main rivers around Highfield Villas including a tidal flap on Commissioners Bridge on the Gwendraeth Fawr. Kidwelly has historically been impacted by un-forecasted short sharp rainfall events that overwhelm local watercourses and drainage and cause significant flood issues. 1 in 1684 people are at risk of fluvial flooding in Kidwelly while 1 in 37 people are at risk of pluvial flooding.

Predominant land use features include a mix of residential areas, urban areas, pastoral agricultural land and green spaces. Significant infrastructure includes the A488 and the B4308, Kidwelly Railway Station, Kidwelly Castle, Kidwelly Quay and Pembrey Airport.

In recent years, following significant flooding (see below sections) there has been extensive community work with regards to flood risk management. Local groups have been set up and members of the community are now far more aware and empowered to manage their flood risk. CCC meet with the community group representatives approximately three times a year.

[10] Kidwelly Census Data Your Data - Nomis - Official Census and Labour Market Statistics (nomisweb.co.uk)

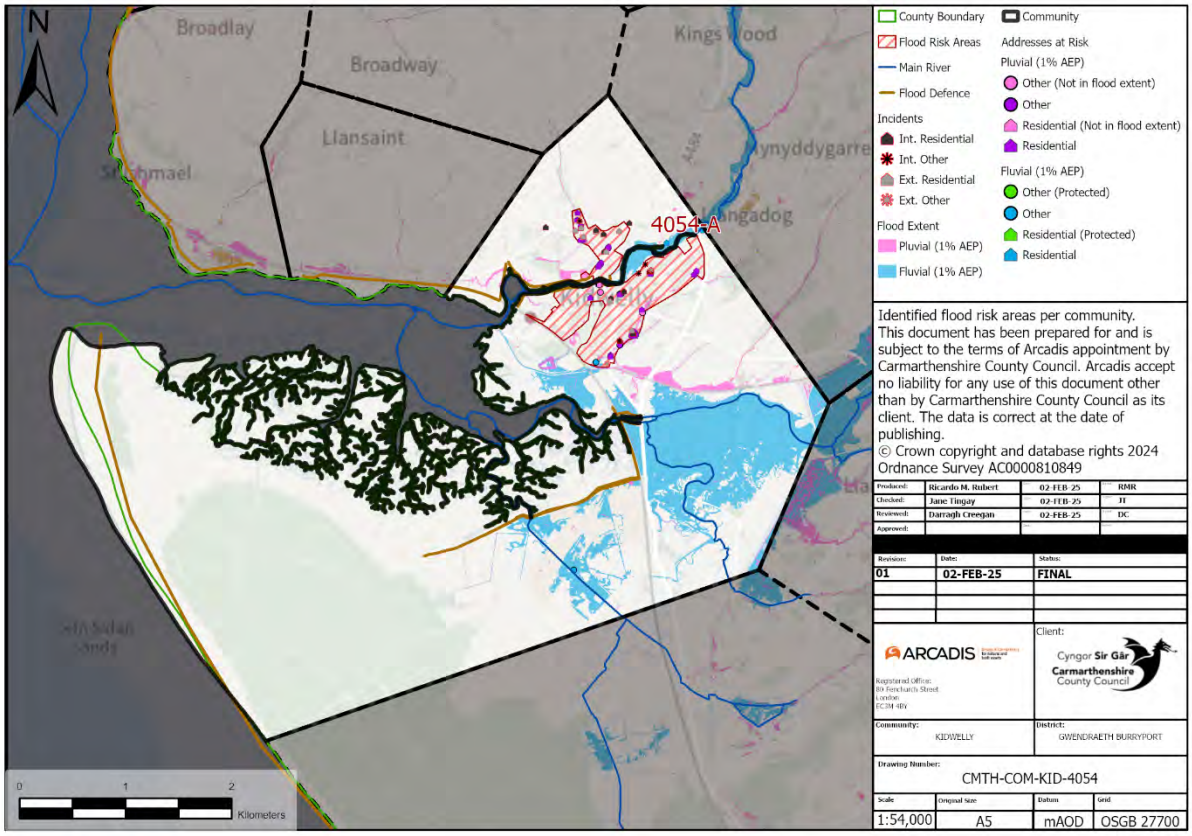

Figure 4-7 Kidwelly Community Area

4.4.2 Historical Flood Events

There was significant flooding in Kidwelly with two events on the 4th and 20th October 2021 flooding many residential home and business across the town.

As a result of these incidents and the work of the community flood group, incident reporting in Kidwelly is strong. As Table 4-19 shows, between 2018 and 2024, there have been a significantly high number of both internal and external incidents reported across Kidwelly.

Due to our partnership working with DCWW, we are aware that a further 139 flooding incidents have been reported in the same period. NRW recorded 2 external flooding incidents.

Table 4-19 Historical Flood Events in Kidwelly

Event (Incident) Type	Number of Occurrences	Flooding incidents reported partner organisations
External Non-Residential	0	-
External Residential	22	141

Internal Non-Residential	25	-
Internal Residential	31	-

4.4.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Kidwelly community area is presented below in Table 4-20. Despite the presence of two hydrological features, properties within Kidwelly are considered to be at a greater risk of pluvial than fluvial flooding. CCC will continue to manage the risk. However, agricultural land in the southern regions of Kidwelly are at risk of fluvial flooding due to the presence of the Gwendraeth Fawr. NRW will continue to manage the risk of flooding posed by the Gwendraeth Fawr and Fach within this area.

Table 4-20 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Kidwelly

Flood Type	Number of Properties at Risk
Pluvial Flooding	49
Fluvial Flooding	1

Land immediately upstream of the Commissioners Bridge is at risk of fluvial flooding while the sections of the A484, B4306 and Cae Fynnon Road, Ferry Road and Water Street are also shown to be at significant risk of pluvial flooding. Sections of Bridge Street, Pembery Road and the A484 are also shown to be at risk of fluvial flooding. Pembrey Airport and Kidwelly Castle are a few of the receptors considered to be at risk of fluvial flooding in Kidwelly. Table 4-21 presents more information regarding receptors present within Kidwelly at risk of flooding.

Table 4-21 Receptors in Kidwelly

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	822	801
Length of Rail (km)	259	280
Environmental (n)	3	2
Agricultural Land (m^2)	1894356	373184
Residential Properties	0	46
Non-residential Properties	1	3
Residential Allocation	0	2
Listed Buildings	19*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

4.4.4 FRM works in the area since FRMP-1

FRM work undertaken in Kidwelly since the FRMP-1 are presented below in Table 4-22.

Table 4-22 FRM work undertaken in Kidwelly since CCC FRMP-1.

Specific Area / Policy Unit Area	FRM (FRMP-1) Actions	Progress
Clos Y Heleg	CCC proposed the construction of a new school to the rear of the Co-op. The Flood Defence and Coastal Protection Team will continue to work with the Local Planning Authority to ensure that any development does not have an adverse effect on flood risk in the area.	Complete
Non FRMP actions	Cleared watercourse and constructed a track along the berm for future maintenance (clos Y Heleg).	Complete
Clos Y Heleg	CCTV survey.	Complete
Clos Y Heleg	Partnership working with Pobl to better manage the drainage infrastructure and flood risk.	Compete
Clos Y Heleg, Llys Gwenllian and Ferry Road	Site visits to high risk areas and advice given to residents and businesses on flood risk management and reporting incidents correctly.	Complete
Clos Y Heleg, Llys Gwenllian and Ferry Road, Ger Y Castell, Ger Y Gwendraeth, Lady Street, Water Street, Cae Ffynnon, New Street and Parc Pendre	CCTV surveys.	Complete
Cae Ffynnon PROW	Watercourse clearance, channel reprofiling, earth bund and vegetation management.	Complete
Llys Gwenllian	Work with Pobl and DCWW to manage the risk of surface water entering the sewage system at Llys Gwenllian.	Complete
Industrial Estate	Construction of new drainage ditch to allow industrial estate drainage to discharge to the estuary.	Complete

4.4.5 Flood Risk Areas

The area at greatest risk of flooding is Kidwelly town from Ferry Road and Water Street in the west to Ger Y Gwendraeth and Ger Y Castell in the north and to the industrial and business areas in the west (shown in Figure 4-8). More specific information regarding the risk of flooding within this area can be found in Table 4-23.

Flood Defence Works

Capital flood defence works undertaken in Kidwelly include:

- Twenty-eight actions have been completed following the October 2021 flooding and a Section 19 flood investigation report has been complete. The formal Incident Investigation can be found at Flood Investigations.
- Capital works complete at Ferry Road 2024.
- Business case has been commenced and an Outline Business Case has been developed although not currently funded beyond this stage.
- Working with a local housing association to better manage the flood risk around Llys Gwenllian.

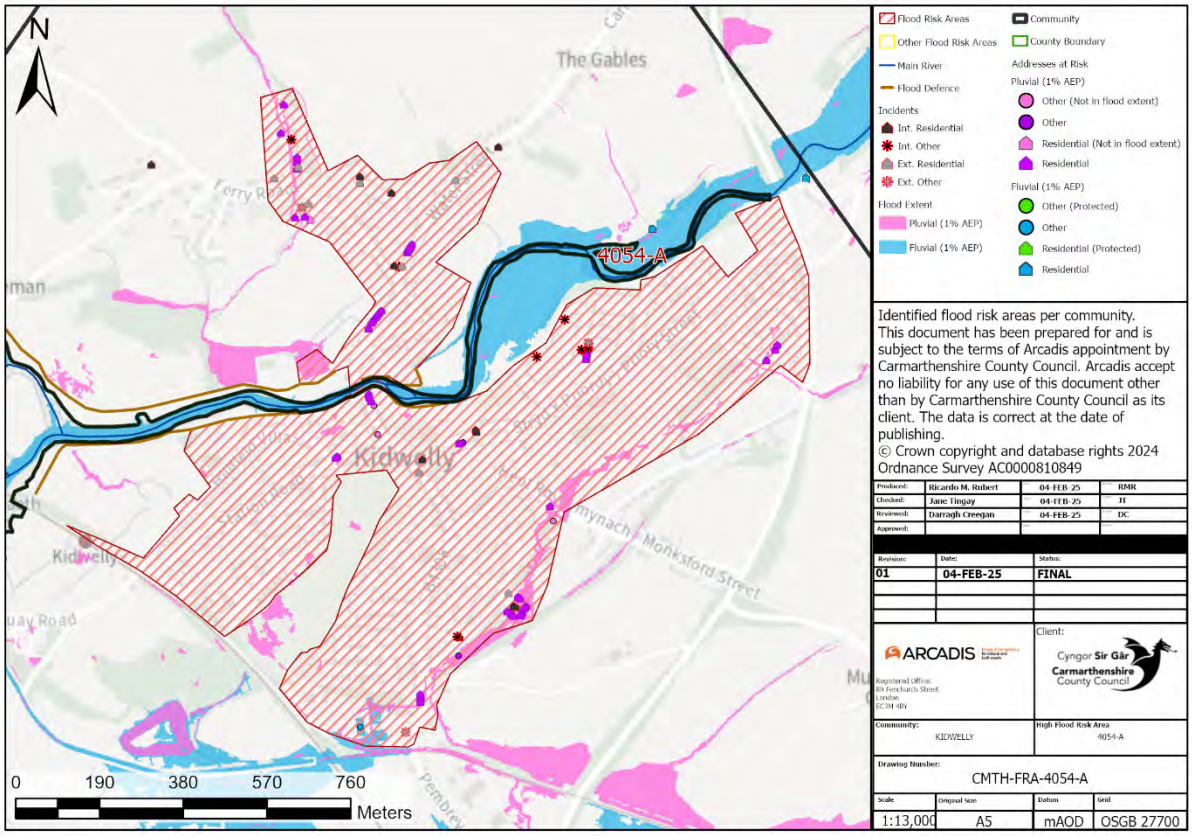

Figure 4-8 Flood Risk Area 4054-A

Table 4-23 Summary of Kidwelly's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4054-A	• Good	• Fluvial: 1 • Pluvial: 58	• Kidwelly Railway station • Schools & educational centres (Ysgol Y Castell; Gwenllian Education Centre; Busy Bugs Day Nursery) • Built Heritage (Kidwelly Castle) • Road (including A484 and B4308) • Kidwelly Industrial Estate • Town Centre • Kidwelly Castle	No major events known	• DCWW • CCC Building Heritage • CCC Regeneration Team • CCC Ten Towns Initiative, Highways / Parks • NRW • Landowners • Welsh Government	Recently done and exemplar – ongoing

4.4.6 Actions Identified

Following the identification of the flood risk within the Kidwelly community, a list of actions and interventions was developed below in Table 4-24 to manage the risks of flooding.

Table 4-24 Long List of Potential Actions in Kidwelly

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated Cost
Community Wide	Flood Alleviation Scheme	Protection	Ferry Road FAS.	Short	£££
	Community Work	Preparedness	Continue to support the community flood group.	Short	£
	Sourcing Funding	Review	Bid for WG funding to progress business case and evaluation of risk and options If we are successful with WG grant bids then CCC can continue our business case, evaluation and optioneering works.	Short	££
4054	Asset Management & Maintenance	Prevention	Create asset management plans for key assets and carry out regular inspection and maintenance.	Ongoing	£
	Natural Flood Management	Prevention	Seek opportunities for Natural Flood Management techniques in upper catchment which could reduce peak flows and reduce pressure downstream. Some attenuation schemes within community on fringes of urban area could provide benefit.	Medium	£££

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated Cost
	Retrofit SuDS	Prevention	Seek opportunities to retrofit of SuDS at targeted locations to reduce runoff and/or provide attenuation.	Medium	£££
	Property Flood Resilience	Preparedness	Seek opportunities to utilise Property Flood Resilience with Welsh Government funding.	Medium	£££

5 Llanelli River Basin District

5.1 Dafen - 4021

5.1.1 Community Area Description

Dafen (Figure 5-1) is a village situated northeast of Llanelli Town Centre, in the southern region of Carmarthenshire. As of 2021, the total population of Dafen was approximately 5,195 people[11].

The main hydrological features are the Afon Dafen and the Afon Lliedi, both designated main rivers. The Upper and Lower Lliedi Reservoirs, both DCWW assets, are also located within this community. In Dafen, 1 in 13 people are at risk of fluvial flooding while 1 in 5 people are at risk of pluvial flooding.

Dafen is predominately a rural community with sub-urban residential centres / villages with industrial and business areas particularly concentrated in and around the main highway infrastructure Dafen is also surrounded by expansive green spaces. Significant infrastructure in Dafen include schools such as the John Lloyd Catholic Comprehensive School and Ysgol Bryngwyn School, the Prince Phillip Hospital, Dafen Industrial Estate and two major manufacturing factories operated by Gerstamp and Marelli.

[11] Dafen Census Data Your Data - Nomis - Official Census and Labour Market Statistics (nomisweb.co.uk)

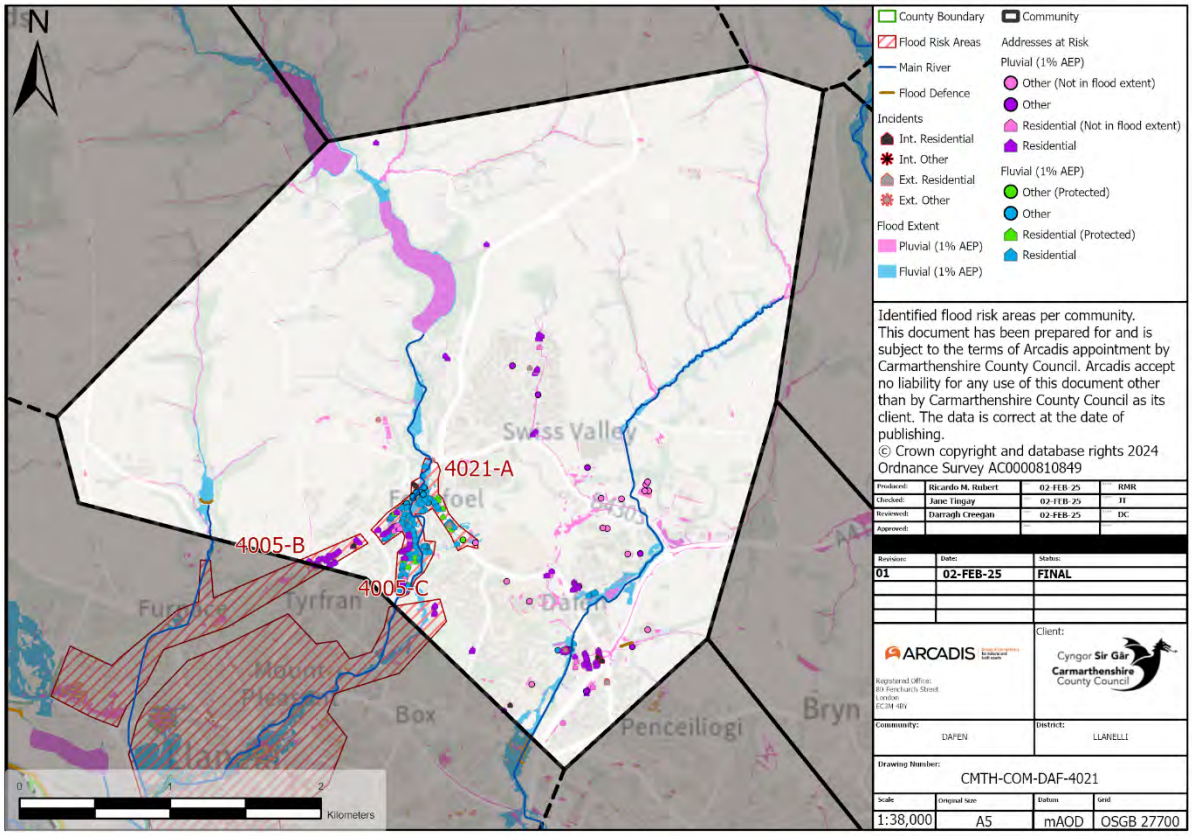

Figure 5-1 Dafen Community Area

5.1.2 Historical Flood Events

Historically there has been significant flooding in Dafen with incidents in the 1990s and early 2000s affecting multiple properties in and around Bryngwyn Road and Exchange Row.

As highlighted in Table 5-1, the Dafen community are above average at reporting flooding incidents to CCC. We also note that in this community, issues will be reported to our partner agencies. DCWW have confirmed they have received 6 reports of flooding and NRW had a single report. Between 2018-2024 49 incidents were reported to CCC.

Table 5-1 Historical Flood Events in Dafen

Event Type	Number of Occurrences	Flooding reported to partner organisations
External Non-Residential	0	-
External Residential	11	7
Internal Non-Residential	0	-
Internal Residential	38	-

5.1.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Dafen community area is presented below in Table 5-2. As the number of properties at risk of pluvial and fluvial flooding are both equally high in Dafen, the mitigation of flood risk should be collaboratively addressed by CCC and NRW.

Table 5-2 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Dafen

Flood Type	Number of Properties at Risk
Pluvial Flooding	182
Fluvial Flooding	171

Areas surrounding Prince Phillip Hospital, Dafen Park and Salem Road and Heol Buckley in Felinfoel are shown to be at a great risk of pluvial flooding. Areas at risk of fluvial flood risk are located in the urban areas around the River Lliedi and Dafen but also extend to Ynyswen in Felinfoel and Ysgol Y Felin. In Dafen, the area around Maescanner Road, New Road and Exchange Row are a greatest fluvial risk. Table 5-3 presents more information regarding receptors present within Dafen at risk of flooding.

Table 5-3 Receptors in Dafen

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	3048	2959
Length of Rail (km)	0	0
Environmental (n)	13	6
Agricultural Land (m^2)	86104	123748
Residential Properties	158	161
Non-residential Properties	13	21
Key Services (n)	4	9
SFCA Additional Sites	0	2
Residential Allocation	0	2
Proposed Employment Area	0	1
Listed Buildings (n)	8*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

5.1.4 FRM works in the area since FRMP-1

FRM work undertaken in Dafen since the FRMP-1 are presented below in Table 5-4.

Table 5-4 FRM work undertaken in Dafen since CCC FRMP-1.

Specific Area (Policy Unit Area)	FRM (FRMP-1) Actions	Progress
Bryngwyn Road	Continue to maintain the flood bund around the park.	Complete
Exchange Row	Undertake routine repairs and maintenance of Exchange Row culvert as identified in 2018 CCTV survey.	Complete
Glyncoed Terrace	CCC will continue to work with DCWW and NRW with regard to managing the issue.	Ongoing
Non FRMP Actions		
Bryngwyn Road	Capital scheme to update and divert surface water drainage	Complete
New Road and Bryngwyn Road	CCTV	Complete
Heol Buckley	Evaluation of flood risk and business case development	Complete

5.1.5 Flood Risk Areas

Figure 5-2 shows the area of greatest flood risk. Properties located in this Area (4021-A) are primarily at risk of fluvial flooding, due to the presence of the Afon Lliedi. The predominant land uses in Area 4021-A are residential. Significant roads running through the community include the A476 and the A4138. More specific information regarding the risk of flooding within this area can be found in Table 5-5.

Flood Defence Works

In 2024 detailed design was completed for works at Heol Buckley.

In this area the NRW FRMP for south west Wales action is for 'Design and construction of flood alleviation scheme' in the short term and to 'Investigate feasibility for new flood warning service' in the medium term. Both actions have not yet been started. More information regarding flood risk area can be found in Table 5-5.

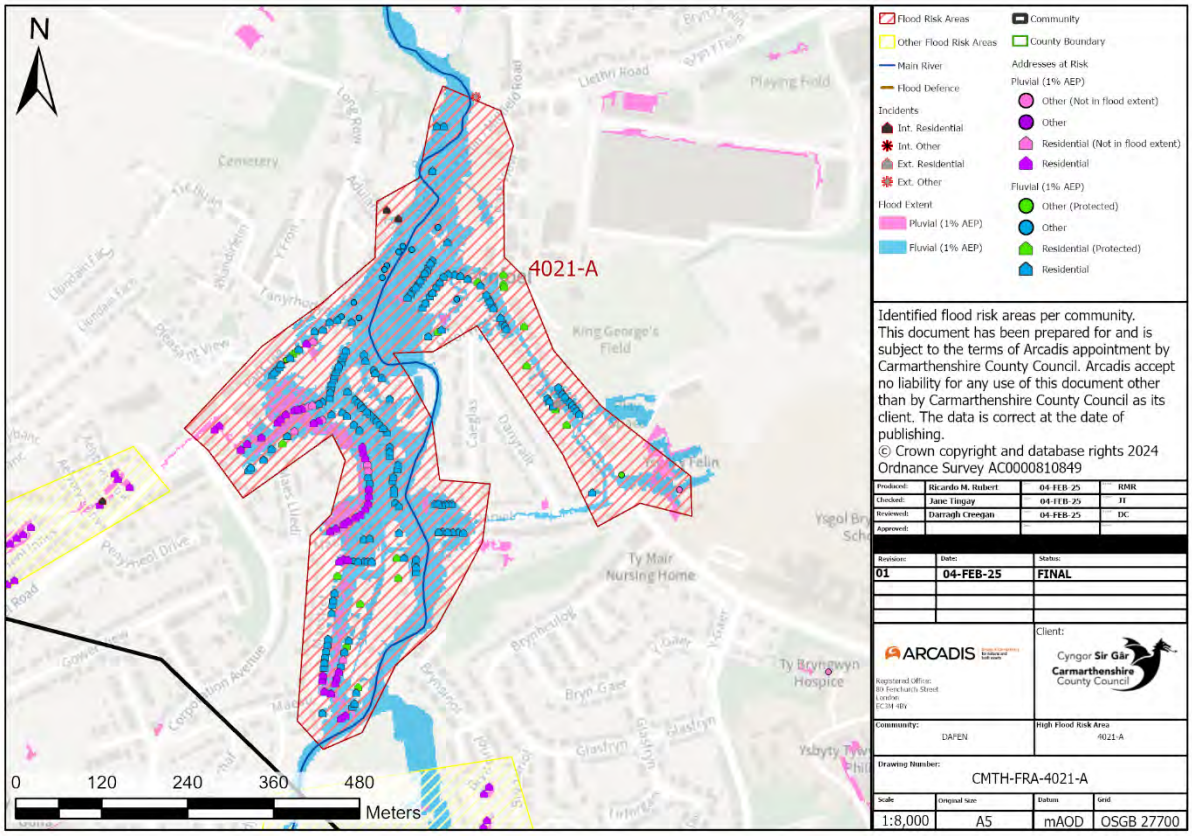

Figure 5-2 Flood Risk Area 4021-A

Table 5-5 Summary of Dafen's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4021-A	**Assets numbers** • High • Principal assets • DCWW reservoirs • Dafen screens and culverts **Assets knowledge** • FRM Good • Highways A Roads 100%	Fluvial: 246 Pluvial: 49	• Industrial and business areas • Prince Philip Hospital • Schools x 5 (Swiss Valley Community Primary School; Ysgol Bryngwyn School; Dafen C P School; Ysgol Y Felin) • Major Road (A476) • Dafen Industrial Park • Co-op • Felinfoel Brewery	No known events	• DCWW • NRW • LLFA • Welsh Government	Desired (medium term)

5.1.6 Actions Identified

Following the identification of the flood risk areas within the Dafen community, a list of actions was developed below in Table 5-6 to manage the risk of flooding in each flood risk area.

Table 5-6 Long List of Potential Actions in Dafen

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated costs
Community Wide	Catchment Scale Flood Alleviation Schemes	Protection	Complete Heol Buckley works.	Short	££
4021	Asset Management & Maintenance	Protection	Asset Management Plans, further investigation of CCC assets/ CCTV works to better understand ownership and inspection and maintenance regime. Collaborate with residents in Swiss Valley to manage private drainage.	Ongoing	£
	Hard Engineering	Protection	Support NRW if they were to explore a flood defence scheme on the river Lliedi which could alleviate flood risk to properties (and downstream).	Long	££££
	Natural Flood Management	Protection	Seek opportunities to explore NFM techniques in upper catchment of the river Dafen could reduce peak flows and reduce pressure downstream.	Medium	£££

5.2 Llanelli - 4005

5.2.1 Community Area Description

Llanelli (Figure 5-3) is the largest town located within Carmarthenshire. As of 2021, the total population of Llanelli was approximately 25,366 people[12].

The main hydrological features present within Llanelli are the four designated main rivers; the River Dulais, River Cille, River Dafen and River Lliedi. There are also a number of ordinary watercourses, reservoirs and other waterbodies. In Llanelli, 1 in 17 people are at risk of fluvial flooding while 1 in 27 people are at risk of pluvial flooding.

Predominant land use features in Llanelli include residential areas, commercial establishments, industrial estates, and green spaces. Significant infrastructure includes schools (Coleg Sir Gâr), Llanelli Town Centre, Trostre Retail Park, and transport links such as Llanelli Railway Station, the A484, A476 and the A4138.

[12] Llanelli Census Data Llanelli (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

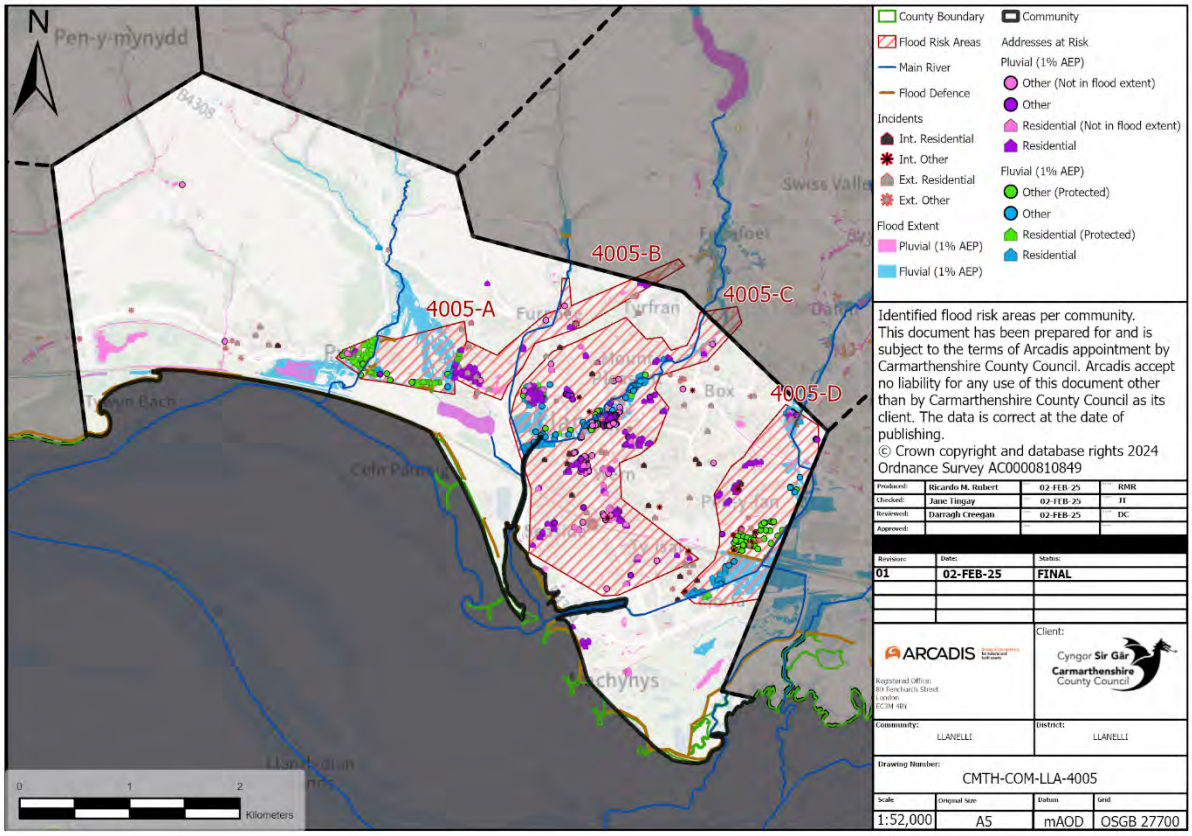

Figure 5-3 Llanelli Community Area

5.2.2 Historical Flood Events

Historically, we are not aware of any significant pluvial or fluvial in Llanelli but partner organisations such as DCWW, NRW and the Highways Authority are likely to take the lead on many flooding issues in the community.

Llanelli is our highest populated area and area with the greatest number of properties at flood risk. Despite flooding issues and incidents being reported to other organisations, the community of Llanelli report a significant number of flooding incidents to the CCC FRM team.

Table 5-7 below highlights that between 2018-2024, 118 incidents were reported, which is one of the highest numbers of incidents reported across this period. Over a similar period, 479 incidents were reported to DCWW. NRW had just a single incident reported to them.

Table 5-7 Historical Flood Events in Llanelli

Event (Incident) Type	Number of Occurrences	Flooding incidents reported to partner organisations
External Non-Residential	29	-
External Residential	48	471
Internal Non-Residential	18	-
Internal Residential	23	9

5.2.3 Community Area Flood Risk

Data relating to the number of addresses at risk of either fluvial or pluvial flooding across the Llanelli community area is presented below in Table 5-8. As properties in Llanelli are at a greater risk of fluvial flooding, the mitigation of flood risk actions within this community should be led / initiated by NRW. However, as incident numbers highlight, the sub-terranean drainage is largely owned and operated by DCWW, and as such they also have a key part to play.

Table 5-8 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Llanelli

Flood Type	Number of Properties at Risk
Pluvial Flooding	380
Fluvial Flooding	519

Areas around Pwll, Sandy Road (including the CCTA and Ysgol Y Strade), Furnace the town centre and Tyisha are shown to be at risk of fluvial flooding. Further east the main fluvial risk is centred around Trostre Business Park and Industrial Estate. The pluvial flood risk is greatest in around Sandy Road (again around the CCTA and Ysgol Y Strade), the town centre and Tyisha, Seaside, Penyfan and Trostre Road and Trostre Retail & Business Park. Table 5-9 presents more information regarding receptors present within Llanelli that are at risk of flooding.

Table 5-9 Receptors in Llanelli

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (m)	13107	7792
Length of Rail (m)	445	75
Environmental (n)	9	10
Agricultural Land (m^2)	588896	97080
Residential Properties	356	304

Receptor	Fluvial Risk	Pluvial Risk
Non-residential Properties	163	76
Key Services (n)	7	4
Town Centre	Llanelli	
Strategic Site	0	Llanelli Wellness & Life Science Village
SFCA Additional Sites	1	25
Retail Park	Parc Trostre	0
Residential Allocation	0	2
Proposed Gypsy and Traveller Site	0	1
Mixed Use	1	2
Local Nature Reserve	0	Ashpits Pond - Pwll Lagoon
Listed Buildings	94*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

5.2.4 FRM works in the area since FRMP-1

FRM work undertaken in Llanelli since the FRMP-1 are presented below in Table 5-10.

Table 5-10 FRM work undertaken in Llanelli since CCC FRMP-1.

Specific Area / Policy Unit Area	FRM (FRMP-1) Actions	Progress
Trostre Road & Gorsedd, Llanelli	Liaise with NRW and Network Rail regarding the management of the Afon Dafen trash screen.	Completed
	Work with the Highway's Authority to manage the Trostre Road culvert.	Completed
Greenway Street, llanelli	CCC will continue to monitor the area, respond to incidents of flooding and liaise with DCWW in regard to the Rainscape Project.	Ongoing
Llanelli Town Centre	Continue to liaise and co-operate with DCWW to deliver the Rainscape Project.	Completed
Felinfoel, Llanelli	Undertake CCTV surveys of the drainage network to ascertain asset owners and responsibilities.	Completed

Specific Area / Policy Unit Area	FRM (FRMP-1) Actions	Progress
Seaside, South Llanelli	Continue to liaise and cooperate with DCWW in implementing their Rainscape Project.	Completed
Lakeview Terrace, llanelli	Improvements to culvert inlet works & Investigate culvert replacement options.	Completed
Non FRMP Actions		
Trostre Road	Highways Drainage improvements.	Complete
Penyfan and Trostre Road	Penyfan and Trostre Road flood evaluation and business case development.	Complete
Trostre Road, Trostre Industrial Estate, Sandy Road, A484,	CCTV survey.	Complete

5.2.5 Flood Risk Areas

As single actions to address the risk of flooding cannot be applied generically across the Llanelli community, 4 sub-divided areas based on the flood risk and catchments were created. More specific information regarding the risk of flooding within this area can be found in Table 5-11.

5.2.5.1 Sandy Road - 4005-A

Area Description

The Sandy Road area (presented in Figure 5-4), is a residential area to the west of the town centre. Two residential areas are separated by the CCTA college and Ysgol Y Strade (a secondary school). To the west, the Afon Dulais is a main river and flood risk here is managed by NRW. To the east, the Denham Avenue area, the ordinary watercourse is regulated by CCC. Low lying areas around Denham Avenue are also prone to pluvial flooding and there are private surface water systems in this area also.

Flood Defence Works

CCC have undertaken extensive repairs to the culverted watercourse in Denham Avenue and the trash screen at Penywern was upgraded in 2010. CCC have also supported residents in Penywern with the management of the private drainage in that area.

NRW have also historically completed significant work within the lower Dulais catchment to manage flood risk including the addition of banks, walls and overflow channels in place to manage flood flows. A flood warning service has also been implemented within the wider catchment area.

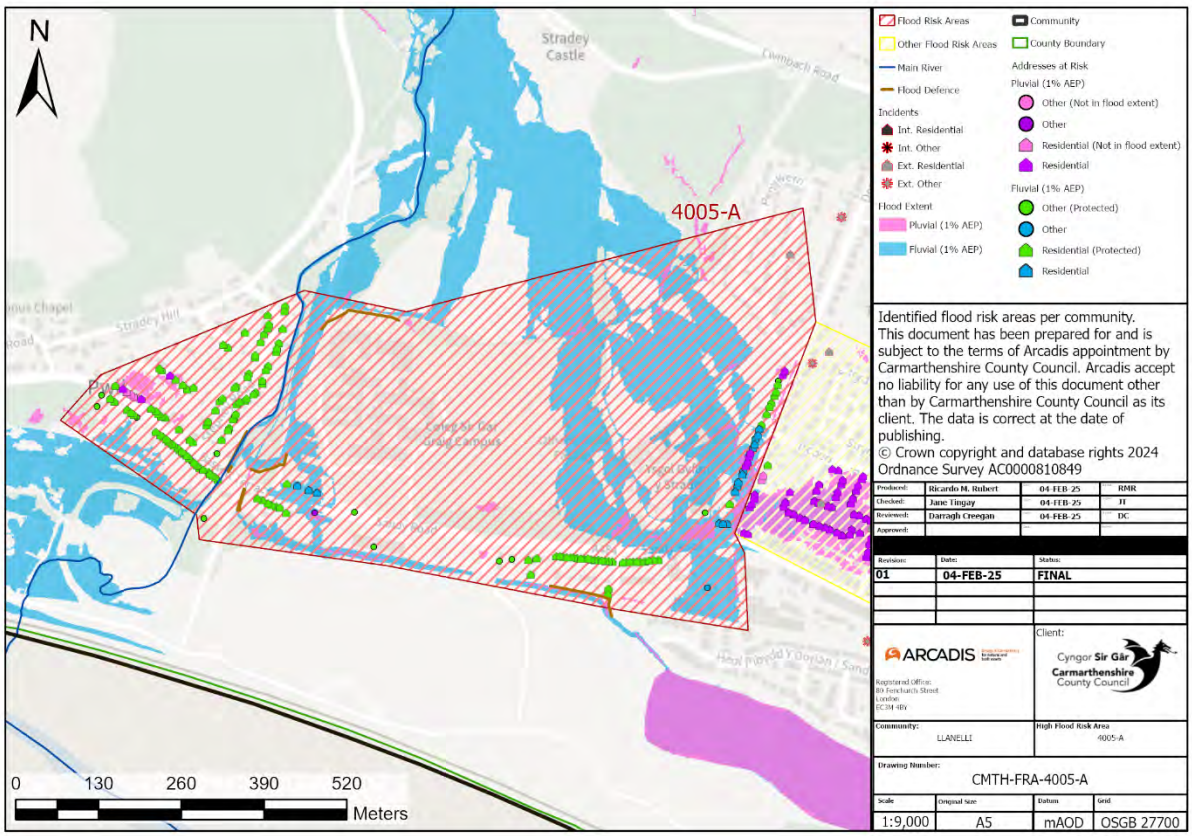

Figure 5-4 Flood Risk Area 4005-A

5.2.5.2 Furnace and the Cille Catchment 4005-B

Area Description

The Furnace and Cille Catchment Area (4005-B) (presented in Figure 5-5) is residential area to the north and west of the town centre. The main hydrological feature

is the Cille Stream which is a main river in part and part ordinary watercourse. The source of the Cille is Furnace Pond (Trebeddrod Reservoir) and the land upstream.

Flood Defence Work

Historically, NRW have completed significant work in the area to manage the risk of flooding. This includes the 1km long Cille bypass culvert that runs down a cycle path which was designed to convey all significant flood flows to the Afon Lliedi. Other capital works undertaken in this area include:

- Assessment of options at Pentrepoeth and bund construction undertaken in 2016.
- Repair works to a section of the Penywern Culvert post collapse in 2017.
- Ongoing flood defence work including a Property Level Protection (PLP) scheme in Heol Buckley.
- Upgrades and repairs at the Trebeddrod Reservoir.
- New trash screen and associated telemetry at the former Stradey Park.

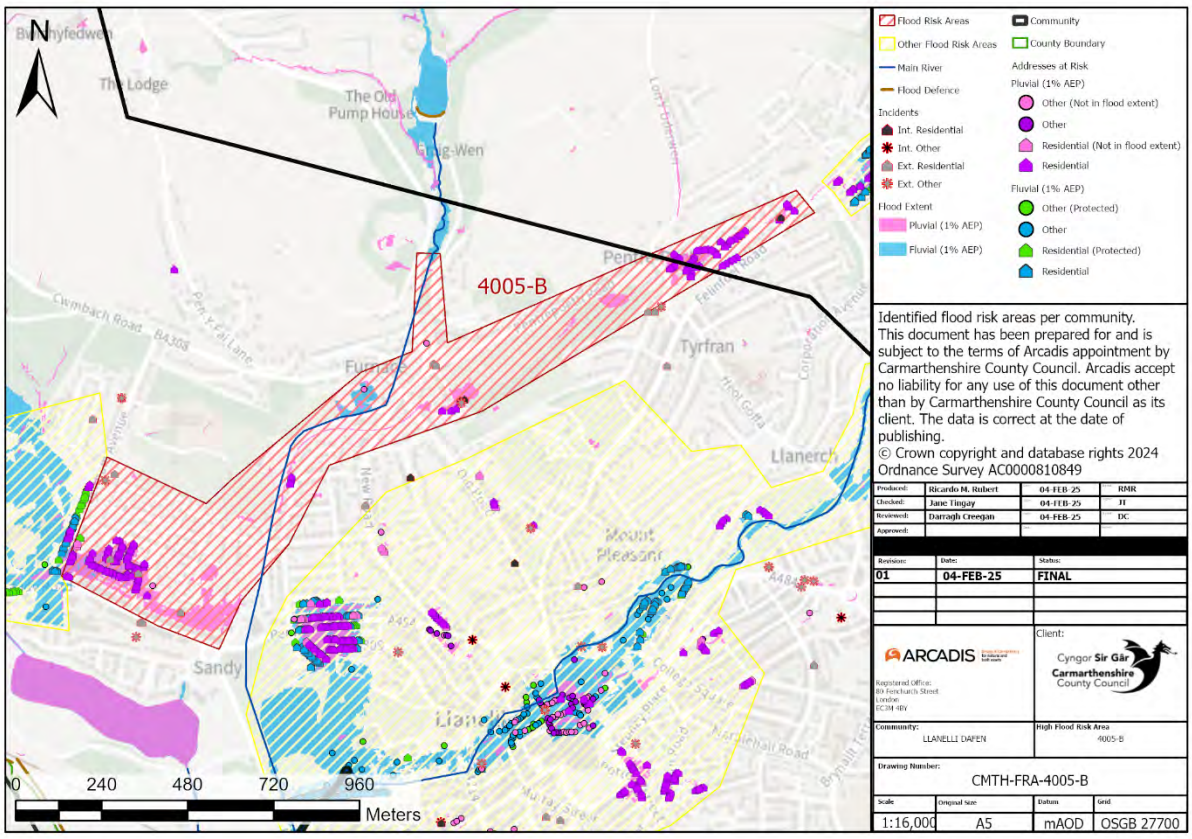

Figure 5-5 Flood Risk Area 4005-B

5.2.5.3 Llanelli Town Centre 4005-C

Area Description

Llanelli Town Centre is located in Area 4005-C (presented in Figure 5-6). The main hydrological feature of area 4005-C is the River Lliedi, which is a main river, a heavily modified river which is conveyed via a concrete channel from north to south. At the Thomas Street and Bridge Street junction, the River Lliedi is culverted for approximately 700 metres under the main town centre, before emerging again in an open channel at Old Castel Road.

Flood Defence Work

The wider Llanelli area has benefited from the DCWW Rainscape project[13] where rainwater is intercepted and as such the speed at which it goes into the sewer network is slowed using a variety of surface water management features such as basins and swales. DCWW have also constructed a surface water sewer down Station Road which will provide opportunities to manage flood risk from the removal of surface water from the combined sewer.

No CCC related flood work has been undertaken within this area as the risk of flooding within this community is predominately managed by DCWW and NRW.

[13] Dŵr Cymru Welsh Water Rainscape Project – Accessible via https://corporate.dwrcymru.com/en/community/environment/our-projects/rainscape/rainscape-llanelli

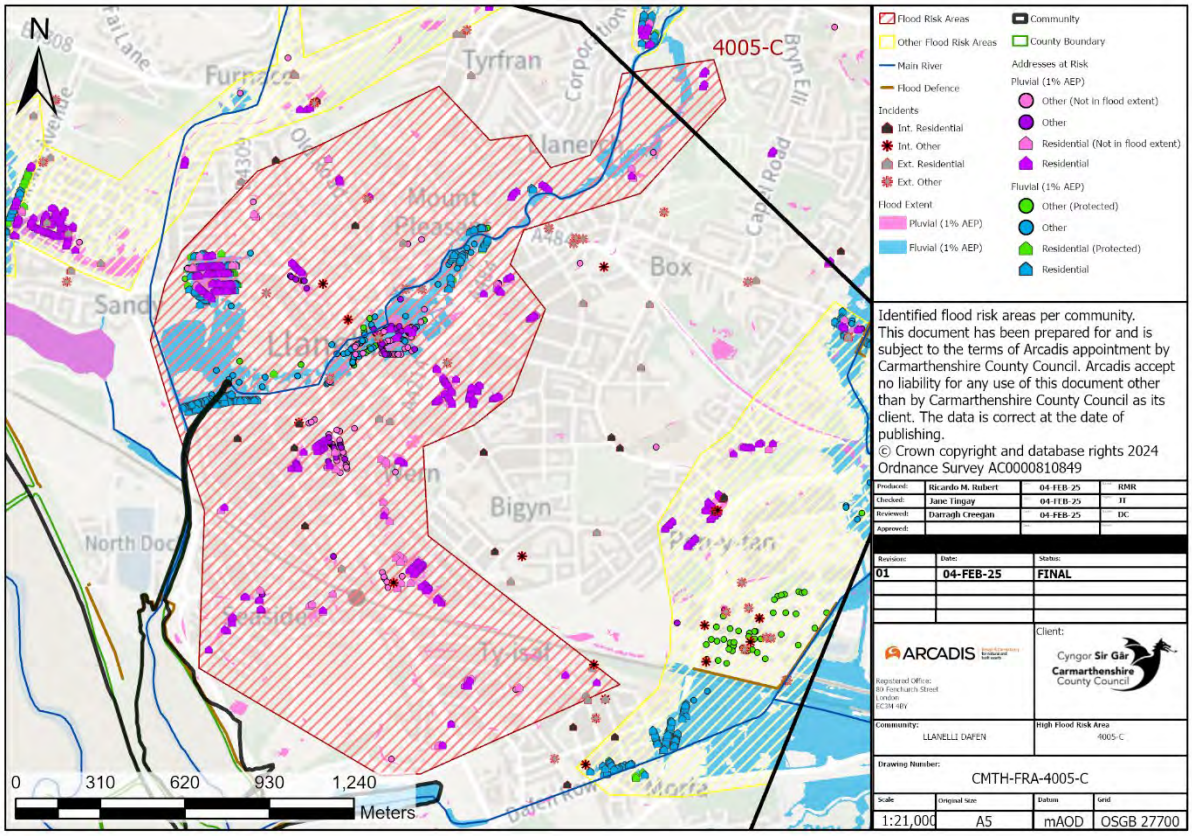

Figure 5-6 Flood Risk Area 4005-C

5.2.5.4 Trostre Industrial Estate 4005-D

Area Description

The area (presented in Figure 5-7) is predominantly the Trostre business and retail area to east of the town centre.

The main controlling hydrological feature is the Afon Dafen, which is a main river. NRW have significant defences and a robust maintenance programme to manage the risk of river flooding. As such, the residual flood risk is this area is predominantly from surface water flooding, when the drains are overwhelmed, back up and surcharge or flood. This is due to high water levels in the Afon Dafen, locking the local drainage systems. A significant flood risk issue is that the river is throttled under the main railway and as a result has elevated river levels upstream of the railways and significant surface water flooding.

Flood Defence Work

Key flood defence works undertaken in this area 4005-D include:

- CCTV of drainage infrastructure.
- Drainage investigation and repairs at Trostre Business Park.
- Highway improvement works on Trostre Road, including drainage improvements in 2012.
- Business Case development for PLP at Penyfan (off Trostre Road) between 2021 and 2023.
- Evaluation of relationship between Delta Lakes levels and flood risk in Trostre.

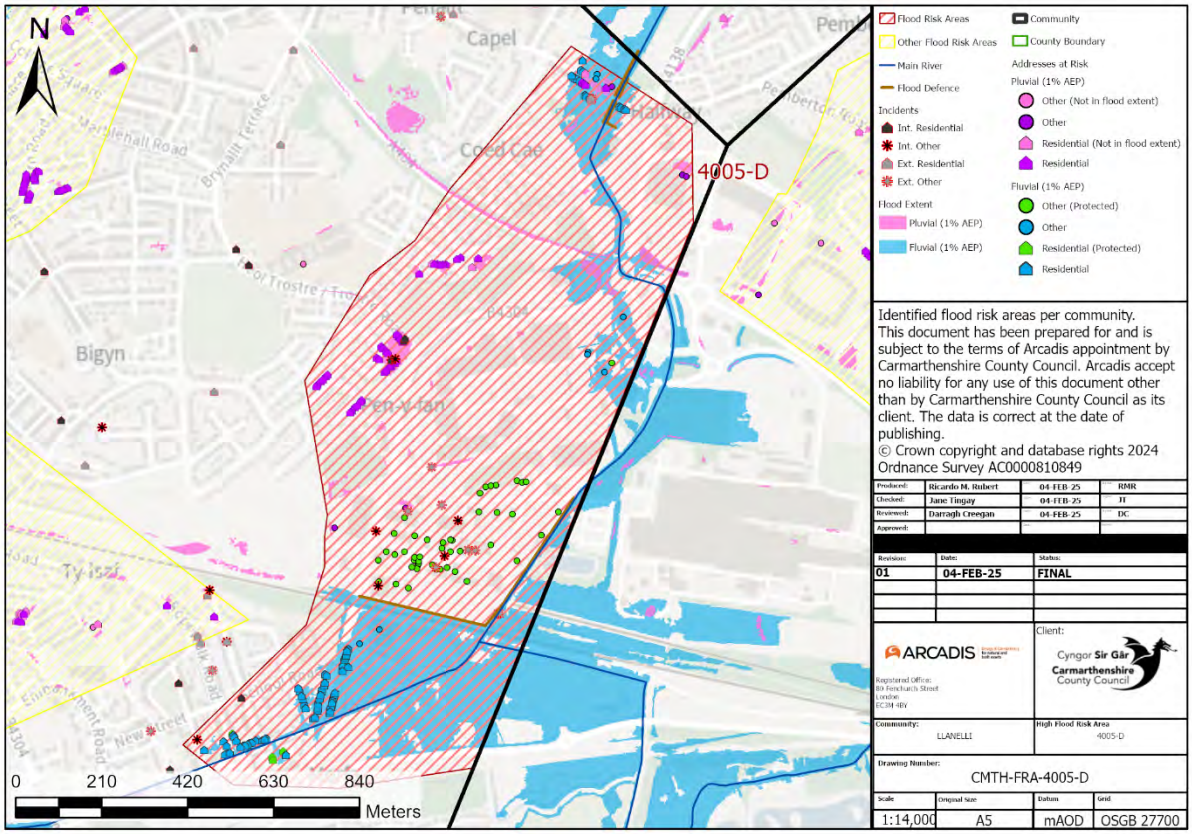

Figure 5-7 Flood Risk Area 4005-D

Table 5-11 Summary of Llanelli Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4005-A	• Penywern trash screen • Penywern private surface water system • Culverted watercourse Penywern (private) and Denham Avenue (highways authority) • KP Tyres Trash Screen • Ysgol Y Stradey Detention Basin • NRW defences • Highways gullies and drainage laterals.	Fluvial: 176 Pluvial: 14	• Residential dwellings • Road A464 • School Ysgol Y Stradey • Local small businesses, bus depot and garages	• Denham Avenue – surface water and ground water flooding • Penywern – surface water flooding from private system • Sandy Road – flooding from Afon Dulais and the NRW flood risk channel – surface water flooding when highway drainage cannot discharge. • Stepney Road, Pwll – nothing recently	• NRW • CCC • CCC Highways team • Education (CCC) • Coleg Sir Gar	• Desired (medium term)
4005-B	• FRM Average to Good • Highways only A Roads 100%	Fluvial: 47 Pluvial: 108	• Major road network East – West A484	• Lakeview terrace	• NRW • Local Landowners	• Desired (long term)
4005-C	• FRM poor • Highways only A Roads 100% • DCWW have the asset data	Fluvial: 390 Pluvial: 449	• Delta Wellbeing Home – Delta Wellbeing • Bus station, train station, police station, fire station, Leisure centre (rest centre) • Major road networks	• No major issues recorded	• DCWW, • CCC Regenerative Team • CCC Ten Towns Initiative	• Desired (medium term)

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
					• CCC Highways/ Parks • NRW • Local Landowners, • Welsh Government,	
4005-D	• Principal assets • CCC, highway drainage infrastructure, Business Park and retail park Infrastructure • NRW – Afon Dafen flood walls • NR – culvert beneath the railway	Fluvial: 163 Pluvial: 51	• Main Railway line • Trostre Business Park and Retail Park • Trostre Road	• Trostre Road • Trostre Business Park • Trostre Retail Park	• NRW • Welsh Government • Network Rail • Local Landowners	• Desired (long term)

5.2.6 Actions Identified

Following the identification of the flood risk areas across the Llaneli community, a list of actions was developed below in Table 5-12 to address, manage and reduce the risks of flooding. The actions identified can be implemented in some or all of Llanelli's FRA.

Table 5-12 Long List of Potential Actions in Llanelli

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated Costs
Community Wide	Asset Management & Maintenance	Prevention	Continue works at Trebeddrod Reservoir.	Ongoing	~~£~~~~£~~~~£~~~~£~~
	Partnership work	Review	Seek WG funding to complete the Penyfan FAS.	Short	~~£~~~~£~~~~£~~
	Asset Management & Maintenance	Preparedness	Sandy Road CCTV.	Medium to long	~~£~~~~£~~
	Flood Forecasting and Emergency Response	Preparedness	Work with residents who have private surface water systems (Penywern).	Medium to long	~~£~~
	Flood Forecasting and Emergency Response	Preparedness	Seek to remove the Dafen Crossing trash screen.	Medium	~~£~~
	Partnership work	Review	Support NRW and NR in driving forward a solution on the river Dafen.	Medium to long	~~£~~
	Partnership work	Review	Work in partnership with CCC Economic Development to ensure that flood risk management measures are incorporated into any town centre initiatives.	Medium to long	~~£~~

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated Costs
	Partnership work	Review	Work in partnership with Economic Development and Property to see if there is funding to manage the flood risk at Trostre Business Park.	Medium to long	£
4005-A	NFM	Prevention	Seek opportunities for NFM techniques in upper catchment which could reduce peak flows and reduce pressure downstream.	Long	£££
	Hard Engineering	Prevention	Increase scale of existing NRW defences to protect at risk properties.	Medium	££££
4005-B	Asset management and maintenance	Protection	Create asset management plans for key assets and carry out regular inspection and maintenance.	Ongoing	£
	NFM	Prevention	Seek opportunities for NFM techniques in upper catchment which could reduce peak flows and reduce pressure downstream.	Long	£££
	Flood Forecasting and Emergency Response	Preparedness	Support NRW in ensuring that all at risk residents are signed up to flood warnings.	Short	£
	Property Flood Resilience	Preparedness	Seek opportunities to promote PFR technologies and techniques to make residents aware of flooding.	Short	£
4005-C	Sustainable and Strategic Development Planning	Prevention	Ensure all new development is compliant with planning policy and that SuDS are implemented to manage runoff at source.	Short	£
	Retro Fit SuDS	Prevention	Seek opportunities to retrofit of SuDS in urban environment to reduce runoff and provide attenuation.	Medium	£££

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated Costs
	Flood Forecasting and Emergency Response	Preparedness	Support NRW in ensuring that all at risk residents are signed up to flood warnings.	Short	£
	Property Flood Resilience	Preparedness	Seek opportunities to promote PFR technologies and techniques to make public aware of flooding.	Short	££
4005-D	Property Flood Resilience	Preparedness	Seek opportunities to promote PFR technologies and techniques to make public aware of flooding.	Short	££
	Hard engineering	Protection	Support NRW in their work to reduce pressure and impact of rail culvert throttle.	Medium	£
	Partnership Work	Review	Work in partnership with NRW and Network Rail to transfer the ownership and responsibility of the River Dafen trash screen or remove accordingly.	Short	£
	Retro Fit SuDS	Prevention	Seek opportunities to retrofit of SuDS in urban environment to reduce runoff and provide attenuation.	Medium	£££
	Natural Flood Management	Prevention	Seek opportunities for NFM techniques in upper catchment that could reduce peak flows and reduce pressure downstream.	Medium	£££

5.3 Llwynhendy - 4667

5.3.1 Community Area Description

Llwynhendy (Figure 5-8) is a village located west of Llanelli town centre in Carmarthenshire. As of 2021, the total population of Llwynhendy was approximately 4,389 people[14].

While the main hydrological feature present within Llwynhendy is the Afon Dafen, the Afon Dafen does not pose a significant flood risk to this community. However, 1 in 23 people are considered to be at risk of pluvial flooding in Llwynhendy.

Predominant land use features in Llanelli include residential areas, local businesses, agricultural land and open spaces. The Llanelli Wetland Centre located in the southernmost region of the Llwynhendy community area is a Site of Special Interest (SSSI), a Special Protection Area (SPA) and a Ramsar site.

Significant infrastructure includes Parc y Scarlets rugby stadium, the Parc Pemberton retail zone, Trostre Steelworks, and transport links such as Bynea railway station as well as trunk roads such as the A484 and the B429.

[14] Llwynhendy Census Data Llwynhendy (Ward, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

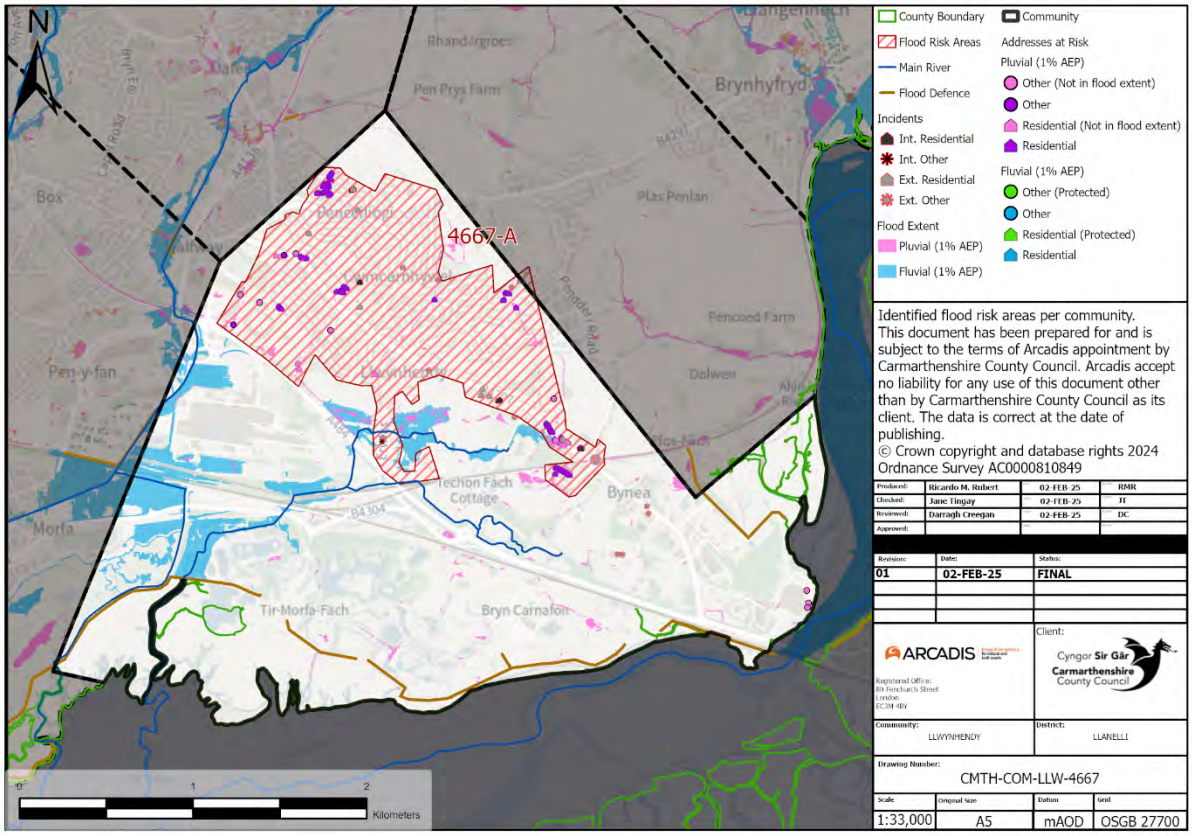

Figure 5-8 Llwynhendy Community Area

5.3.2 Historical Flood Events

Historically, we are not aware of any significant flooding incidents in the Llwynhendy community but we know there have been isolated incidents, such as in Bynea, around the primary school, the square and Cwmfelin Road. This highly urbanised area will be serviced by CCC highways drainage and a DCWW infrastructure, so it is likely that community members will report flooding issues to these partner organisations in addition to the CCC FRM team. DCWW have confirmed that 11 incidents of flooding have been reported to them over the same period. Table 5-13 highlights, between 2018-2024, 42 incidents were reported to the CCC FRM team, which is above average compared to the 28 highest risk communities.

Table 5-13 Historical Flood Events in Llwynhendy

Event (Incident) Type	Number of Occurrences	Incidents reported to partner organisations
External Non-Residential	1	-
External Residential	28	11
Internal Non-Residential	1	-

Event (Incident) Type	Number of Occurrences	Incidents reported to partner organisations
Internal Residential	12	-

5.3.3 Community Area Flood Risk

Data relating to the number of addresses at risk of either fluvial or pluvial flooding across the Llwynhendy community area is presented below in Table 5-14. In this predominately urban residential area, pluvial flooding is the greatest risk. As properties in Llwynhendy are at a greater risk of pluvial flooding, the mitigation of flood risk actions within this community would be led / initiated by CCC.

Table 5-14 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Llwynhendy

Flood Type	Number of Properties at Risk
Pluvial Flooding	84
Fluvial Flooding	0

Receptors including Parc Pemberton retail park and Bynea Railway Station are shown to be at a risk of pluvial flooding. Roads including Lower Trostre road are at risk of fluvial flooding from the New Dafen River. Table 5-15 presents more information regarding receptors present within Llwynhendy that are at risk of flooding.

Table 5-15 Receptors Llwynhendy

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	404	1322
Length of Rail (km)	111	236
Environmental (n)	18	4
Agricultural Land (m^2)	439292	61524
Residential Properties	0	80
Non-residential Properties	0	4
Key Services (n)	0	2
SFCA Additional Sites	1	3
Retail Park	Trostre Park	Pemberton Park, Llanelli
Residential Allocation	0	3
Listed Buildings	0*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

5.3.4 FRM works in the area since FRMP-1

FRM work undertaken in Llwynhendy since the FRMP-1 are presented below in Table 5-16.

Table 5-16 FRM work undertaken in Llwynhendy since CCC FRMP-1.

Specific Area / Policy Unit Area	FRM (FRMP-1) Actions	Progress
Heol Elfed, Llwynhendy, llanelli	2019/20: Identify ownership of surface water system. 2019/20: Carry out CCTV of surface water system. 2019/20: Determine system capacity.	Completed
Pemberton Road, Llwynhendy, llanelli	Liaise with DCWW regarding flood risk and maintenance.	Ongoing

5.3.5 Flood Risk Areas

One flood risk area was identified within Llwynhendy, labelled as 4667-A in Figure 5-9. More specific information regarding the risk of flooding within this area can be found in Table 5-167.

Area Description

The area is known locally as Cefncaeau and extends to Penygraig and into Bynea. It located to the north of the Trostre Steelworks, the A484 largely forms the southern boundary, and the northern boundary includes the largely residential area of Cwmcarrhywel. The central portion of the area is bisected by the B4297 road. The area is predominantly residential and the main source of flooding in the area is from surface water flooding.

Flood Defence Works

Key flood defence works undertaken in Llwynhendy include:

- A Strategic Outline Case and Outline Business Case was complete between 2021 and 2022. The findings confirmed that there was not a sufficient case to move forward.

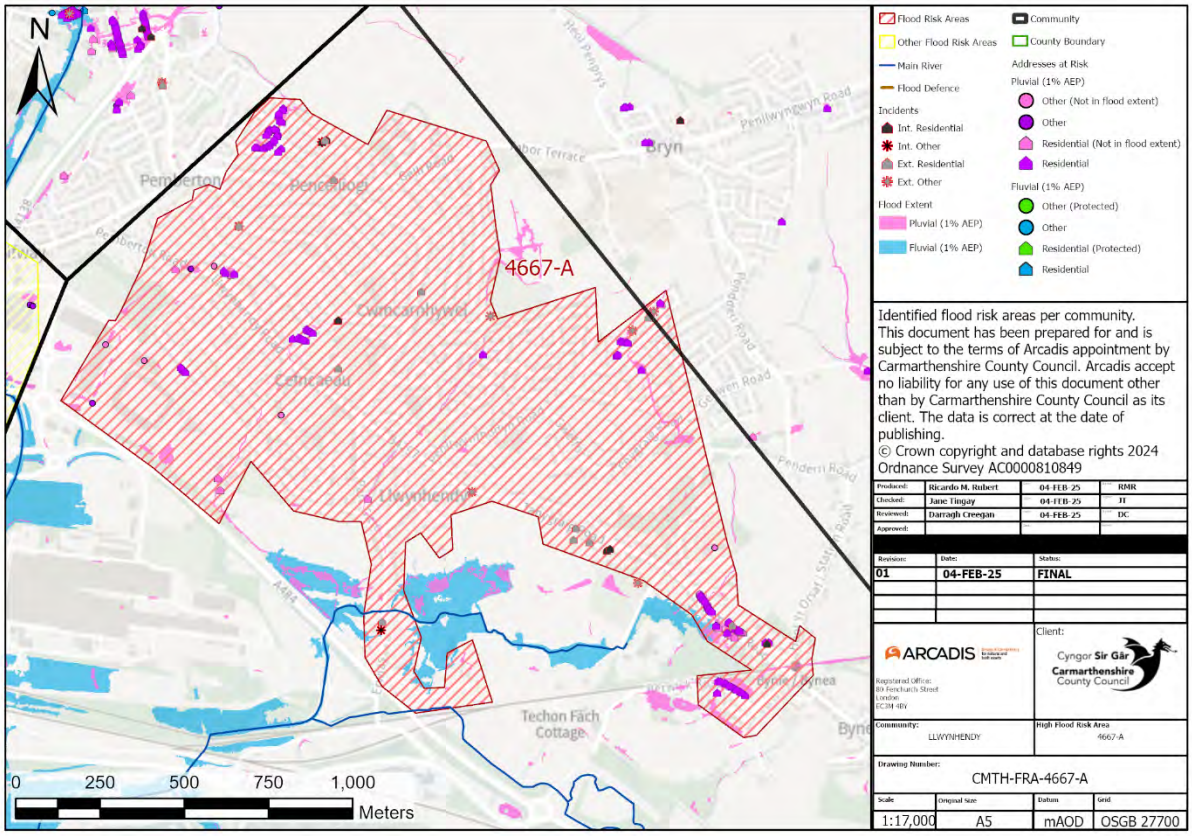

Figure 5-9 Flood Risk Area 4667-A

Table 5-17 Summary of Llwynhendy's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4667-A	• Poor	Fluvial: 1 Pluvial: 102	• Retail Park • Parc Y Scarlets Stadium • Athletic Track • Llywnhendy Library • DCWW Sewage Works • Bynea School • Network Rail Assets • Dyfed Powys Police - Llwynhendy Police Station • Schools (including Ysgol Bryn; Brynsierfel School; Bynea Primary School) • Tata Steel – Trostre • Pemberton Retail	• None known	• DCWW	• Yes (desired long term)

5.3.6 Actions Identified

Following the identification of the flood risk areas across the Llwynhendy community, a list of actions was developed below in Table 5-18 to address, manage and reduce the risks of flooding.

Table 5-18 Long List of Potential Actions in Llwynhendy

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated cost
4667	Retrofit SuDS	Protection	Seek opportunities to retrofit of SuDS in urban environment to reduce runoff and provide attenuation. Properties at Bryn Rhos / Brynawelon could benefit as well as Cwmfelin Road. Large areas of hardstanding at stadium and business park could also benefit from retro fit and be showcased to the public.	Medium	£££
	Asset Management & Maintenance	Prevention	Improve knowledge of assets in this community and create asset management and maintenance schedules. Work with DCWW to investigate surface water and foul sewage linkages.	Ongoing	£

6 Loughor Amman River Basin District

6.1 Ammanford - 4016

6.1.1 Community Area Description

Ammanford is an urbanised town situated in the Loughor Amman RBD, east of Carmarthen (Figure 6-1). As of 2021, the total population of Ammanford was approximately 5,500 people.[15]

The main hydrological features present within Ammanford include the Afon Marlas, the Afon Aman, the River Loughor the Afon Lash. All are designated main rivers. 1 in 7 people are at risk of both fluvial and pluvial flooding in Ammanford.

The northern most areas of Ammanford are more urbanised in contrast to the southern most areas of Ammanford which predominately have rural characteristics. Significant infrastructure includes the Ammanford Recreation Grounds, Ammanford Town Centre as well as transport links such as the Ammanford and Pantyffynnon Railway Stations, the A483 and the A474.

[15] Ammanford Parish https://ammanford.parish.uk/#:~:text=Population,5%2C437%20%282021%29

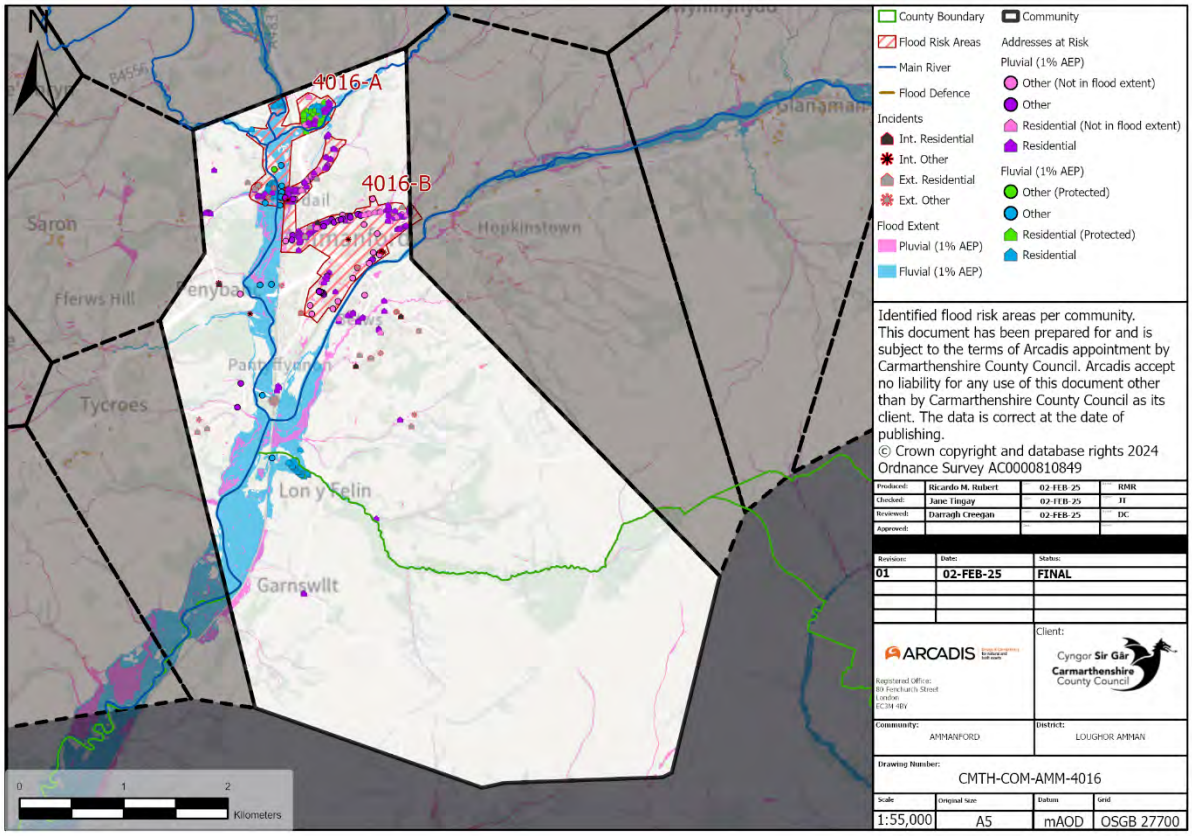

Figure 6-1 Ammanford Community Area

6.1.2 Historical Flood Events

Historically Ammanford has seen significant fluvial flooding events from the Afon Loughor, the Lash, Marlais and river Amman area as far back as the 1970s. In 1979 Station Road and the railway line flooded, in 1998 Coleg Sir Gar and neighbouring properties were affected. 2002 saw flooding in Aberlash Road and there was also flooding in 2009. In term of pluvial flooding, when the main rivers are in flood or spate, the drainage systems that serve the urban areas can become tide locked, which then increases the risk of pluvial flooding.

Table 6-1 below shows that between 2018 and 2024 the CCC FRM team received 44 reports of flooding which is above average reporting over this period. Over the same period, DCWW received 249 reports of flooding.

Table 6-1 Historical flood events recorded in Ammanford

Event Type	Number of Occurrences	Flooding reported to partner organisations
External Non-Residential	3	-

External Residential	26	141
Internal Non-Residential	5	-
Internal Residential	10	8

6.1.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Ammanford community area is presented below in Table 6-2. Properties across Ammanford are at risk of both pluvial and fluvial flooding. NRW will continue to take the lead on managing flood risk from the main rivers including the Loughor and Amman rivers, while CCC will manage the risks of pluvial flooding.

Table 6-2 Total number of addresses at risk of pluvial and fluvial flooding in Ammanford

Flood Type	Number of Properties at Risk
Pluvial Flooding	284
Fluvial Flooding	247

Roads including Bonllwyn Road, Llwyn-y-Bryn and River Way are shown to be at risk of fluvial flooding while Arthur Street, Station Road and Heol y Wyrddol roads are shown to be at a significant risk of pluvial flooding. Table 6-3 presents the number of receptors present within Ammanford that are at risk of flooding.

Table 6-3 Summary of Receptor Counts in Ammanford

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	3462	4962
Length of Rail (km)	1047	368
Environmental (n)	1	2
Agricultural Land (m^2)	1189060	304596
Residential Properties	229	245
Non-residential Properties	18	39
Key Services (n)	1	7
SFCA Additional Sites	0	1
Residential Allocation	0	3
Listed Buildings (n)	17*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

6.1.4 FRM works in the area since FRMP-1

FRM work undertaken in Ammanford since the FRMP-1 are presented below in Table 6-4.

Table 6-4 FRM work undertaken in Ammanford since CCC FRMP-1.

Specific Area (Policy Unit Area)	FRM (FRMP-1) Actions	Progress
Carregamman, Ammanford	Ascertain the path, ownership and responsibility of the surface water system in the Policy Unit. This will be achieved by undertaking CCTV surveys and Land Registry checks.	Completed
Iscennen and Margaret Street, Ammanford	Routine asset management / maintenance	Ongoing
	Undertake CCTV camera surveys and address faults on a risk-based basis.	Completed
Arthur Street, Ammanford	Undertake CCTV camera survey and action any structural or service faults on a risk-based basis	Completed

6.1.5 Flood Risk Areas

As single actions to address the risk of flooding cannot be applied generically across the Ammanford community, two areas based on the flood risk and catchment areas were created. More specific information regarding the risk of flooding within these areas can be found in Table 6-5.

6.1.5.1 4016-A – Tir Y Dail and Gwyn Fryn Estate

Area Description

Area 4016-A (Figure 6-2) is bounded to the east by the A474. Area 4016-A is primarily at risk of fluvial flooding, due to the presence of converging rivers Afon Marlas and Lash on Loughor. Both the Afon Marlas and the Lash converge into the Afon Loughor in Area 4016-A. The Afon Loughor then continues to flow directly through Area 4016-A. The predominant land uses in Area 4016-A are residential and open greenspace.

Flood Defence Works

Due to the nature of the flood risk, this area is predominately managed by NRW. Over the last 10-years plus NRW studies have demonstrated a strong case for change as this area was one of the top communities at risk of flooding from main rivers within west Wales and facing one of the largest increases in flood risk as a result of climate change. Flooding in the area was predicted to cost the UK some £7.9m in today's prices over the next century.

With options to slow flows upstream infeasible, optioneering focused on better containment of flood waters in the river corridor. No single flood defence would be able to meet the project objectives, so a combination of raised defences throughout was adopted as the preferred solution.

The scheme was designed to reduce flood risk up to the 1% AEP event, allowing for the impact of climate change over the scheme's 100-year lifetime; benefiting 349 homes and 37 businesses. This was completed in 2024 through the Ammanford Flood Risk Management scheme[16].

[16] Ammanford Flood Risk Management Scheme (2024). Available at: https://waterprojectsonline.com/case-studies/ammanford-flood-risk-management-2024/#:~:text=The%20scheme%20was%20designed%20to,349%20homes%20and%2037%20businesses. [Accessed February 2025]

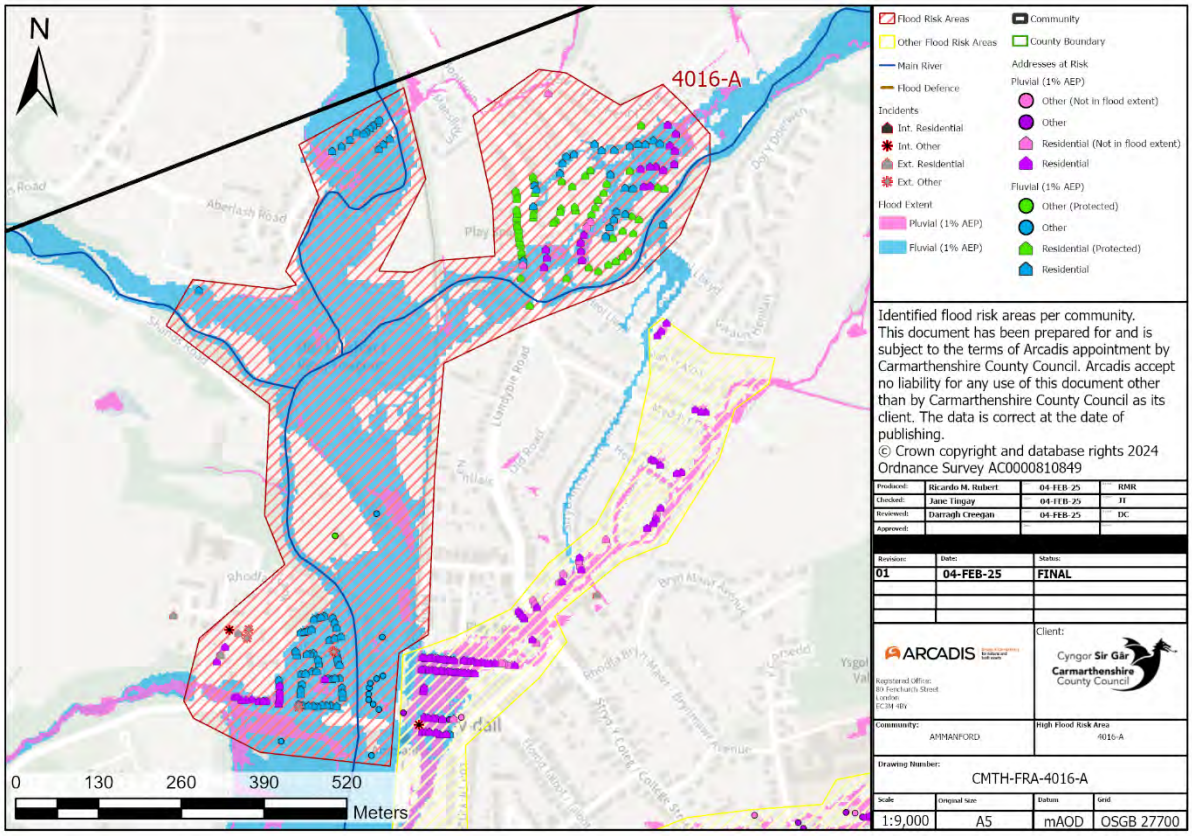

Figure 6-2 Flood Risk Area 4016-A

6.1.5.2 4016-B Ammanford Town Centre

Area Description

Area 4016-B (Figure 6-3) is primarily impacted by pluvial flooding from two unnamed ordinary watercourses that flow off the Black Mountains to the north east and under the town in culvert. Table 6-5 summaries the number of addresses at risk of fluvial and pluvial flooding within the flood risk areas.

Flood Defence Works

Ammanford town centre has been a main focus for CCC flood defence works in recent years. In 2022, with the support of a Welsh Government grant, CCC developed an NFM scheme and a second capital project, focusing on the upgrading of culverts has commenced in 2024.

The inspection and maintenance of FRM assets, namely culverts in Ammanford, has proven to be challenging as many pass through private gardens.

In 2021, in partnership with Ysgol Dyfryn Amman (the local comprehensive school), the FRM team took the opportunity to deliver some lessons on NFM and FRM.

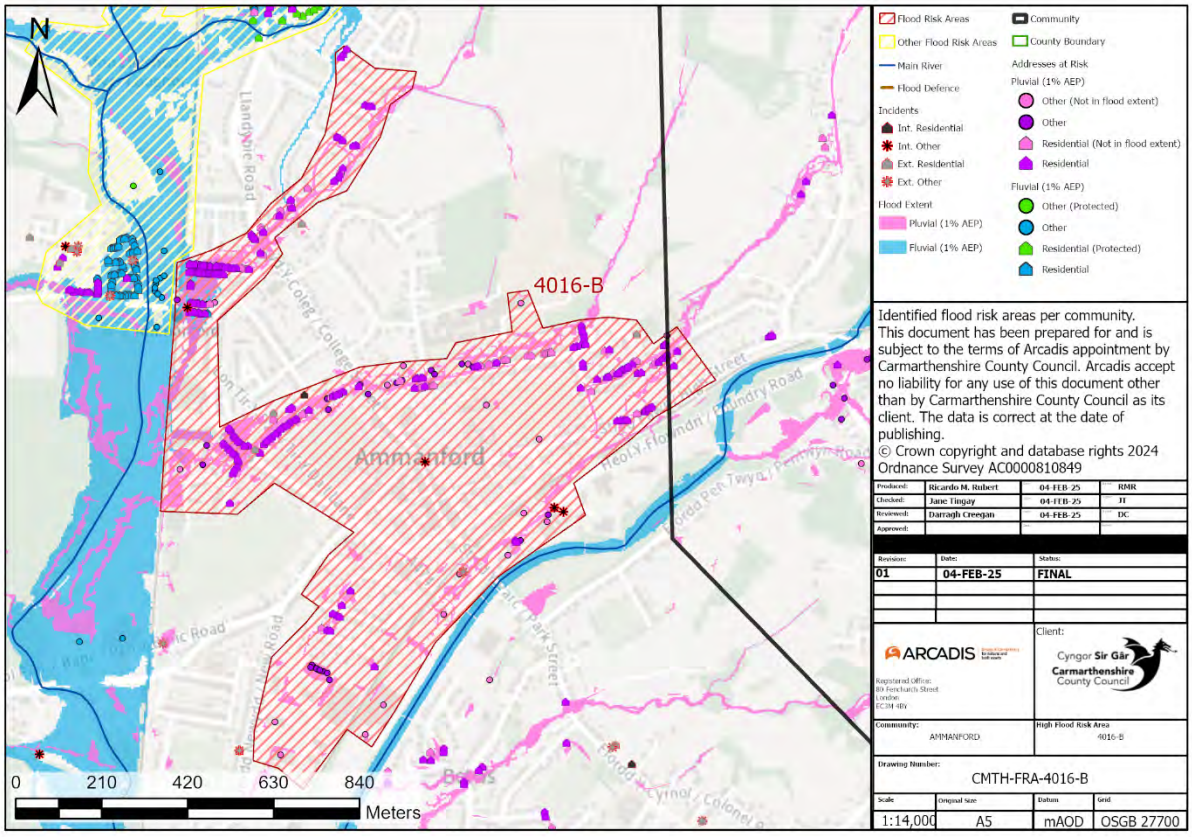

Figure 6-3 Flood Risk Area 4016-B

Table 6-5 Summary of Ammanford's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4016-A	Poor	• Fluvial: 191 • Pluvial: 39	• Main Road (A483) • Ammanford Metal Recycling • Heart of Wales Railway Line • Coleg Sir Gar - Ammanford Campus	• Yes	• NRW • Welsh Government	• Active
4016-B	• Good	• Fluvial: 49 • Pluvial: 277	• Ammanford Railway Station and railway line • Ammanford Bus Station • Main Roads (A474, A483) • Ammanford Social Activities Centre • Meithrinfa Jac-Y-Do Nursery • Ammanford Park and Cricket Club • Schools (Pro Banw Primary School) • Ammanford Fire Station • Ammanford Town Hall • Amman Valley Leisure Centre • Town Centre • Tesco Superstore	• Yes	• DCWW • Highways/Parks • Welsh Government • Local Landowners	• Active

6.1.6 Actions Identified

Following the identification of the flood risk areas across the Ammanford community, actions were developed below in Table 6-6 to address, manage and reduce the risks of flooding.

Table 6-6 Long List of Potential Actions in Ammanford

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated costs
4016-A	Asset Management & Maintenance	Prevention	Work with local residents to establish location of key assets on ordinary watercourses and establish maintenance and monitoring plan.	Ongoing	£
	Property Flood Resilience	Protection	Seek opportunities to empower local residents to improve resilience to flooding through property level resilience measures.	Long	£
4016-B	Retrofit SuDS	Prevention	Seek opportunities to Retrofit SuDS in urban environment to reduce runoff and provide attenuation e.g Margaret Street / Iscennon Road.	Long	£££
	Asset Management & Maintenance	Prevention	Work with local residents to establish location of key assets on ordinary watercourses and establish maintenance and monitoring plan.	Ongoing	£

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated costs
	Property Flood Resilience	Protection	Seek opportunities to empower local residents to improve resilience to flooding through property level resilience measures.	Medium	£££

6.2 Brynamman - 4750

6.2.1 Community Area Description

Brynamman (Figure 6-4) is a village situated on the south side of the Black Mountain, part of the Brecon Beacons National Park in the Loughor Amman RBD. As of 2021, the total population of Brynamman was approximately 2,633 people.[17]

While the main hydrological feature present within Brynamman is the Afon Amman, the Afon Amman does not pose a significant flood risk to this community. There are also various ordinary watercourses present within this community area. While the risk posed by fluvial flooding to people is considered to be low, 1 in 13 people are at risk of pluvial flooding in Brynamman.

Predominant land use features in Brynamman include residential areas, remnants of mining infrastructure, agricultural land, and patches of woodland. Key infrastructure in Brynamman includes schools (such as Brynamman Primary School), community facilities, local shops, healthcare services. The primary transportation is via the highways and the A4069 and A4068.

[17] Brynamman Census Data Brynamman (Carmarthenshire, Wales / Cymru, United Kingdom) - Population Statistics, Charts, Map, Location, Weather and Web Information (citypopulation.de)

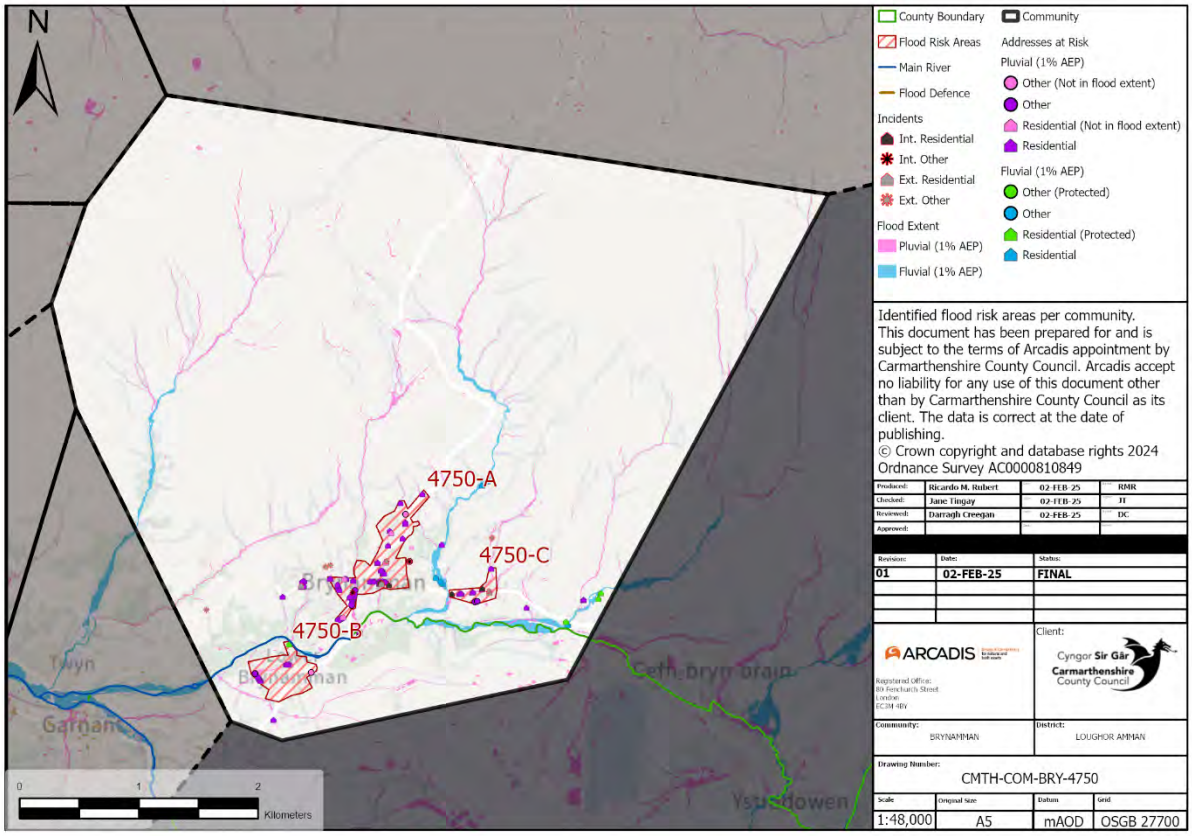

Figure 6-4 Brynamman Community Area

6.2.2 Historical Flood Events

Historically, we are not aware of any significant flooding incidents in the Brynamman community, but we are aware isolated incidents, some of the worst being around Llandeilo Road.

Table 6-7 below highlights, between 2018-2024 23 flooding incidents were reported to the CCC FRM team, which is below average when compared to the 28 highest risk communities.

Historically there has been significant flood events occurring in 1933 in Brynamman. While we understand that there have been many other flooding incidents in Brynamman, reporting is currently poor. Table 6-7 shows that between 2018 and 2020 there have been relatively few reported internal and a relatively high number of external flood incidents.

Table 6-7 Historical Flood Events in Brynamman

Event Type	Number of Occurrences
External Non-Residential	0
External Residential	13
Internal Non-Residential	1
Internal Residential	9

6.2.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Brynamman community area is presented below in Table 6-8. As properties in Brynamman are at a greater risk of pluvial flooding, the mitigation of flood risk will be driven by CCC led actions and initiatives.

Table 6-8 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Brynamman

Flood Type	Number of Properties at Risk
Pluvial Flooding	92
Fluvial Flooding	6

Roads including Hoel Cwmgarw are shown to be at risk of fluvial flooding while Mountain Road, Cwmgarw Road and roads are shown to be at a significant risk of pluvial flooding. Table 6-9 presents the number of receptors present within Brynamman that are at risk of flooding.

Table 6-9 Receptors in Brynamman

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	205	1328
Length of Rail (km)	0	0
Environmental (n)	8	11
Agricultural Land (m^2)	125956	300524
Residential Properties	6	85
Non-residential Properties	0	7
Key Services (n)	0	1
Residential Allocation	0	1
National Park	Bannau Brycheiniog (Brecon Beacons)	
Listed Buildings (n)	3*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

6.2.4 FRM works in the area since FRMP-1

No FRM work has been undertaken in Brynamman since the FRMP-1.

6.2.5 Flood Risk Areas

As single actions to address the risk of flooding cannot be applied generically across the Brynamman community, specific flood risk and catchment areas were created. More specific information regarding the risk of flooding within these areas can be found in Table 6-10.

6.2.5.1 4750-A Brynamman

Area Description

Area 4750-A (Figure 6-5) is a largely urban residential area bisected by the A4069 road. Pluvial flood risk is channelled through the course of the Nant Melyn watercourse, which flows through the southwestern portion of the area. There are also multiple minor watercourses flowing off the mountains to the north and the urban spread has simply culverted these under private dwellings and the highway.

Flood Defence Works

None currently in progress.

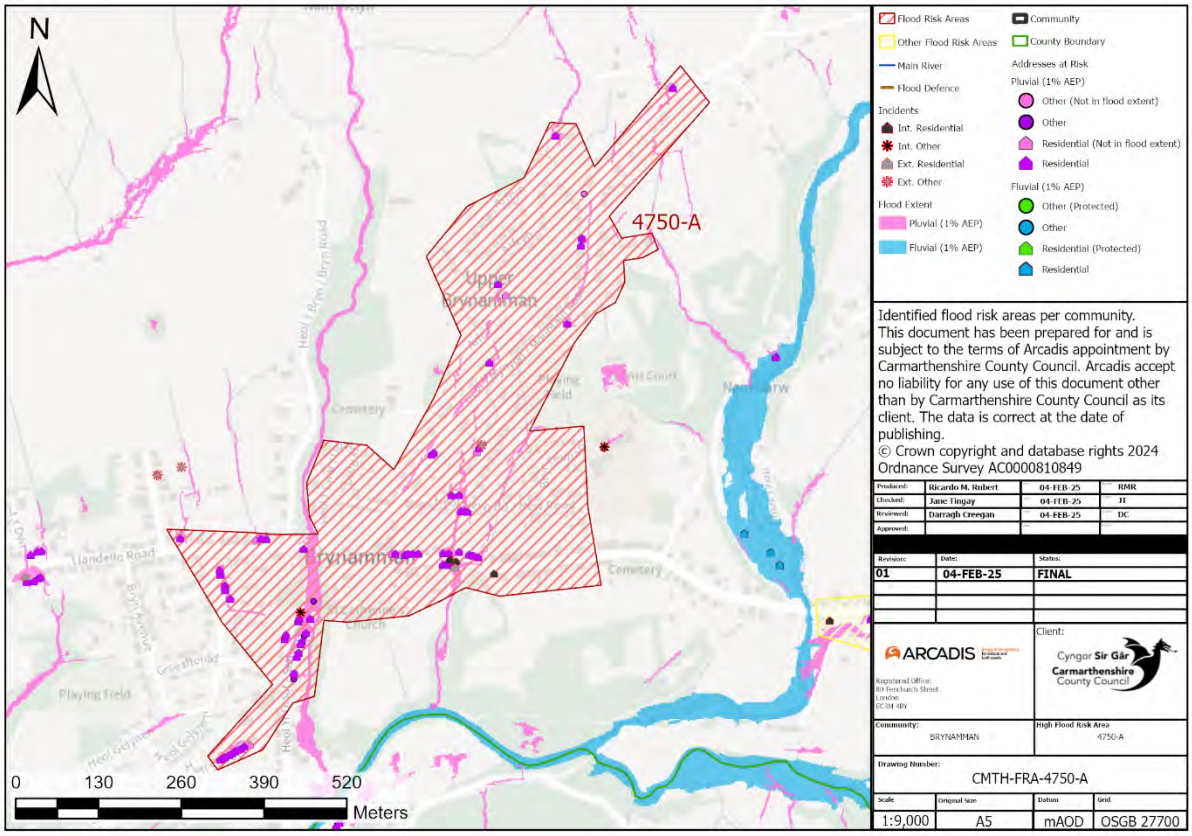

Figure 6-5 Flood Risk Area 4750-A

Table 6-10 Summary of Brynamman's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4750-A	• Poor	• Fluvial: 0 • Pluvial: 68	• Main Roads (A4069, A4069) • Brynaman Public Hall Cinema • Brynamman Post Office • Brynamman Public Hall Cinema	• No known events	• DCWW • NRW • Welsh Government • Local Landowners	• Desired (Long Term)

6.2.6 Actions Identified

Following the identification of the flood risk areas across the Brynamman community, a list of actions was developed below in *Table 6-11* to address, manage and reduce the risks of flooding.

Table 6-11 Long List of Potential Actions in Brynamman

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated costs
4750-A	Retrofit SuDS	Prevention	Seek opportunities to Retrofit SuDS in urban environment to reduce runoff and provide attenuation e.g. Cwmgarw Road, Mountain Road, Station Road.	Medium	£££
	Natural Flood Management	Protection	Seek opportunities for Natural Flood Management techniques such as gully blocking, bunds or leaky dams on slopes upstream of town could intercept and reduce runoff.	Medium	£££
	Asset Management and Maintenance	Protection	Create asset management plans for key assets and carry out regular inspection and maintenance. Work with riparian owners on Station Road to create maintenance plans on ordinary watercourse.	Ongoing	£
	Property Flood Resilience	Protection	Seek opportunities to empower local residents to improve resilience to flooding through property level resilience measures.	Medium	£

6.3 Cross Hands - 4288

6.3.1 Community Area Description

Cross Hands (Figure 6-6) is a village and community situated in the Loughor Amman RBD, in the east of Carmarthenshire. As of 2021, the total population of Cross Hands was approximately 6,338[18]. Several ordinary watercourses, including the Afon Gwili, flow through the community area. 1 in 290 people are at risk of fluvial flooding while 1 in 14 people are at risk of pluvial flooding in Cross Hands.

The area is a mix of residential, industrial and rural, with most of the urbanisation towards the north of the community area. Several A-roads pass through this area, namely the A48 and A376. There are also several listed buildings.

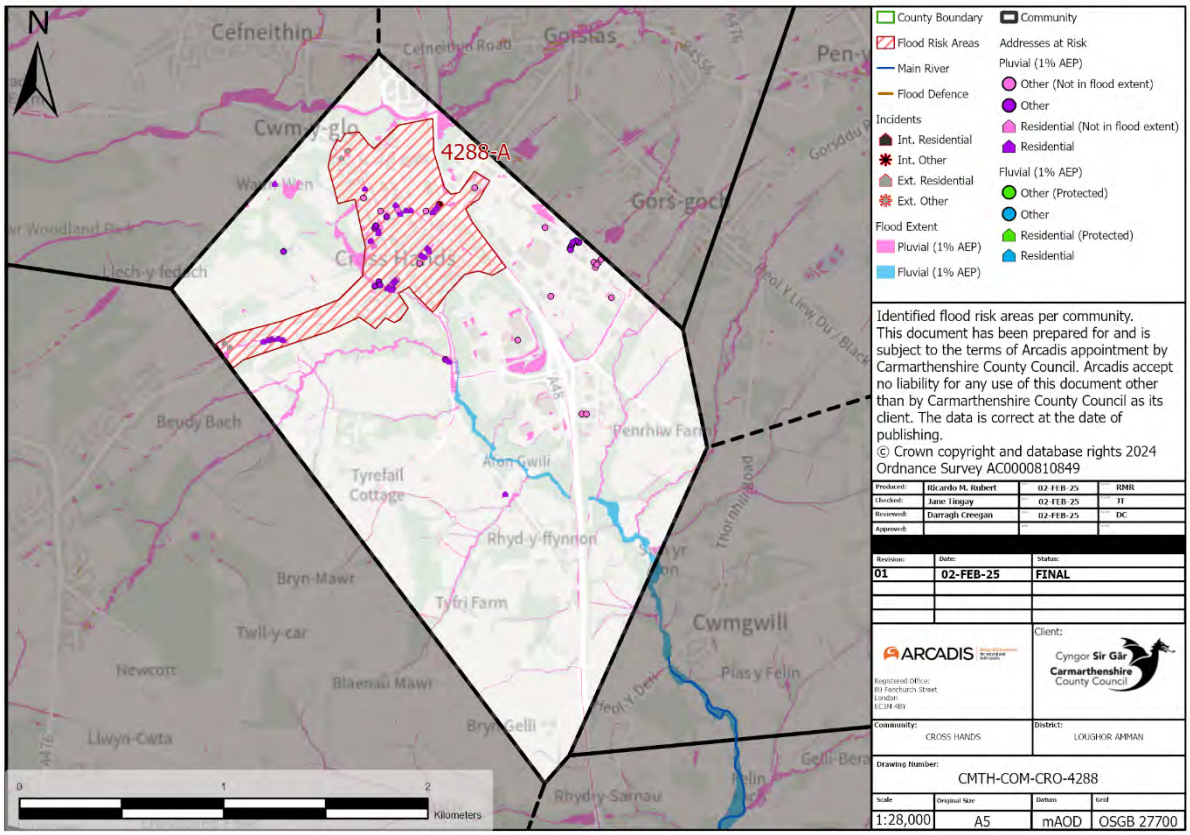

Figure 6-6 Cross Hand Community Area

[18] Cross Hands (Carmarthenshire, Wales / Cymru, United Kingdom) - Population Statistics, Charts, Map, Location, Weather and Web Information (citypopulation.de)

6.3.2 Historical Flood Events

The worst flooding seen in Cross Hands in recent memory was back in the early 2000s when the culvert at the rear of Cefneithin RFC blocked. Water filled Cross Hands Park and overflowed onto the highway and flooded gardens and the highway down to Cross Hands Square.

Table 6-12 below shows that between 2018 and 2024, there have been only 6 incidents of flooding reported to the CCC FRM team. This level of reporting is among the lowest in our high risk, priority communities. DCWW have only two reported incidents over the same period and the Highway Authority a similar number of reported flooding incidents.

Table 6-12 Historical Flood Events in Cross Hands

Event Type	Number of Occurrences	Incidents reported to Partner Organisations
External Non-Residential	0	1
External Residential	2	2
Internal Non-Residential	2	-
Internal Residential	2	-

6.3.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Cross Hands community area is presented below in Table 6-13. As properties in Cross Hands are at a substantially greater risk of pluvial flooding, the mitigation of flood risk will be driven by CCC led actions and initiatives.

Table 6-13 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Cross Hands

Flood Type	Number of Properties at Risk
Pluvial Flooding	70
Fluvial Flooding	0

Receptors including Cross Hands Square Retail units and the larger business park are shown to be at some risk of pluvial flooding. Roads including the A48, Pontardulais Road, Carmarthen Road and Meadows Road are shown to be at risk of pluvial flooding. Table 6-14 presents the number of receptors present within Cross Hands that are at risk of flooding.

Table 6-14 Receptors in Cross Hands

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	14	1533
Length of Rail (km)	0	0
Environmental (n)	0	2
Agricultural Land (m^2)	10760	102464
Residential Properties	0	42
Non-residential Properties	0	28
Key Services (n)	0	2
SFCA Additional Sites	0	4
Retail Park	0	Maes Yr Eithin and Cross Hands
Residential Allocation	0	4
Proposed Employment Area	0	5
Listed Buildings (n)	3*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

6.3.4 FRM works in the area since FRMP-1

No FRM work has was undertaken in Cross Hands since the FRMP-1.

6.3.5 Flood Risk Areas

Area Description

There is one flood risk area identified within Cross Hands, labelled as 4288-A in Figure 6-7. Area 4288-A is located towards the north of the community around Cross Hands Square. Area 4288-A is a mix of residential and commercial space. An ordinary watercourse runs through this flood risk area (partially culverted) but the wider area is serviced by the subterranean highway and surface water sewers. The area is primarily at risk from pluvial flooding. More specific information regarding the risk of flooding within these areas can be found in Table 6-15.

Flood Defence Works

None currently in progress.

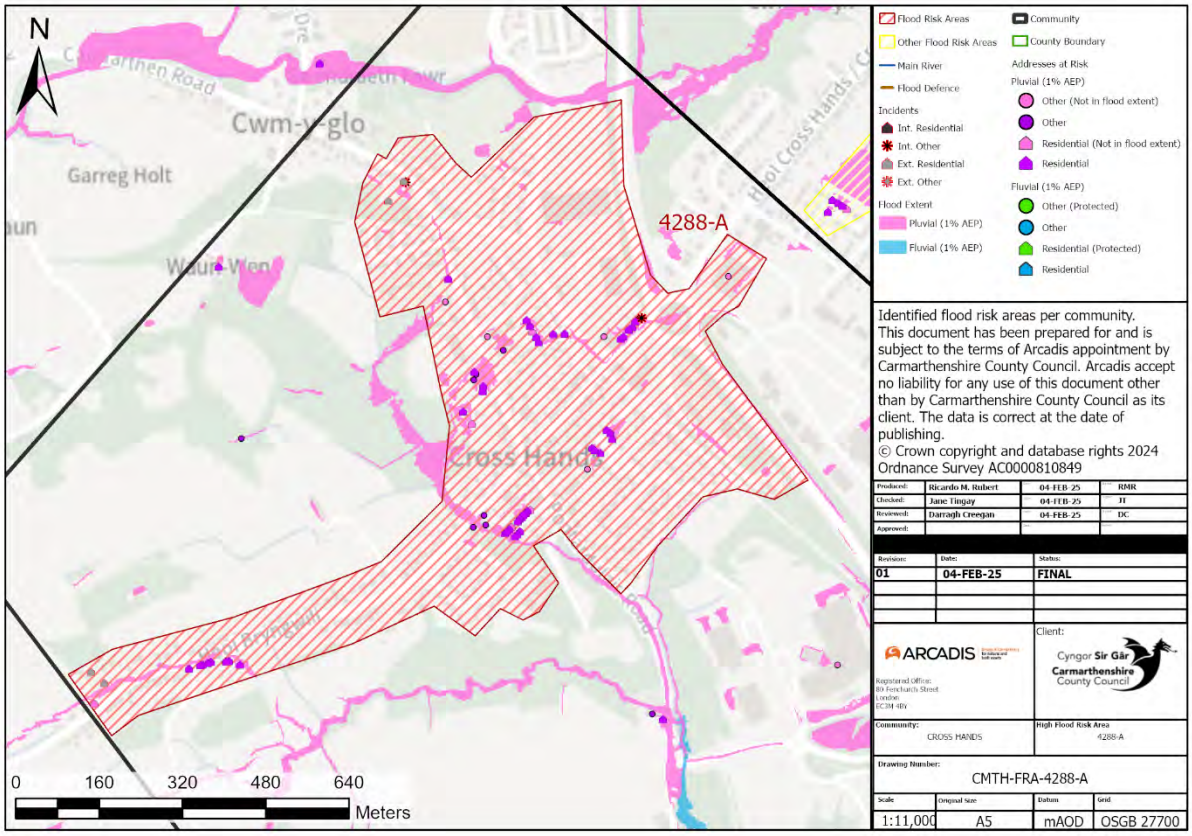

Figure 6-7 Food Risk Area 4288-A

Table 6-15 Summary of Cross Hands's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4288-A	• Poor	• Fluvial: 0 • Pluvial: 60	• Cross Hands C. P. School • Cross Hands Public Hall & Cinema • Maes yr Eithin Retail Park • Crosshands Business Park / industrial estate • Cross Hands Food Park	• No information provided	• DCWW • CCC Highways	• Desired (medium to long term)

6.3.6 Actions Identified

Following the identification of the flood risk areas across the Cross Hands community, a list of actions was developed below in Table 6-16 to address, manage and reduce the risks of flooding.

Table 6-16 Long List of Potential Actions in Cross Hands

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated costs
4288-A	Asset Management and Maintenance	Prevention/ Protection	Improve understanding of CCC drainage assets (including highways). Maintain and update asset database and create asset management plans for key assets (including the major asset in Crosshands Park) and carry out regular inspection and maintenance.	Short	££

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated costs
	Retrofit SuDS	Prevention	Seek opportunities to retrofit of SuDS in urban environment to reduce runoff and provide attenuation.	Medium	£££
	Hard Engineering	Protection	Seek opportunities to increase pipe capacity of existing network, potential re-routing and / or de-culverting.	Medium - long	£££

6.4 Glanamman - 4046

6.4.1 Community Area Description

Glanamman (Figure 6-8) is a village and community situated in the Loughor Amman RBD, in the east of Carmarthenshire. As of 2021, the total population of Glanamman was approximately 3,866.[19]

Glanamman's main hydrological feature is the Afon Amman, a designated main river, which runs at the base of a steep sided valley, in a former coal mining community. 1 in 47 people are at risk of fluvial flooding while 1 in 16 people are at risk of pluvial flooding in Glanamman.

Today, the area is a mix of residential and rural space, with most of the urbanisation around the main road valley road (A474). Within the community area, there are also a few listed buildings and the Amman Valley Hospital.

[19] Glanamman (Carmarthenshire, Wales / Cymru, United Kingdom) - Population Statistics, Charts, Map, Location, Weather and Web Information (citypopulation.de)

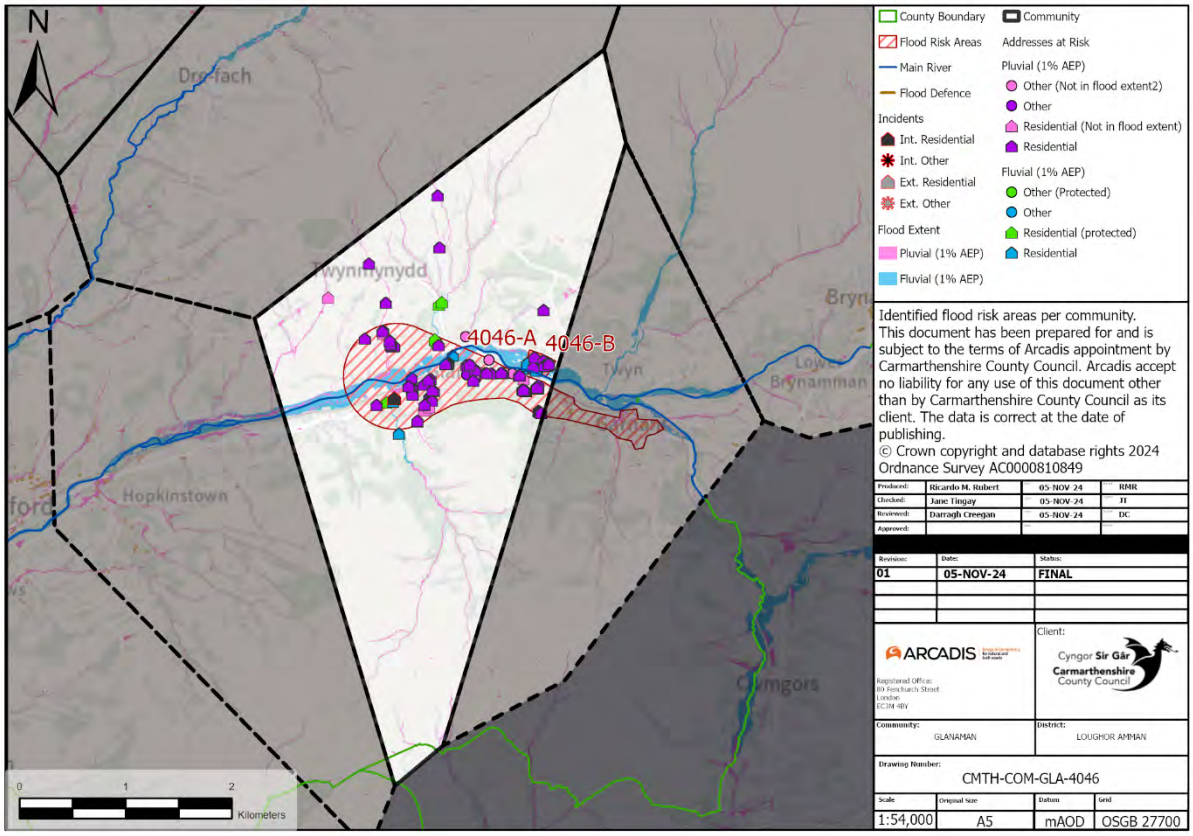

Figure 6-8 Glanamman Community Area

6.4.2 Historical Flood Events

Historically we are not aware of any significant flooding incidents in Glanamman, but we are aware of infrastrucure blockage that have caused flooding issues in areas around New School Road, Bishops Road and more recently Dynevor Road. Dispite being an area of considerable rainfall and high flood risk, risk Table 6-17 highlights that there have been only 6 flooding incidents reported to the CCC FRM team between 2018 and 2024. Of our 28 priority areas, the Glanamman community rank among these worst in terms of reporting flooding issues. NRW manages the flood risk from the River Amman. DCWW has identified flood risk at Station Road, Tabernacle Road, and Tan Y Gelli.

Table 6-17 Historical Flood Events in Glanamman

Event Type	Number of Occurrences
External Non-Residential	0
External Residential	4
Internal Non-Residential	0

Event Type	Number of Occurrences
Internal Residential	2

6.4.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Glanamman community area is presented below in Table 6-18. The property at risk of fluvial flooding will be on their valley floor at risk from the River Amman. The greater number of pluvial properties at risk will be spread across the remaining area.

Table 6-18 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Glanamman

Flood Type	Number of Properties at Risk
Pluvial Flooding	91
Fluvial Flooding	24

Sections of the A474 and Heol Amman are shown to be at risk of fluvial flooding while Penpound Lane, Grenig Road and Station Road are shown to be at a significant risk of pluvial flooding. Table 6-19 presents the number of receptors present within Glanamman that are at risk of flooding.

Table 6-19 Receptors in Glanamman

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	499	2170
Length of Rail (km)	166	414
Environmental (n)	0	1
Agricultural Land (m^2)	97236	149364
Residential Properties	24	83
Non-residential Properties	0	8
Key Services (n)	0	1
Residential Allocation	0	1
National Park	Bannau Brycheiniog / Brecon Beacons	
Listed Buildings (n)	4*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

6.4.4 FRM works in the area since FRMP-1

FRM work undertaken in Glanamman since the FRMP-1 are presented below in Table 6-20.

Table 6-20 FRM work undertaken in Glanamman since CCC FRMP-1.

Specific Area (Policy Unit Area)	FRM (FRMP-1) Actions	Progress
Station Road, Glanamman	Liaise with Network Rail regarding the maintenance of the culverted watercourse.	No progress

6.4.5 Flood Risk Areas

As single actions to address the risk of flooding cannot be applied generically across the Glanamman community, two areas based on their flood risk and catchment areas were created. More specific information regarding the risk of flooding within these areas can be found in Table 6-21.

6.4.5.1 4046-A - Glanamman

Area Description

Area 4046-A (Figure 6-9) is an urban largely residential area at the centre of Glanamman along the A474 road. Properties at risk of pluvial flooding are spread across the area which will be serviced by Highway and combined sewers. There are also a number of culverted watercourses running across the area, channelling water from the high valley sides to the river Amman on the valley floor.

Flood Defence Works

None currently in progress.

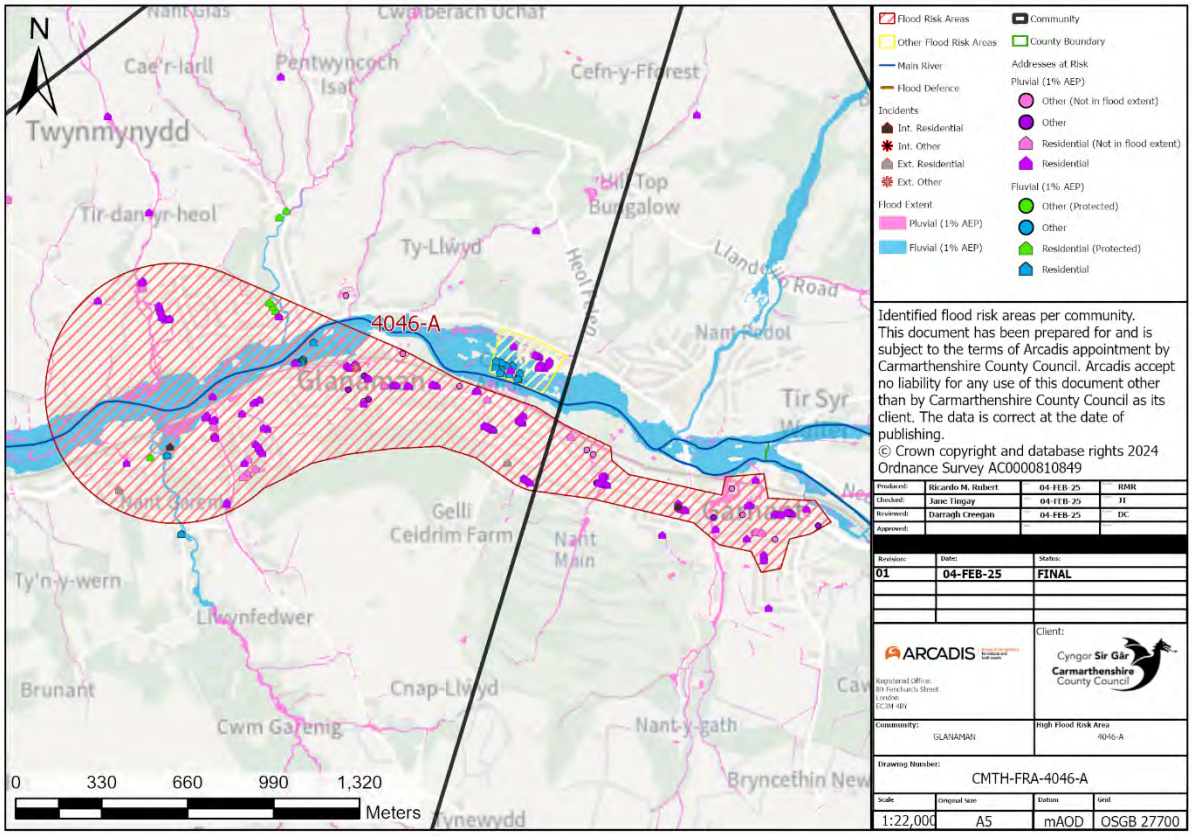

Figure 6-9 Flood Risk Area 4046-A

6.4.5.2 4046-B Tan Y Geli_SA18

Area Description

Area 4046-B (Figure 6-10) is an urban largely residential area at Tan Y Gelli on the north bank of the Afon Amman at Glanamman. The flood risk to this area comes from the Afon Amman watercourse which forms the southern boundary of the area, while properties to the north are at risk from an unnamed ordinary watercourse that is culverted under the highway.

Flood Defence Works

None currently in progress.

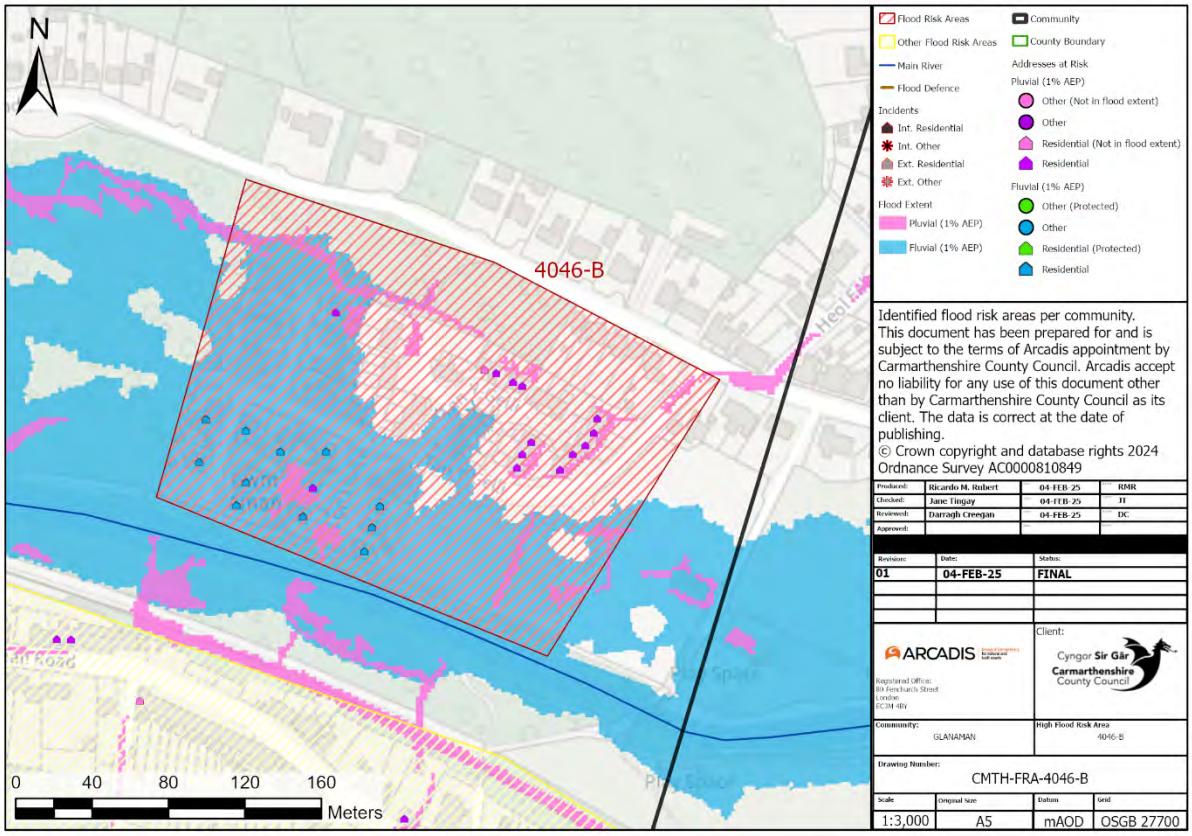

Figure 6-10 Flood Risk Area 4046-B

Table 6-21 Summary of Glanamman's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4046-A	• Poor	• Fluvial: 15 • Pluvial: 139	• Main Road (A474) • Railway Line • Amman Valley Cycleway • Cwmamman Community Centre • Gelli Werdd Recreation Park • Petrol Station • Garnant Post Office	• Yes, minor, asset related	• NRW • Welsh Government • DCWW • Highways Authority	• Active
4046-A	• Poor	• Fluvial:12 • Pluvial: 14	• Dwellings /Residential Area	• Yes, minor, asset related	• Welsh Government • DCWW • Highways Authority	• Active

6.4.6 Actions Identified

Following the identification of the flood risk areas across the Glanamman community, a list of actions was developed below in Table 6-22 to address, manage and reduce the risks of flooding.

Table 6-22 Long List of Potential Actions in Glanamman

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated costs
Community Wide	Asset Management and Maintenance	Prevention	CCTV and development of asset knowledge.	Medium	££
	Asset Management and Maintenance	Prevention	Review of FRM assets and an upgrade programme developed (subject to funding).	Medium	£££
	Partnership Work	Review	Support NRW to manage the risk at Tan Y Gelli.	Medium	£

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated costs
4046-A	Natural Flood Management	Prevention	Seek opportunities for Natural Flood Management techniques such as leaky dams/gully blocking on upper slopes could attenuate and reduce flood flows reaching town.	Medium	£££
	Hard Engineering	Protection	Support NRW if they chose to investigate scope for hard engineering solutions such as barriers and flood walls through urban area adjacent to Afon Amman.	Long	£
	Asset Management and Maintenance	Protection	Build knowledge of CCC assets and create asset management plans for key assets. Carry out regular inspection and maintenance.	Ongoing	£
	Property Flood Resilience	Protection	Seek opportunities to empower residents to take agency over own flood risk by exploring Property Flood Resilience measures.	Short	£

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated costs
4046-B	Hard Engineering	Protection	Support NRW in any evaluation of hard engineering solutions such as barriers and flood walls adjacent to Afon Amman could protect community here.	Long	£
	Property Flood Resilience	Protection	Seek opportunities to empower residents to take agency over own flood risk by exploring Property Flood Resilience measures.	Medium	£

6.5 Llandybie - 4019

6.5.1 Community Area Description

Llandybie (Figure 6-11) is a village and community situated in the Loughor Amman RBD, in the south-east of Carmarthenshire. As of 2021, the total population of Llandybie was approximately 11,706[20].

The Afon Marlas (main river) and the Afon Lash (main river) are the principal hydrological features. In addition, there are several ordinary watercourses flowing through the community area from the Black Mountains to the east and higher land to the west and north. 1 in 42 people are at risk of fluvial flooding while 1 in 38 people are at risk of pluvial flooding in Llandybie.

The area is a mix of residential and rural space. The A483 (trunk road) and B4556 run through the community area. Llandybie railway station and the associated railway line are located in the community area. Within the community area, there are also a number of listed buildings.

[20] Llandybie (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

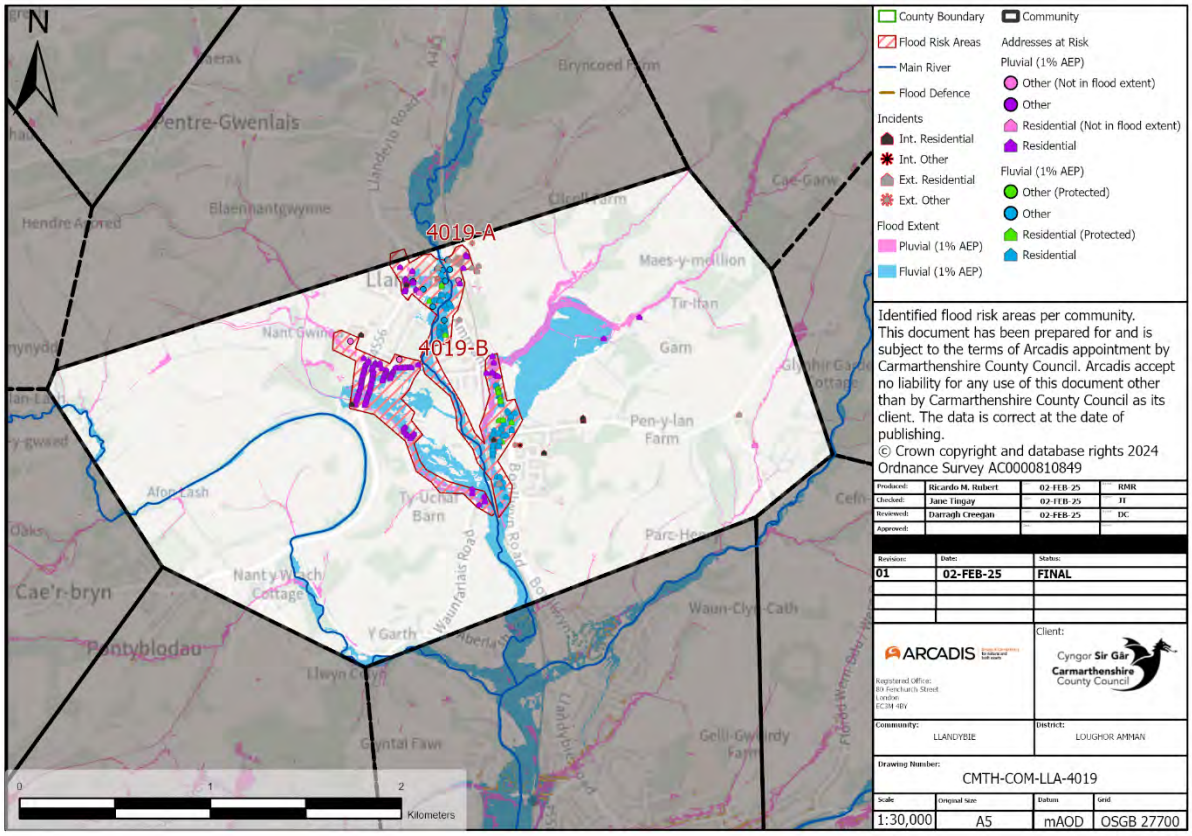

Figure 6-11 Llandybie Community Area

6.5.2 Historical Flood Events

Table 6-23. shows the number of reported flood events, within Llandybie, that have been reported to the CCC FRM team between 2018 and 2024 as only 28. This is below average in terms of reporting, when compared to the other 27 high risk, high priority areas. DCWW and NRW have both confirmed that they had 3 flooding incidents reported to them over the same period.

Table 6-23 Historical Flood Events in Llandybie

Event Type	Number of Occurrences	Incident reported to partner organisations
External Non-Residential	6	-
External Residential	12	6
Internal Non-Residential	0	-
Internal Residential	10	-

6.5.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Llandybie community area is presented below in Table 6-24. As the risk of pluvial and fluvial flooding to properties are both high, the mitigation of flood risk will be collaboratively addressed by CCC and NRW.

Table 6-24 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Llandybie

Flood Type	Number of Properties at Risk
Pluvial Flooding	129
Fluvial Flooding	110

Sections of Church Street, Campbell Road, Heol Fawr, Ammanford Road and Rawlings Road are shown to be at risk of main river flooding. The centre of Llandybie Village on the cross roads is a low spot and is at risk of both pluvial and fluvial flooding. The greatest pluvial (ordinary watercourse) risk is from the Nant Gwinau and properties around Blaenau Road, Woodfield Road, Caercoed and Heol Marlais are at greatest risk. Table 6-25 presents the number of receptors present within Llandybie that are at risk of flooding.

Table 6-25 Receptors in Llandybie

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	1920	906
Length of Rail (km)	6	377
Environmental (n)	0	2
Agricultural Land (m^2)	232572	99764
Residential Properties	85	113
Non-residential Properties	5	3
Key Services (n)	1	0
SFCA Additional Sites	Llandybie Recreation Ground	
Residential Allocation	1	0
Listed Buildings (n)	9*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

6.5.4 FRM works in the area since FRMP-1

There has been no FRM work undertaken in Llandybie since the FRMP-1.

6.5.5 Flood Risk Areas

As single actions to address the risk of flooding cannot be applied generically across the Llandybie community, two areas based on their flood risk and catchment areas were created. More specific information regarding the risk of flooding within these areas can be found in Table 6-26.

6.5.5.1 4019-A Central Llandybie and the Nant Gwyddfan

Area Description

Area 4019-A (Figure 6-12) comprises of two distinct flooding areas. The northern part is an urban residential area towards the centre of Llandybie. The Afon Marlas (main river) flows through the centre of the area and the fluvial flood risk is associated with the channel of the watercourse. The management of this risk should be led by NRW.

Further south, the two branches of the Nant Gwyddfan flow off the western slopes of the Black Mountains and under Ammanford Road and the railway before meeting the Afon Marlais. It is CCC who will lead on the management of flood risk in this area.

Flood Defence Works

Previous bid for funding for flood defence works were submitted to Welsh Government, but this was not successful. No other works currently in progress.

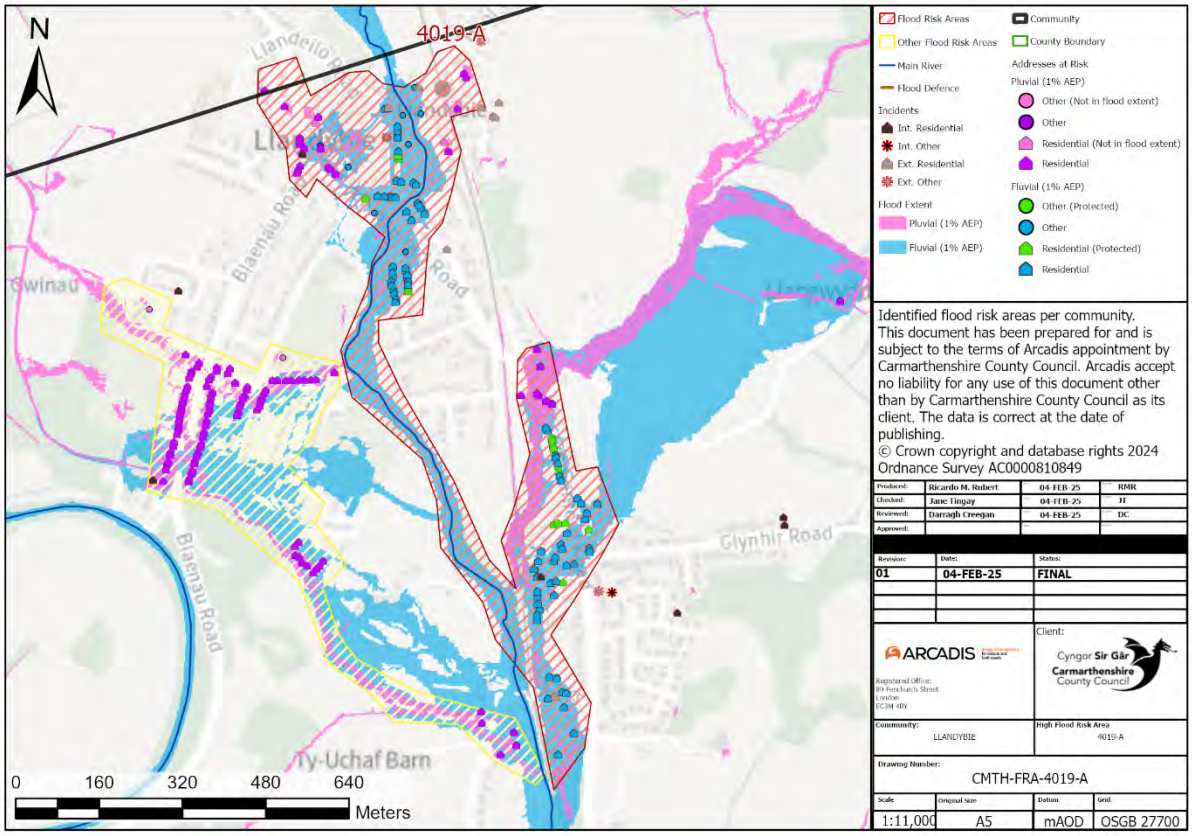

Figure 6-12 Flood Risk Area 4019-A

6.5.5.2 4019-B Woodfield Road

Area Description

Area 4019-B, the Woodfield Road area, (Figure 6-13) is an urban residential area on the west of Llandybie. The Nant Gwinau, an ordinary watercourse, flows to the south and west of the area and while not yet fully understood, the pluvial flood risk is believed to be closely associated with that feature.

Flood Defence Works

Previous bid for funding for flood defence works were submitted but not successful. No other works currently in progress.

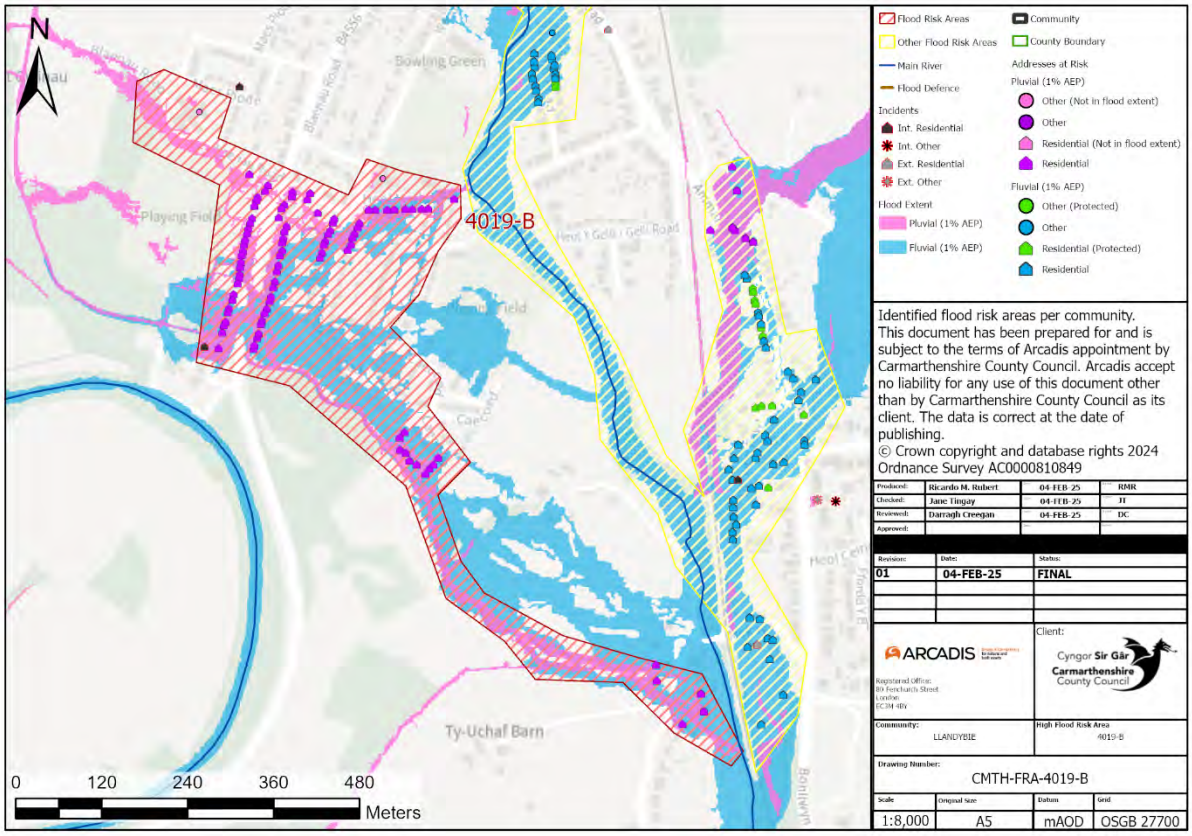

Figure 6-13 Flood Risk Area 4019-B

Table 6-26 Summary of Llandybie's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4019-A	• Poor	• Fluvial: 108 • Pluvial: 31	• Llandybie Railway Station • Main Road (A483) • Llanydbie Social Club	• No information provided	• No information provided	• Desired (medium term)
4019-B	• Poor	• Fluvial: 2 • Pluvial: 95	• Glanmarlais Care Home • Llandybie Recreational Grounds • Roads (B4556)	• No information provided	• DCWW / CCC Highways	• Desired (medium term)

6.5.6 Actions Identified

Following the identification of the flood risk areas across the Llandybie community, a list of actions was developed below in Table 6-27 to address, manage and reduce the risks of flooding.

Table 6-27 Long List of Potential Actions in Llandybie

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated Costs
4019-A	Natural Flood Management	Prevention	Natural Flood Management techniques in upper catchment could reduce peak flows and reduce pressure downstream. Wet woodlands / floodplain reconnection upstream of railway structure may provide storage. Interventions on ordinary watercourses within community boundary may provide benefit to slow the flow.	Medium	£££
	Hard Engineering	Protection	Support NRW if they were to investigate feasibility of hard engineering solutions such as walls or embankments to mitigate risk from Afon Marlas. Creation of flood storage area upstream of town / railway structure could reduce peak flows through the town.	Long	££££
	Improved Flood Mapping and Modelling	Review	Hydraulic modelling and mapping study could improve understanding of flood risk in this area and interaction of different sources of flood risk.	Medium	££

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated Costs
	Property Flood Resilience	Protection	Empower residents to take agency over own flood risk by exploring Property Flood Resilience measures.	Medium	£
4019-B	Natural Flood Management	Prevention	Natural Flood Management techniques on ordinary watercourse upstream of town may provide attenuation and prevent flooding downstream.	Medium	£££
	Retrofit SuDS	Protection	Retrofit of SuDS in urban area could provide attenuation to reduce impact of surface water flood risk.	Medium	£££
	Improved Flood Mapping and Modelling	Review	Hydraulic modelling and mapping study could improve understanding of flood risk in this area and interaction of different sources of flood risk.	Medium	££
	Asset Management and Maintenance	Prevention	Investigation into CCC highways and DCWW assets in urban area to determine if improvements could be made. Asset management plans for key assets to establish maintenance regimes.	Medium	£
	Property Flood Resilience	Protection	Empower residents to take agency over own flood risk by exploring Property Flood Resilience measures.	Short	£

6.6 Llangennech - 4064

6.6.1 Community Area Description

Llangennech (Figure 6-14) is a village and community situated in the Loughor Amman RBD, in the south of Carmarthenshire. As of 2021, the total population of Llangennech was approximately 5,437[21]. The Afon Morlais (main river) and several ordinary watercourses flow through the community area. The area is bounded to the east by the Afon Loughor. Approximately 1 in 15 people are at risk of both fluvial and pluvial flooding. The area is a mix of residential and rural space but with key commercial and industrial areas given its close proximity to the M4 via the A4138. Llangennech railway station and the associated railway line are also key infrastructure in the community area for passenger and freight transport.

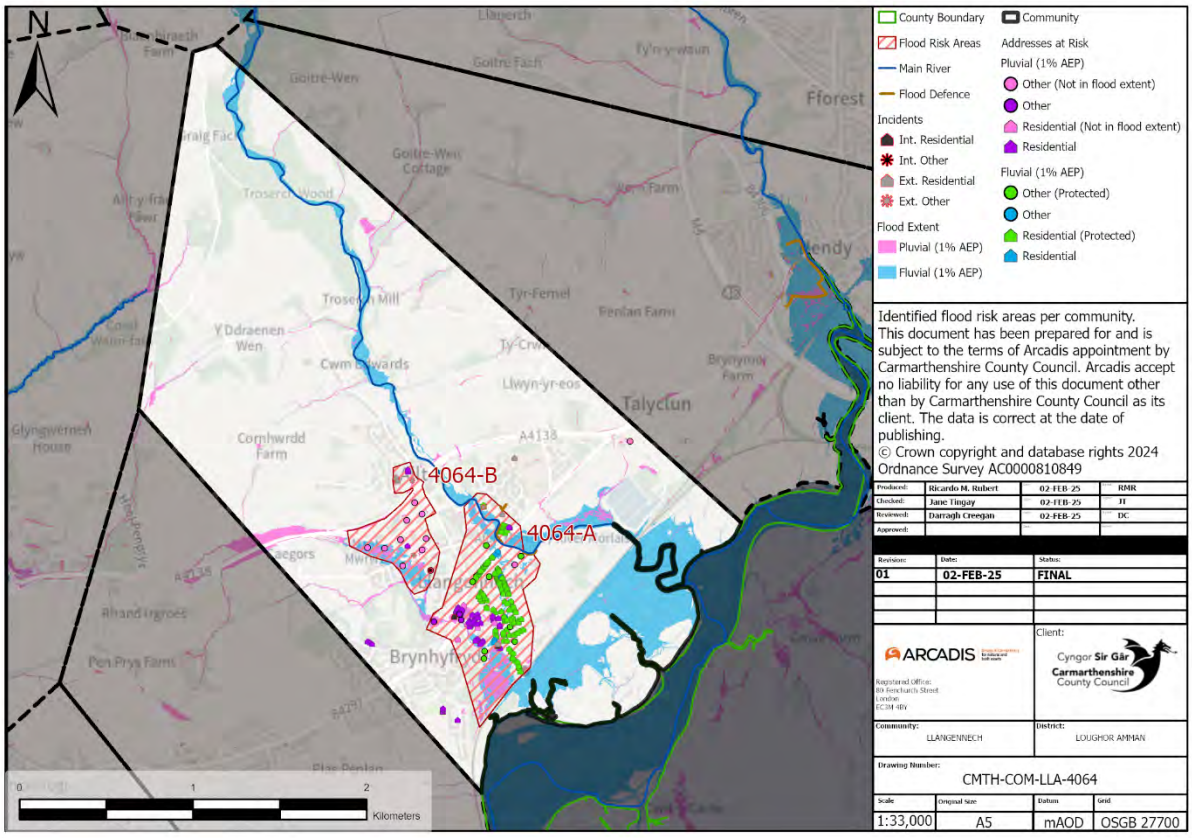

Figure 6-14 Llangennech Community Area

[21] Llangennech (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

6.6.2 Historical Flood Events

There is a history of pluvial and fluvial flooding in Llangennch with the Nant Mwrwg a frequent source of flooding incidents. More recently, in 2010, there was significant pluvial flooding across the local area, including Llangennech. In 2011 a blockage at the Mwrwg railway culvert flooded properties in Station Road. There is also a history of flooding at Bridge Street.

Despite the history of flooding, and the high number of properties at risk, Table 6-28 shows the number of reported flood events is below average when compared to the other high risk, high priority areas. Between 2018 and 2024 only 16 flood risk incidents were report to CCC's FRM team. DCWW have recorded 3 flooding incidents over the same period, the Highways Authority have a single flooding record recorded and NRW have had 4 incidents reported to them.

Table 6-28 Historical Flood Events in Llangennech

Event Type	Number of Occurrences	Flooding incidents reported to partner organisations
External Non-Residential	2	1
External Residential	8	7
Internal Non-Residential	1	-
Internal Residential	5	-

6.6.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Llangennech community area is presented below in Table 6-29. As properties across Llangennech are at a greater risk of fluvial flooding than pluvial flooding, the mitigation of flood risk should be driven by NRW led actions and initiatives.

Table 6-29 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Llangennech

Flood Type	Number of Properties at Risk
Pluvial Flooding	67
Fluvial Flooding	101

Receptors in Llangennech can be divided into the fluvial risk areas along the Afon Morlais including Llanelli Industrial Park, parts of Pontardulais Road, Riverside Industrial Park Maes Road and Station Road. To the west of the town, we have pluvial

risk associated with an ordinary watercourse, the Nant Mwrwg. This is a risk to parts of Stradey Business Park, Heol Mrwrg, Bridge Street, Estuary Park and Station Road. Llangennech Railway Station and roads including Bridge Street, are shown to be at risk of both fluvial and pluvial flooding. Sections of the A4138 are also shown to be at risk of pluvial flooding within this community. Table 6-30 presents the number of receptors present within Llangennech that are at risk of flooding.

Table 6-30 Receptors in Llangennech

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	2509	1533
Length of Rail (km)	1025	0
Environmental (n)	2	2
Agricultural Land (m^2)	781364	70612
Residential Properties	92	54
Non-residential Properties	9	13
Key Services (n)	2	1
SFCA Additional Sites	2	2
Residential Allocation	0	3
Listed Buildings (n)	4*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

6.6.4 FRM works in the area since FRMP-1

FRM work undertaken in Llangennech since the FRMP-1 are presented below in Table 6-31.

Table 6-31 FRM work undertaken in Llangennech since CCC FRMP-1.

Specific Area (Policy Unit Area)	FRM (FRMP-1) Actions	Progress
Llangennech	The Mwrwg Road bypass culvert will be CCTV surveyed and maintenance and repairs actioned accordingly.	Completed

6.6.5 Flood Risk Areas

6.6.5.1 4064-A - Llangennech

Area Description

Area 4046-A (Figure 6-15) is a largely residential urban area with some industrial use to the north of the area, the B4297 bisects the central portion of the site. The Afon Morlais (main river) flows through the north and the Nant Mwrwg flows through the south.

Flood Defence Works

In conjunction with Welsh Government and Consultants, CCC has been investigating flood history and mechanisms in the community. This has involved stakeholder engagement, hydraulic modelling and assessment of flood mitigation options leading to preparation of a Business Case. The scheme is currently at detailed design stage with Property Flood Resilience (PFR) identified as the leading option to take forward.

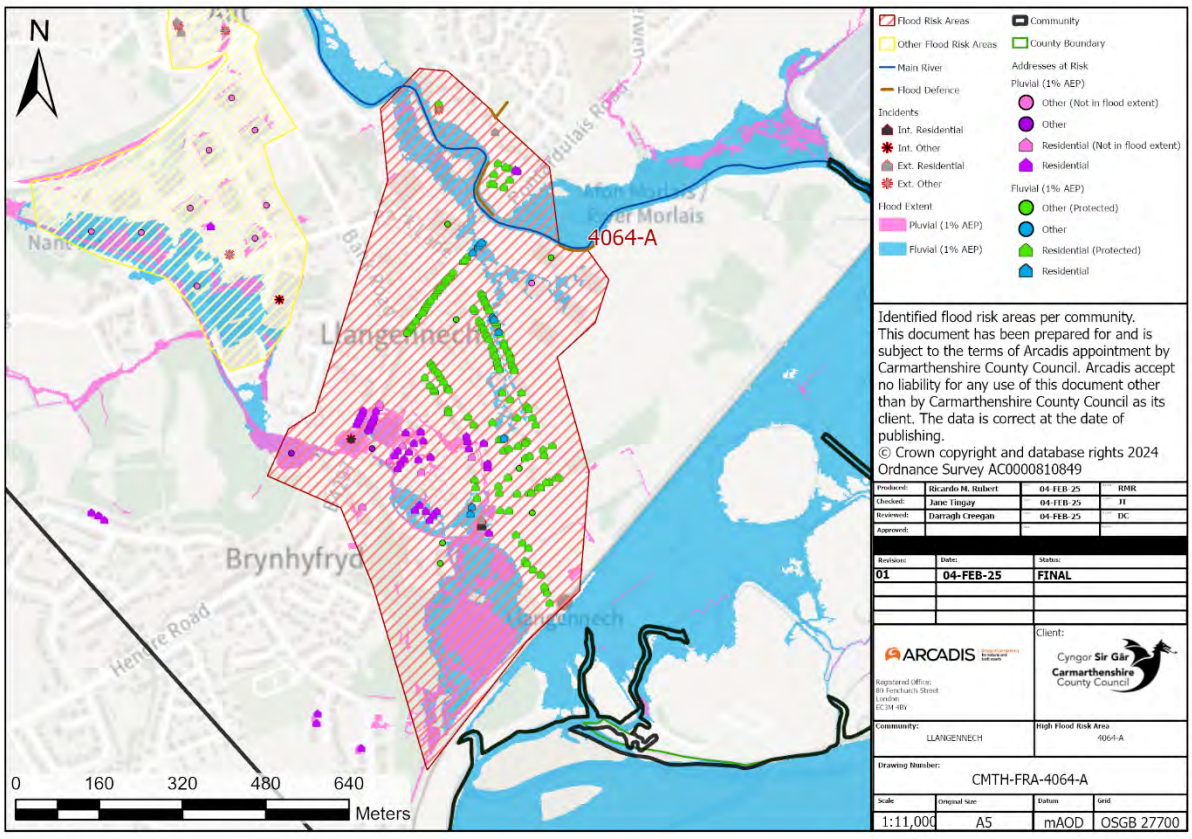

Figure 6-15 Flood Risk Area 4064-A

Table 6-32 Summary of Llangennech's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4064-A	• No information provided	Fluvial: 165 Pluvial: 60	• Llangennech Cricket field • Llanelli Spinal Route • Roads (B4297) • Llangennech Parish Church and Salem Baptist Church • Llangennech Community Centre • Llandaff House Nursing Home • Riverside Industrial Park	• Yes, historically but nothing recently	• Regen • NRW • Local Landowners • Welsh Government, • DCWW	• Done

6.6.6 Actions Identified

Following the identification of the flood risk areas across the Llangennech community, a list of actions was developed below in Table 6-33 to address, manage and reduce the risks of flooding.

Table 6-33 Long List of Potential Actions in Llangennech

Area	Potential Actions	Action Type	Description	Complete / Short / Medium / Long Term	Estimated costs
4064-A	Asset Management and Maintenance	Prevention	Implement the construction stage and RFR associated with the flood evaluation works and business case development over the last 4-years.	Short	£££
	Partnership Work	Review	Support NRW in any works they may take to manage the flood risk from the Afon Morlais.	Long	£££
	Asset Management and Maintenance	Prevention	Asset management plans for key assets to establish maintenance regimes.	Medium	£
	Property Flood Resilience	Protection	Empower residents to take agency over own flood risk by exploring Property Flood Resilience measures.	Short	£

7 Lower Towy River Basin District

7.1 Abergwili - 4038

7.1.1 Community Area Description

Abergwili (Figure 7-1) is a village located outside of Carmarthen on the north bank of the Towy and at the mouth of the Afon Gwili. As of 2021, the total population of Abergwili was 1,564[22].

The main rivers within Abergwili include the River Towy, the Bwlch Stream, the Afon Gwiliand the Abergwili Mill East. The Cwmoernant reservoirs can be found in the far west of the area. They consist of are two cascading reservoirs, that flow culverted down Reservoir Road before discharging onto the River Towy flood plain. The reservoir has a capacity less than 10,000m^3 and should be removed from the NRWs reservoir register due to their low risk.

1 in 87 people are at risk of fluvial flooding while 1 in 51 people are at risk of pluvial flooding in Abergwili. Abergwili is largely rural, with urbanisation localised to Abergwili village which is also home to Carmarthen Museum, Church of Wales Diocesan Office and the start of the Towy valley cycle path. The A40 trunk road runs through Abergwili village in an east-west direction.

[22] Abergwili (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

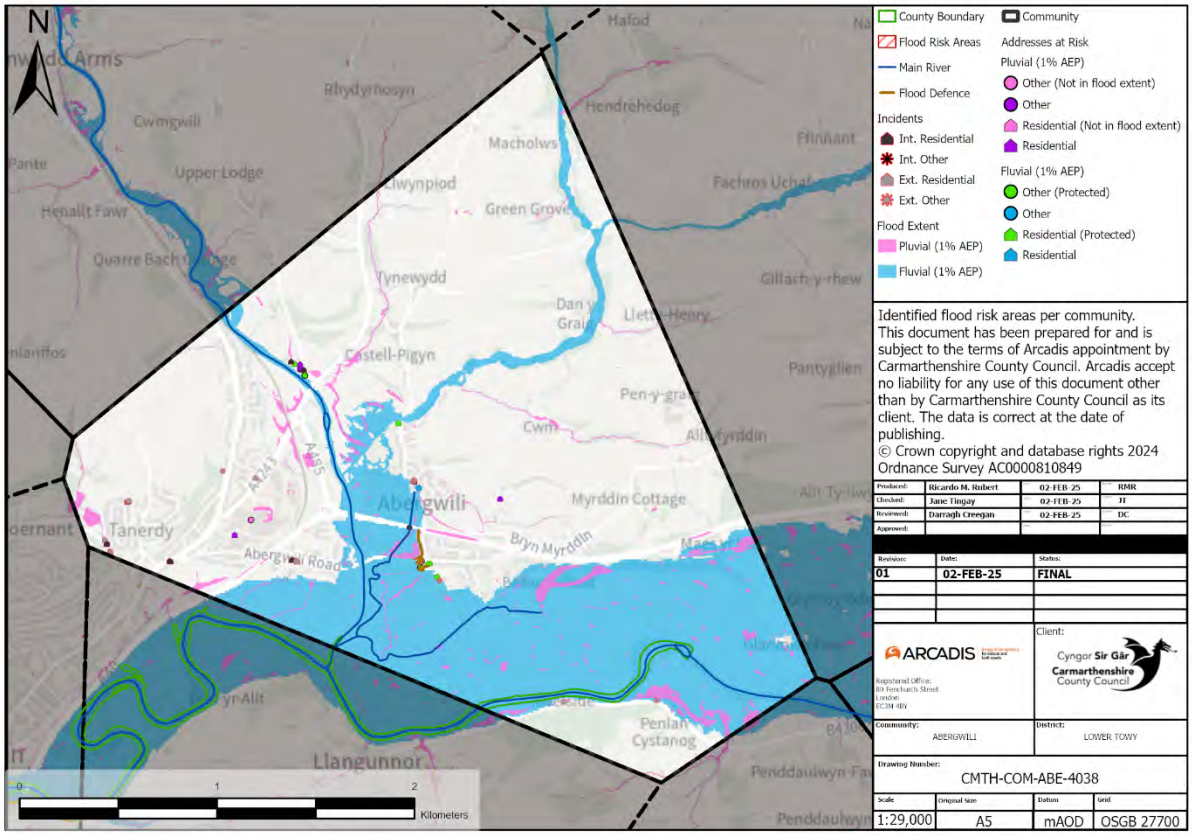

Figure 7-1 Abergwili Community Area

7.1.2 Historical Flood Events

Historically there has been significant flooding in Abergwili particularly in 1987 and 2000. More recently, there has been flooding on Reservoir Road when a private section of a culverted watercourse collapsed and blocked flows. Table 7-1 shows the number of reported flood events, within Abergwili, that have been reported to the CCC FRM team between 2018 and 2024 as 37. This is an average number of reported flood incidents when compared to the other 27 high risk, high priority areas. Given the risks from the main rivers, we would except NRW to field the majority of flood incident reports but they have advised that only 4 incidents have been reported to them.

Table 7-1 Historical Flood Events in Abergwili

Event Type	Number of Occurrences	Flooding incidents reported to partner organisations
External Non-Residential	2	-
External Residential	17	4

Internal Non-Residential	4	-
Internal Residential	14	-

7.1.3 Community Area Flood Risk

Abergwili has NRW flood defences present, protecting the majority of the village from flooding. There is still a risk to a small number of dwellings outside of these defences. Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Abergwili community area is presented below in Table 7-2. 12 of the addresses at risk of pluvial flooding are located near Glangwili General Hospital. As properties outside of the NRW defences are at a substantially greater risk of pluvial flooding, the mitigation of flood risk will be driven by CCC led actions and initiatives.

Table 7-2 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Abergwili

Flood Type	Number of Properties at Risk
Pluvial Flooding	15
Fluvial Flooding	5

As highlighted in FRMP-1, Glangwilli Hospital is shown to be at a risk of pluvial flooding along with other isolated low spots. Small areas of Abergwili Road and Castell Pigyn Road are shown to be at risk of fluvial flooding. Table 7-3 presents the number of receptors present within Abergwili that are at risk of flooding.

Table 7-3 Receptors in Abergwili

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	1607	1419
Length of Rail (km)	0	59
Environmental (n)	3	5
Agricultural Land (m^2)	1928136	146040
Residential Properties	5	5
Non-residential Properties	0	0
Key Services (n)	0	0
Residential Allocation	0	1
Listed Buildings (n)	7*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

7.1.4 FRM works in the area since FRMP-1

FRM work undertaken in Abergwili since the FRMP-1 are presented below in Table 7-4.

Table 7-4 FRM work undertaken in Abergwili since CCC FRMP-1.

Specific Area (Policy Unit Area)	FRM (FRMP-1) Actions	Progress
Abergwili	CCC will continue to investigate incidents of flooding and liaise with NRW with regard to the main river flooding.	Ongoing
Non FRMP-1 works	Assessment of the risk and volumes in Cwmoernant reservoir.	Complete
	Upgraded trash screen below Cwmoernant Reservoir.	Complete
	Annual inspections and maintenance of the reservoir, in line with the requirements of the Reservoirs Act.	Ongoing

7.1.5 Flood Risk Areas

While a specific flood risk area has not been identified for the Abergwili community, key information relating to the risk of flooding across Abergwili is presented in Table 7-5 and the proposed short, medium and long term flood risk management actions are shown in Table 7-6.

Table 7-5 Abergwili Key Information Summary

Flood Risk Area	Flood Defences and Assets Knowledge	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4038	• Poor, however, all A-roads surveyed and reservoir drainage has been surveyed	• Trunk road • Museum • Tywi valley path • Glangwili General Hospital	• Frequent • Broken or blocked pipe on reservoir road cause flooding	• Welsh Government • Trunk Road • NRW	• Aspirational – long term

Flood Risk Area	Flood Defences and Assets Knowledge	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
		• Abergwili Sawmills substation • Church of Wales			

7.1.6 Actions Identified

Following the identification of the flood risk areas across the Abergwili community, a list of actions was developed below in Table 7-6 to address, manage and reduce the risks of flooding.

Table 7-6 Long List of Potential Actions in Abergwili

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated costs
4038	Asset Management and Maintenance	Protection	Support NRW in their management, inspection and maintenance of flood defences (flood gate and embankments) near Lloyds Terrace.	Short	£
	Asset Management and Maintenance	Protection	Management, inspection and maintenance of the reservoir and scheme.	Short	£
	Retrofit SuDS	Prevention	Seek opportunities to retrofit SuDS across hardstanding areas of the hospital.	Medium	£££

7.2 Carmarthen/Caefyrddin - 4017

7.2.1 Community Area Description

Carmarthen (Figure 7-2) is a town situated in the Lower Towy RBD, in the centre of Carmarthenshire. As of 2021, the total population of Carmarthen was approximately 14,636.[23]

Main rivers in Carmarthen include the River Towy and the Tawlen Brook. The River Towy flows through the south-eastern part of Carmarthen, while the Tawlen Brook catchment is located further west in the community. 1 in 200 people are at risk of fluvial flooding while 1 in 24 people are at risk of pluvial flooding in Carmarthen.

The majority of the Camarthen community area is urbanised. There are several A-roads passing through Carmarthen, namely the A40, A484 and the A4242. Carmarthen railway station and associated railway line are also located within the community area.

[23] Carmarthen (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

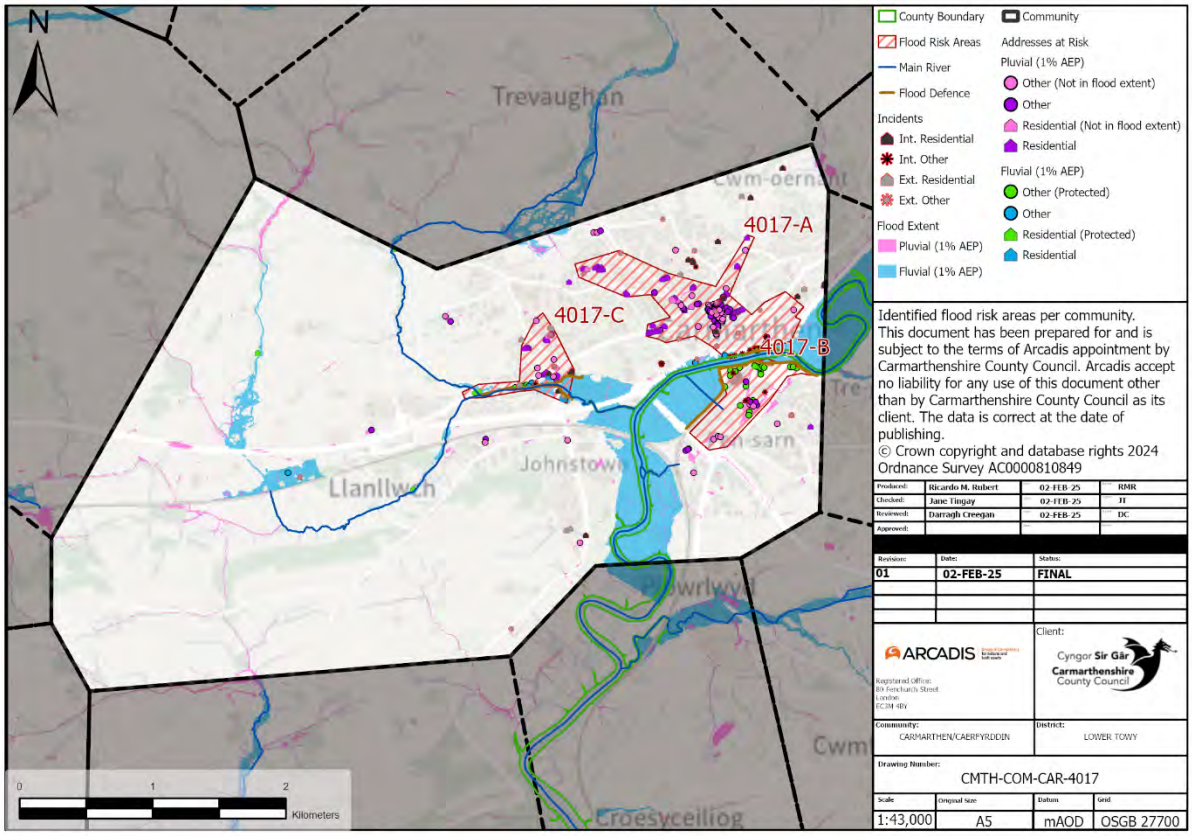

Figure 7-2 Carmarthen Community Area

7.2.2 Historical Flood Events

Carmarthen has a long history of flooding. While NRW flood defences protect residential and commercial areas from fluvial flooding, pluvial flooding is still prevalent and drainage systems become tide locked behind these defences. Most recently in 2018 the NRW defences on the River Towy overtopped and we saw significant flooding in Pensarn and Johnstown. While Johnstown is a more residential area, most other areas at risk of flooding from the Towy are predominately commercial, which is reflected in the statistics in Table 7-7.

Table 7-7 Historical Flood Events in Carmarthen

Event Type	Number of Occurrences
External Non-Residential	10
External Residential	38
Internal Non-Residential	64
Internal Residential	47

7.2.3 Community Area Flood Risk

Despite the relative risk, only 23 properties are at risk of fluvial flooding in the area, which is because there are significant NRW defences in place to protect both banks of the river Towy and the Tawelan Brook.

Given the urban nature of the wider area, pluvial flooding dominates risk with the DCWW combined sewer system and CCC highways drainage systems being the main drainage infrastructure. These systems are underground.

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Carmarthen community area is presented below in Table 7-8. As properties across Carmarthen are at a substantially greater risk of pluvial flooding than fluvial flooding, the mitigation of flood risk will be driven by CCC led actions and initiatives, supported heavily by DCWW.

Table 7-8 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Carmarthen

Flood Type	Number of Properties at Risk
Pluvial Flooding	190
Fluvial Flooding	23

In addition to the high number of residential properties at risk, there is a significant risk to commercial premises and the highways infrastructure at risk within Carmarthen. Given the historical nature of Carmarthen, there are also a high number of listed buildings at risk of flooding.

Sections of St Catherine Street, John Street and Orchards Street near Carmarthen's retail areas are shown to be at risk of pluvial flooding. More recently we have seen frequent pluvial flooding at Old Station Road, Old Llangynnor Road, Pensarn Road, Stephens Ways, Station Approach and Old Llansteffan Road. Areas at fluvial flood risk are well known and include the Quay, the A4242 and Pensarn Retail Park (Pensarn Road and Old Llangynnor Road). Table 7-9 presents the number of receptors present within Carmarthen that are at risk of flooding.

Table 7-9 Receptors in Carmarthen/Caefyrddin

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	2923	4311
Length of Rail (km)	235	10

Receptor	Fluvial Risk	Pluvial Risk
Environmental (n)	7	6
Agricultural Land (m^2)	703188	132856
Residential Properties	6	102
Non-residential Properties	17	88
Key Services (n)	2	3
Strategic Site	0	Yr Egin
SFA Additional Sites	2	3
Retail Park	0	Stephens Way and Pensarn Park
Residential Allocation	1	1
Mixed Use	1	1
Listed Buildings (n)	303*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

7.2.4 FRM works in the area since FRMP-1

FRM work undertaken in Carmarthen since the FRMP-1 are presented below in Table 7-10.

Table 7-10 FRM work undertaken in Carmarthen since CCC FRMP-1.

Specific Area (Policy Unit Area)	FRM (FRMP-1) Actions	Progress
Llansteffan Road, Carmarthen	Liaise with DCWW regarding maintenance of the public surface water system	Complete

A 2020 business case developed by CCC, which sought to gain Welsh Government funding to manage the surface water flood risk to Pensarn, concluded that any interventions in this area were cost prohibitive. NRW's current position pertaining to the Pensarn flood walls is ongoing and the defences will not be upgraded to meet any increased risk from the River Towy.

Post the flooding that occurrent during Storm Callum in 2018, there are a number of processes that are enacted during extreme weather events to help manage the risk in the Carmarthen area.

7.2.5 Flood Risk Areas

As single actions to address the risk of flooding cannot be applied generically across the Carmarthen community, 3 sub-divided areas based on the flood risk and catchments were created. More specific information regarding the risk of flooding within these areas can be found in Table 7-11.

7.2.5.1 4017-A Carmarthen Town Centre

Area Description

4017-A (Figure 7-3) is a primarily urbanised area located on the north bank of the river Towy. This area is the main shopping centre for the town and is where many businesses operate from. This area also welcomes many tourists annually who come to see the castle and other historical features of the town.

Flood Defence Works

None currently in progress.

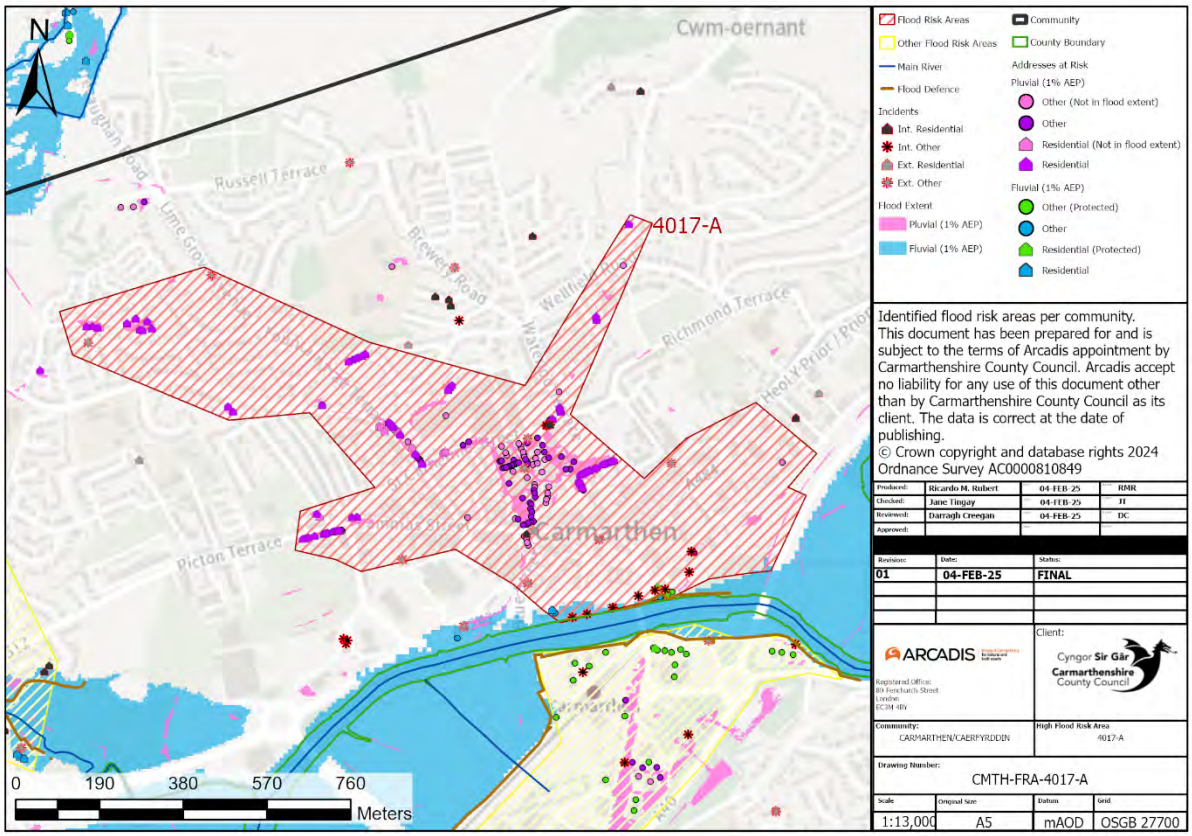

Figure 7-3 Flood Risk Area 4017-A

7.2.5.2 4017-B Pensarn Retail Park

Area Description

The Pensarn (Area 4017-B; Figure 7-4) is predominately a commercial area with Carmarthenshire train station as a focal point. It is a low lying area that has developed despite its flood risk. While the area does benefit from an NRW flood wall and a CCC surface water pumping station, there are annual flood events and in 2018 and 2020, significant flooding affected the area.

Flood Defence Works

NRW's current position is ongoing and the defences will not be upgraded to meet any increased risk from the River Towy.

A 2020 business case developed by CCC, which sought to gain Welsh Government funding to manage the surface water flood risk concluded that any interventions in this area were cost prohibitive.

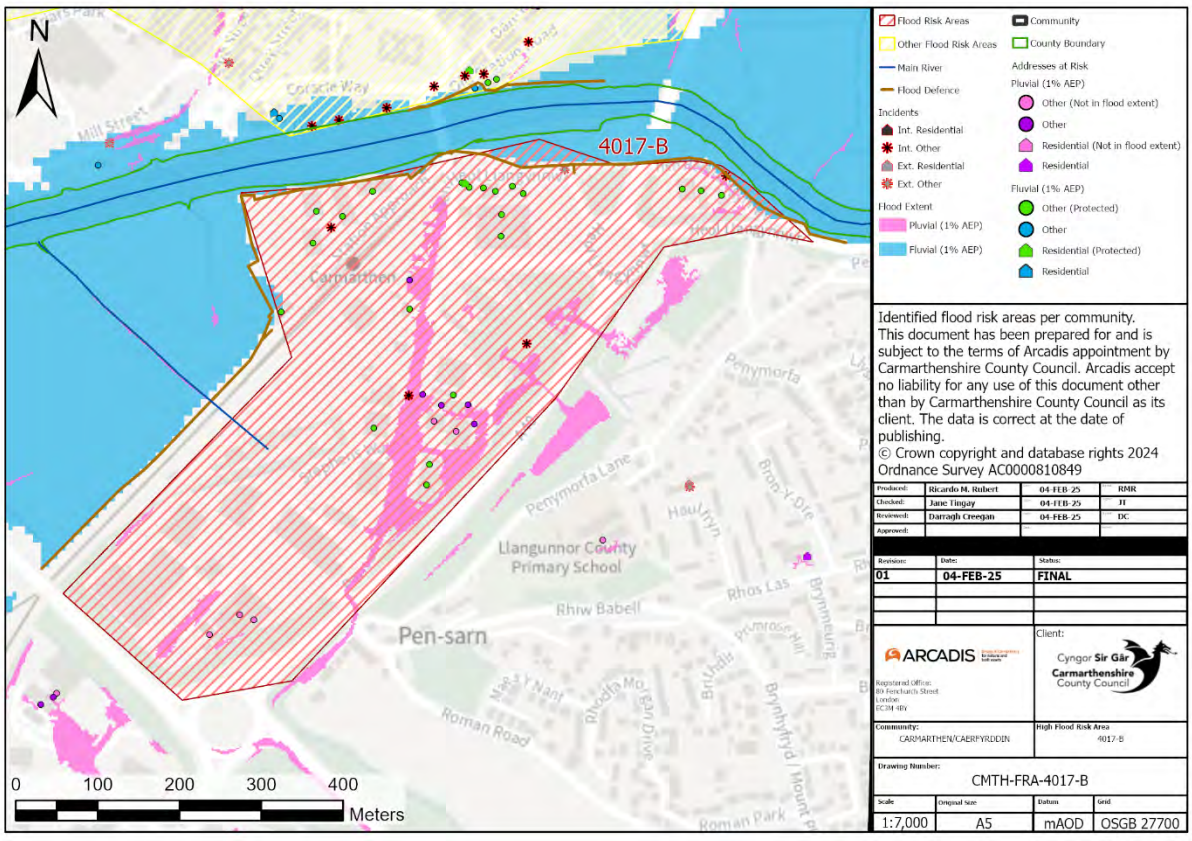

Figure 7-4 Flood Risk Area 4017-B

7.2.5.3 4017-C Johnstown

Area Description

The Johnstown area of Carmarthen (Figure 7-5) is dominated by the Tawlean Brook, a main river. The area benefits from NRW flood defences that constrain the Tawelan Brook, but the high, urban areas to the north shed water via a mixture of CCC and DCWW assets to the valley floor. These systems become tide locked when the Tawelan Brook is in full flow which can lead to significant local flooding.

Flood Defence Works

Significant investigations and asset management was undertaken post Storm Callum in 2018. Localised upgrades were made to the drainage infrastructure and our knowledge here is as detailed as anywhere in the county. We also have a pumping plan that can be enacted as and when there is flooding at Old Llansteffan Road or Old St Clears Road. There are no further works currently planned or in progress as the risk and drainage network is largely understood.

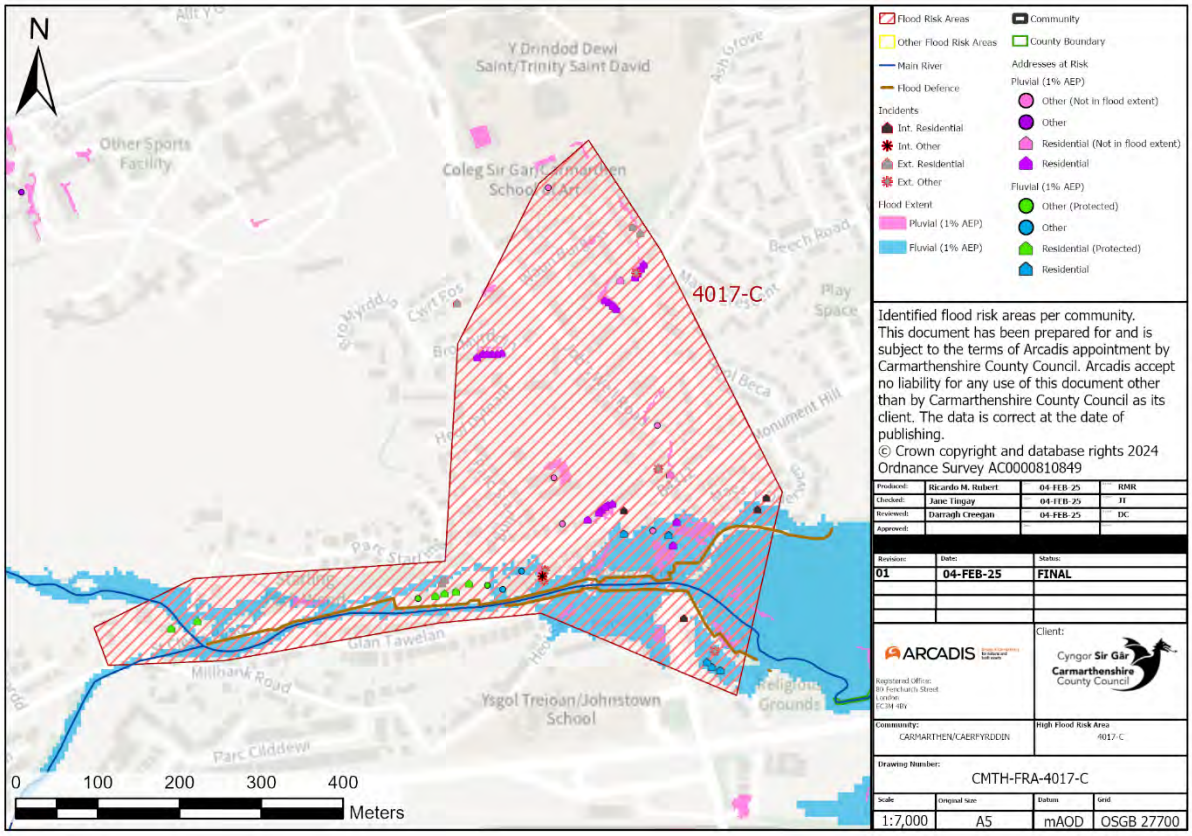

Figure 7-5 Flood Risk Area 4017-C

Table 7-11 Summary of Carmarthen Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4017-A	• Poor • DCWW have detailed plans as the area is largely serviced by their combined system • Excellent	Fluvial: 6 Pluvial: 214	• County Hall • Carmarthen Castle • Main Roads (A4242 Coracle Way, A484, B4312) • Old Station Road • Churches x 9 • Carmarthen Library • Substations (including Dark Gate Substation, Rees House Substation, St Peters Church Carmarthen Substation, Carmarthen District Council Offices Substation) • Carmarthenshire County Council	• Storm Callum - 2018	• DCWW, LLFA, Welsh Government, NRW	• Desired (medium term)
4017-B		Fluvial: 32 Pluvial: 10	• Train station • Railway Line • Petrol station • Royal Mail Carmarthen Delivery Office	• Storm Callum - 2018	• Local Business Owners, Welsh Government, LLFA, NRW	
4017-C		Fluvial: 20 Pluvial: 29	• Coleg Sir Gar: Jobs Well Campus • Burgess Meadows Substation	• Storm Callum 2018	• LLFA, NRW	

7.2.6 Actions Identified

Following the identification of the flood risk areas across the Carmarthen community, a list of actions was developed below in Table 7-12 to address, manage and reduce the risks of flooding.

Table 7-12 Long List of Potential Actions in Carmarthen

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Cost
Community Wide	Partnership work	Review	Work with partners to ensure risks are managed. Work with the university to manage surface water from their site.	Medium to long	£
4017-A	Retrofit SuDS	Prevention	Seek opportunities to retro fit SuDS around the town centre / St Katherine's Shopping Centre area which could provide amenity value and other benefits as well as reduce flood risk. Park Terrace properties could benefit from SuDS features at this location.	Medium	£££
	Asset Management & Maintenance	Prevention	Management, inspection and maintenance of flood defences.	Ongoing	£
	Asset Management & Maintenance	Prevention	Work with DCWW and the Highways Authority to develop a surface water sewer map for the area.	Ongoing	££
	Hard Engineering	Protection	Seek opportunities to work with DCWW and the Highways Authority to evaluate the drainage infrastructure. Look at	Medium	£££

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Cost
			separating surface water and foul sewer networks, increasing pipe capacity.		
4017-B	Partnership Work	Review	Seek opportunities to work with the CCC Regeneration and Business team and discuss the future of Pensarn Retail Park.	Long	££££
	Asset Management & Maintenance	Prevention / Protection	Management, inspection and maintenance of flood defences (walls, demountable and embankments) along the River Tywi.	Ongoing	£
4017-C	Retrofit SuDS	Prevention	Provision of SuDS along Old St Clears Road and other clusters of at risk properties could reduce the risk of surface water flooding.	Short	£££
	Asset Management & Maintenance	Prevention / Protection	Management, inspection and maintenance of flood defences (walls, demountable barriers and embankments) along the Tawelan Brook.	Ongoing	£
	Retrofit SuDS	Prevention	Seek opportunities to work with the University of Wales and the Local Health Board with regards to the management of surface water from their estates.	Long	££££

8 Teifi River Basin District

8.1 Cwmann - 4043

8.1.1 Community Area Description

Cwmann (Figure 8-1) is a small village situated in on the south bank of the River Teifi in the Teifi RBD. As of 2021, the total population of Cwmann was approximately 972[24].

The Afon Teifi flows through the northern part of the community area. 1 in 18 people are at risk of fluvial flooding while 1 in 10 people are at risk of pluvial flooding in Cwmann. The community area is largely rural, with urbanisation along the major roads. Primary infrastructure includes the A482 and the A485.

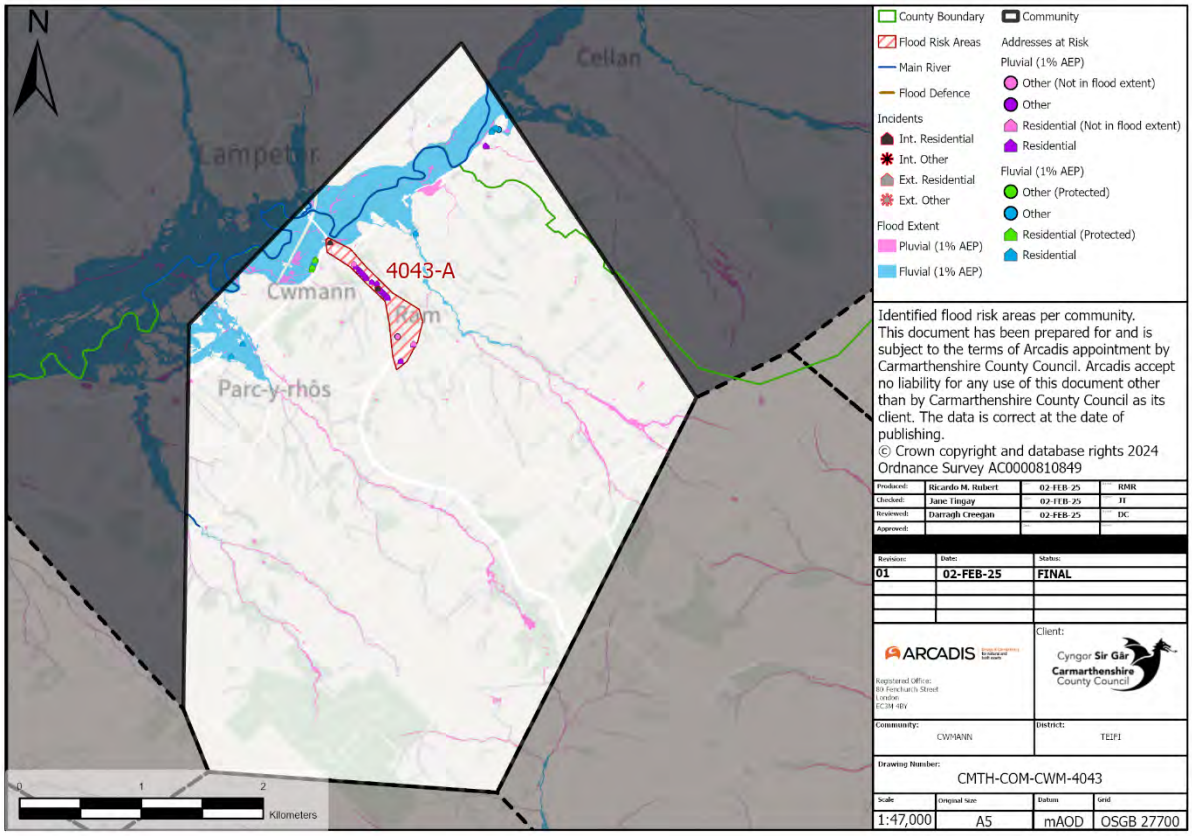

Figure 8-1 Cwmann Community Area

[24] Cwmann (Carmarthenshire, Wales / Cymru, United Kingdom) - Population Statistics, Charts, Map, Location, Weather and Web Information (citypopulation.de)

8.1.2 Historical Flood Events

Historically there has been significant flooding in Cwmann, with 1987 being one of the worst events. Table 8-1 shows the number of reported flood events, within Cwmann, that have been reported to the CCC FRM team between 2018 and 2024. This community has a very low number of reported flood incidents when compared to the other 27 high risk, high priority areas.

Table 8-1 Historical Flood Events in Cwmann

Event Type	Number of Occurrences
External Non-Residential	1
External Residential	0
Internal Non-Residential	2
Internal Residential	3

8.1.3 Community Area Flood Risk

The majority of properties are at risk from pluvial flooding as water cascades on the high ground to the south and flows north towards the main river Teifi. There are a number of small streams that capture this water, and a highways drainage system. It is the surcharging and overflowing of these features that is the risk.

In the north of the area, the main river Towy has a wide flood plain and there are 13 properties at risk in this area. NRW manage the flood risk from the rivers Teifi and Towy.

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Cwmann community area is presented below in Table 8-2. As properties across Cwmann are at greater risk of pluvial flooding than fluvial flooding, the mitigation of flood risk will be driven by CCC led actions and initiatives.

Table 8-2 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Cwmann

Flood Type	Number of Properties at Risk
Pluvial Flooding	34
Fluvial Flooding	13

In addition to the properties highlighted above, the greatest risk is to the highway infrastructure, which is key in this area. Significant roads including the sections of the A485 and the B4383 are shown to be at risk of fluvial flooding. There is also a primary

school in Cwmann at the Ram at risk of flooding. Table 8-3 presents the number of receptors present within Cwmann that are at risk of flooding.

Table 8-3 Receptors in Cwmann

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	1649	1468
Length of Rail (km)	0	0
Environmental (n)	12	2
Agricultural Land (m^2)	1007788	219544
Residential Properties	12	33
Non-residential Properties	1	1
Key Services (n)	0	1
Residential Allocation	0	2
Listed Buildings (n)	2*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

8.1.4 FRM works in the area since FRMP-1

No FRM work has been undertaken in Cwmann since the previous FRMP-1.

8.1.5 Flood Risk Areas

Area Description

Given our understanding of risk and analysis of the data we have currently available, our aim is to focus our resources on the works we have ongoing at Treherbert Street and at the Cwmann trash screen. As shown in in Figure 8-2. More specific information regarding the risk of flooding within this area can be found in Table 8-4.

Flood Defence Works

CCC are currently proceeding with business case development to seek funding to upgrade the culverted watercourse at Treherbert Street. Works have been previously undertaken up the catchment and a new trash screen has been designed.

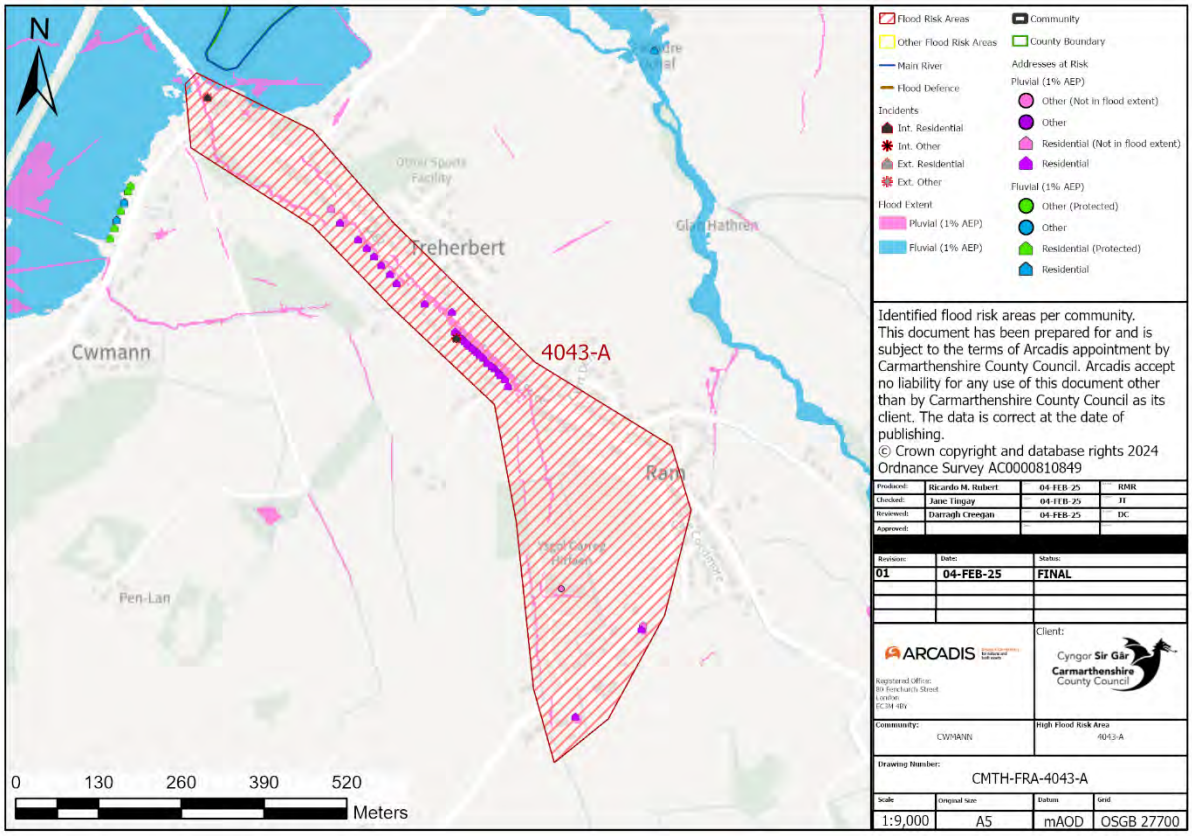

Figure 8-2 Flood Risk Area 4043-A

Table 8-4 Summary of Cwmann's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4043-A	• Average (with exception of A482 assets)	• Fluvial: 0 • Pluvial: 33	• School	• Storm Callum - 2018	• DCWW, NRW	• Desired - Short term (to support existing capital works)

8.1.6 Actions Identified

Following the identification of the flood risk areas across the Cwmann community, a list of actions was developed below in Table 8-5 to address, manage and reduce the risks of flooding.

Table 8-5 Long List of Potential Actions in Cwmann

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Costs
4043-A	Asset Management & Maintenance	Prevention / Protection	Business as usual - management, inspection and maintenance of existing drainage assets in key risk areas.	Ongoing	£
	Property Flood Resilience	Protection	Promote use of Property Flood Resilience to empower residents to manage risk of flooding from Afon Arad.	Long	
	Hard Engineering	Protection	Upgrade the Cwmann trash screen (subject to grant funding).	Short	£££
	Hard Engineering	Protection	Subject to continued WG funding, complete the detailed design and construction of the flood alleviation works at Treherbert Street.	Short-medium	£££

8.2 Drefach Felindre - 4084

8.2.1 Community Area Description

Drefach Felindre (Figure 8-3) is a village situated in the Teifi RBD, in the north-west of Carmarthenshire. As of 2001, the total population of Drefach Felindre was approximately 1,200.

The village lies at the confluence of three fast-flowing streams, the Nant Bargod, Nant Esgair and Nant Bran, where they open out into the Teifi Valley. 1 in 12 people are at risk of fluvial flooding while 1 in 20 people are at risk of pluvial flooding in Drefach. The area is largely rural. There are several listed buildings within the community area.

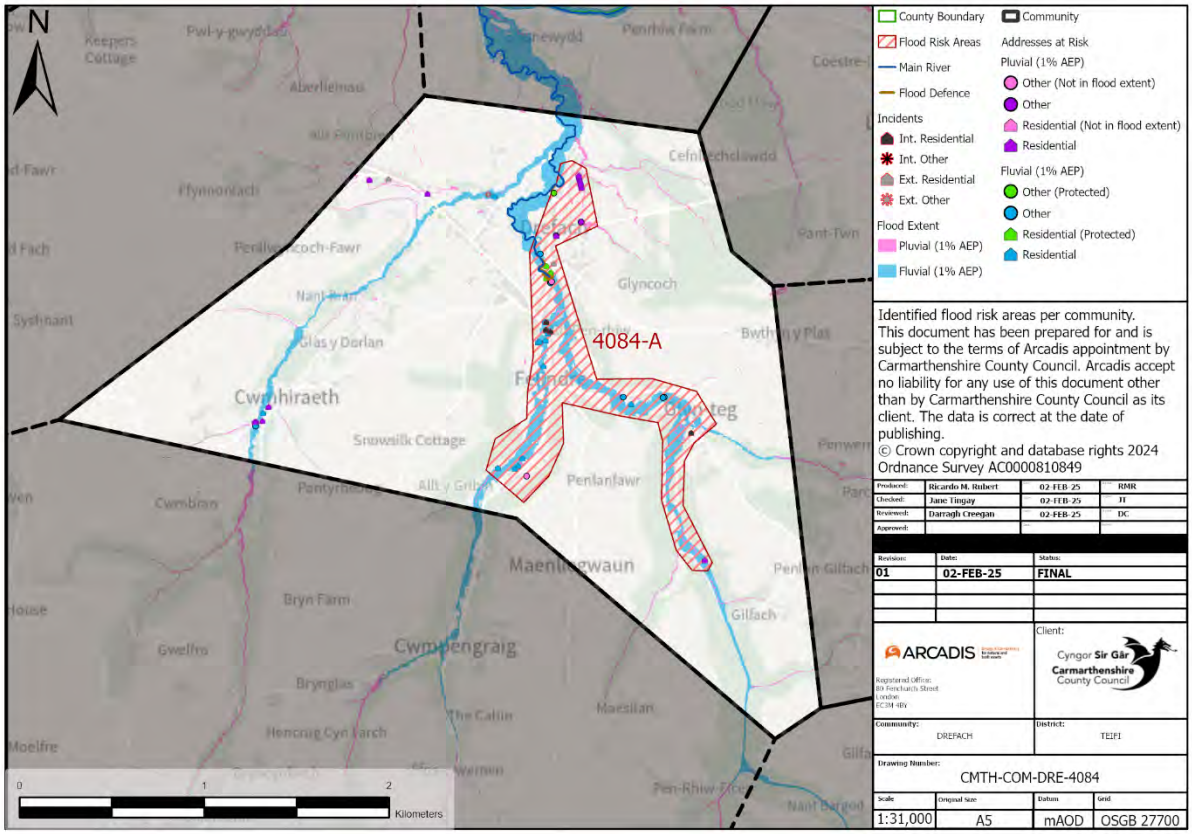

Figure 8-3 Drefach Felindre Community Area

8.2.2 Historical Flood Events

Historically there has been significant flooding in Drefach Felindre in 1987. Table 8-6 shows that only 11 flood events within Drefach Felindre have been reported to the CCC FRM team between 2018 and 2024. This community has a low number of reported flood incidents when compared to the other 27 high risk, high priority areas.

Table 8-6 Historical Flood Events in Drefach Felindre

Event Type	Number of Occurrences
External Non-Residential	1
External Residential	5
Internal Non-Residential	0
Internal Residential	5

8.2.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Drefach Felindre community area is presented below in Table 8-7. As properties across Drefach Felindre are at equal risk of fluvial and pluvial flooding, the mitigation of flood risk will be collaboratively addressed by CCC and NRW.

Table 8-7 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Drefach Felindre

Flood Type	Number of Properties at Risk
Pluvial Flooding	18
Fluvial Flooding	19

Table 8-8 presents the number of receptors present within Drefach Felindre that are at risk of flooding.

Table 8-8 Receptors in Drefach Felindre

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	785	397
Length of Rail (km)	0	0
Environmental (n)	7	1
Agricultural Land (m^2)	233932	24800
Residential Properties	15	16
Non-residential Properties	4	2
Key Services (n)	2	0
Listed Buildings (n)	22*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

8.2.4 FRM works in the area since FRMP-1

No FRM work has been undertaken in Drefach Felindre since the previous FRMP-1.

8.2.5 Flood Risk Areas

Area Description

There is one flood risk area identified within Drefach Felindre, labelled as 4084-A in Figure 8-4. Area 4084-A is located in the central to western side of the community. Area 4043-A is a mix of residential and green space. Several ordinary watercourses run through this area. The area is at risk from both pluvial and fluvial flooding. More specific information regarding the risk of flooding within these areas can be found in Table 8-9.

Flood Defence Works

None currently in progress.

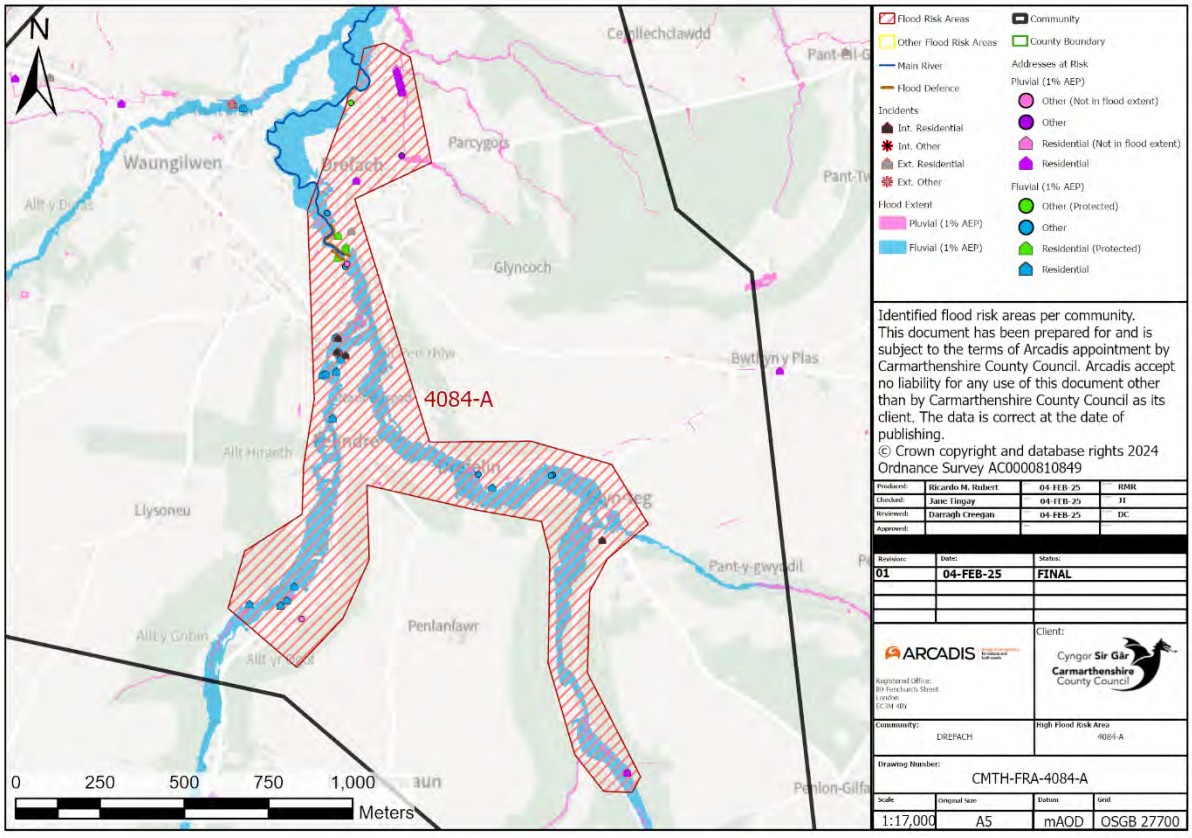

Figure 8-4 Flood Risk Area 4084-A

Table 8-9 Summary of Drefach's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4084-A	• Poor	• Fluvial: 25 • Pluvial: 14	• School • National Wool Museum • Red Dragon Hall	• No information provided	• LLFA, NRW, Nutrient Management Board	• Desired - long term

8.2.6 Actions Identified

Following the identification of the flood risk areas across the Drefach Felindre community, a list of actions was developed below in Table 8-10 to address, manage and reduce the risks of flooding.

Table 8-10 Long List of Potential Actions in Drefach

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Costs
4048-A	Improved flood mapping and modelling	Review	Seek opportunities to improve our understanding of flood risk with flood modelling and telemetry.	Long	££
	Natural Flood Management	Prevention	Seek opportunities to work with the Nutrient Management Board and use Natural Flood Management techniques such as attenuation basins, wetlands, gully blocking or leaky dams to achieve multiple benefits.	Long	£££
	Property Flood Resilience	Protection	Seek opportunities to promote use of Property Flood Resilience to empower residents to manage risk of flooding from Afon Bargoed and tributaries.	Long	£

8.3 Llandysul - 4033

8.3.1 Community Area Description

Llandysul (Figure 8-5) is a town and community situated in the Teifi RBD, partly in Carmarthenshire and partly in the county of Ceredigion. As of 2021, the total population of Llandysul was approximately 1,322.[25]

The Afon Teifi and Afon Tyweli flow through the community area. The area is largely rural with urbanisation in Pont-Tyweli and along the left bank of the Teifi, in Carmarthenshire. 1 in 28 people are at risk of both fluvial and pluvial flooding. There are several B-roads in the community area, as well as several listed buildings. The part of the community situated in Carmarthenshire, on the eastern bank of the Teifi, is described in the Flood Risk Area below.

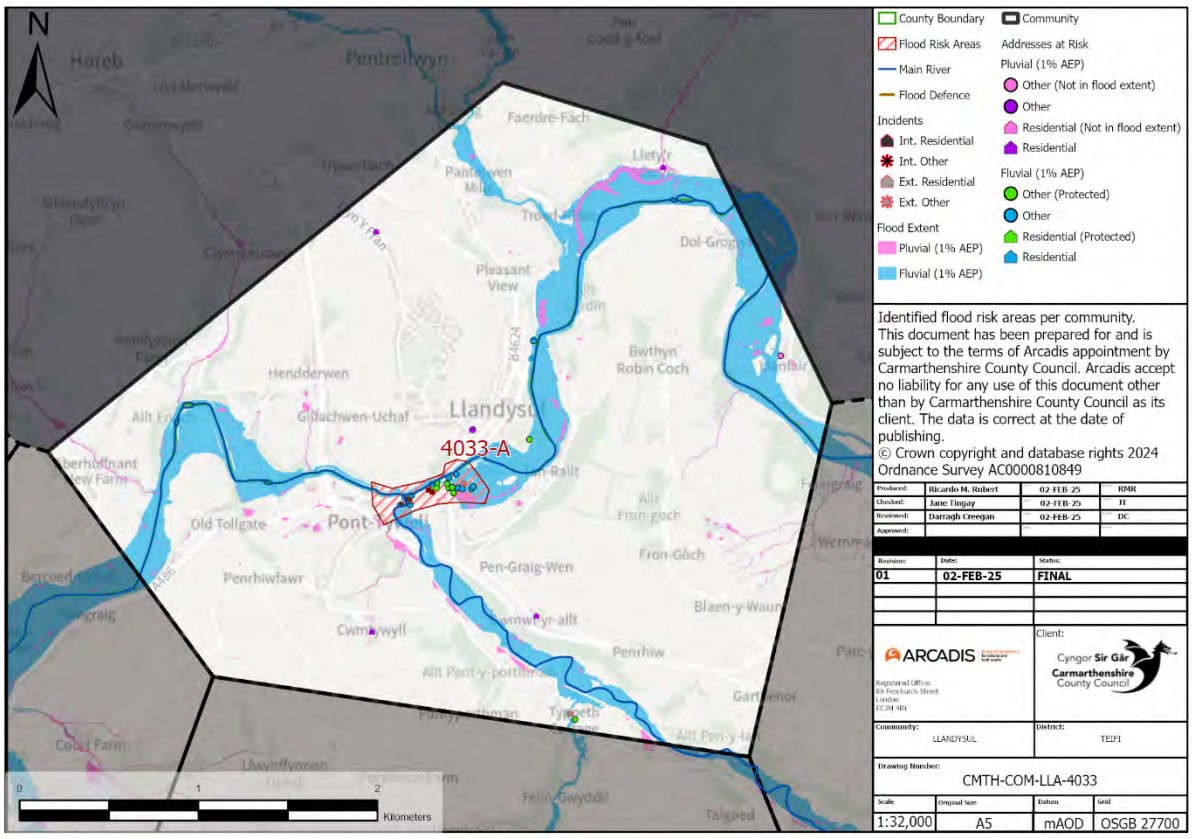

Figure 8-5 Llandysul Community Area

[25] https://www.citypopulation.de/en/uk/wales/ceredigion/W45000269__llandysul/

8.3.2 Historical Flood Events

Historically there has been significant flooding in Llandysul with the worst events being in 2018 during Storm Callum. Table 8-11 shows the number of reported flood events, within Llandysul, that have been reported to the CCC FRM team between 2018 and 2024 as 94. This is community has one of the highest numbers of reported flood incidents when compared to the other 27 high risk, high priority areas.

Table 8-11 Historical Flood Events in Llandysul

Event Type	Number of Occurrences
External Non-Residential	6
External Residential	4
Internal Non-Residential	38
Internal Residential	46

8.3.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Llandysul community area is presented below in Table 8-12. As properties across Llandysul are at a greater risk of fluvial flooding than pluvial flooding, the mitigation of flood risk should be driven by NRW led actions and initiatives.

Table 8-12 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Llandysul

Flood Type	Number of Properties at Risk
Pluvial Flooding	13
Fluvial Flooding	36

Key receptors include the outdoor activity centre, Llandysul Industrial Estate, the fire station, vets and local shops. The sewage treatment work is above the active flood plain, but the pumping station is not. As observed in Storm Callum, Station Road and Chapel Street in Pont Tyweli are at significant risk of fluvial flooding. Table 8-13 presents the number of receptors present within Llandysul that are at risk of flooding.

Table 8-13 Receptors in Llandysul

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	1436	517
Length of Rail (km)	0	0
Environmental (n)	3	2
Agricultural Land (m^2)	1154124	112204

Receptor	Fluvial Risk	Pluvial Risk
Residential Properties	3	11
Non-residential Properties	13	1
Key Services (n)	1	0
Residential Allocation	0	1
Listed Buildings (n)	37*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

8.3.4 FRM works in the area since FRMP-1

Post Storm Callum in 2018 there has been significant work in the Pont Tyweli community. While the flood risk in the community is fluvial and should therefore be led by NRW actions and initiatives (as stated in paragraph 8.3.3), CCC has had to take the flood risk management lead. In leading on this work over the last 7 years we have:

- Updated the NRW flood model for the area.
- Undertaken a S19 incident investigation.
- Undertaken an evaluation of the flood risk and developed business cases accordingly.
- Led a multi-agency group looking at flood risk in the area.
- Successful bid for Welsh Government grant funding to evaluate flood risk options.
- Organised and delivered multiple community and stakeholder events.

8.3.5 Flood Risk Areas

Area Description

There is one flood risk area identified within the Carmarthenshire part of Llandysul, labelled as 4033-A in Figure 8-6. Area 4033-A, Pont Tyweli, runs from the Llandysul Paddlers Lake downstream on the left bank of the Afon Teifi to Pont Tyweli. This area is a mix of residential, businesses and green space. The Afon Teifi and Afon Tyweli run through this flood risk area. The area is primarily at risk from fluvial flooding. More specific information regarding the risk of flooding within these areas can be found in Table 8-14.

Flood Defence Works

As detailed above, CCC has taken the lead and undertaken an evaluation of flood risk, has evaluated a range of interventions and delivered multiple community events to communicate these options. In December 2024 a Full Business Case was submitted to the Welsh Government for review. Within the business case Property Flood Resilience (PFR) options give the best Benefit-Cost Ratio.

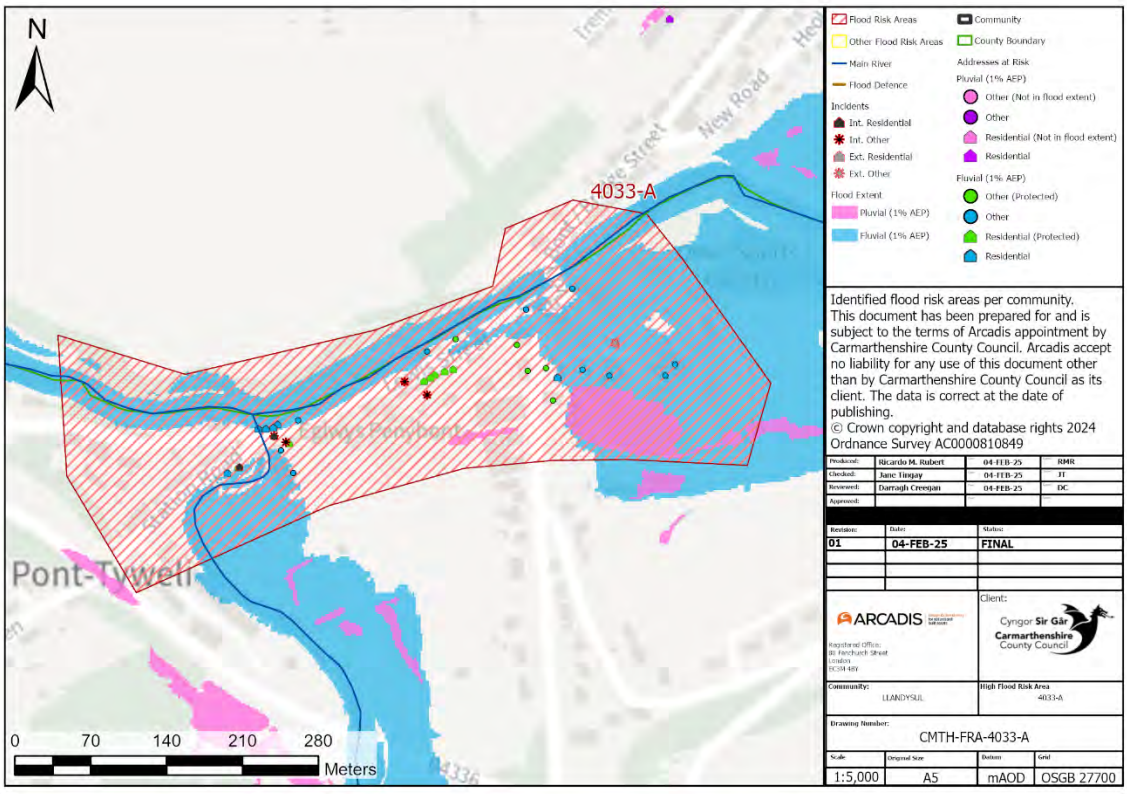

Figure 8-6 Flood Risk Area 4033-A

Table 8-14 Summary of Llandysul's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4033-A	• Poor (with exception of Pont Tyweli)	• Fluvial: 30 • Pluvial: 0	• DCWW sewage works • Pwerdy Powerhouse Community Centre • West Wales Gas • Highways (A486, B4476. B4624) • Llandysul Fire Station • Tysul Vets • Industrial Estate • Local shops • Canolfan Cenfad Llandysul Paddlers	• Storm Callum - 2018	• LLFA, DCWW, NRW, Nutrient Management Board, Developers	• Initiated (as part of ongoing capital works)

8.3.6 Actions Identified

Given that post Storm Callum in October 2018 the team have worked on developing a business case, seeking funding and working towards a flood risk management intervention. When the Property Flood Resilience scheme has been implemented, there will be few further planned works over the lifetime of this FRMP2.

Following the identification of the flood risk areas across the Llandysul community, a list of actions was developed below in Table 8-15 to address, manage and reduce the risks of flooding.

Table 8-15 Long List of Potential Actions in Llandysul

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Costs
4033-A	Asset Management & Maintenance	Prevention	Business as usual - carry out regular inspection and maintenance of existing known assets.	Ongoing	£
	Natural Flood Management	Prevention	Seek opportunities to work with the Nutrient Management Board and use Natural Flood Management techniques such as attenuation basins, wetlands, gully blocking or leaky dams.	Medium - long	££££
	Property Flood Resilience	Protection	Subject to WG funding, deliver the programme of Property Flood Resilience to empower residents to manage their flood risk.	Short	£££

8.4 Llanybydder - 4018

8.4.1 Community Area Description

Llanbydder (Figure 8-7) is a market town and community in the Teifi RBD, in the north of Carmarthenshire. As of 2021, the total population of Llanbydder was approximately 1,182[26].

The Afon Teifi flows through the community area. 1 in 51 people are at risk of fluvial flooding while 1 in 45 people are at risk of pluvial flooding in Llanbydder.

The area is largely rural with urbanisation around the town of Llanbydder. The A485 and several B-roads pass through the community area. There are also several listed buildings.

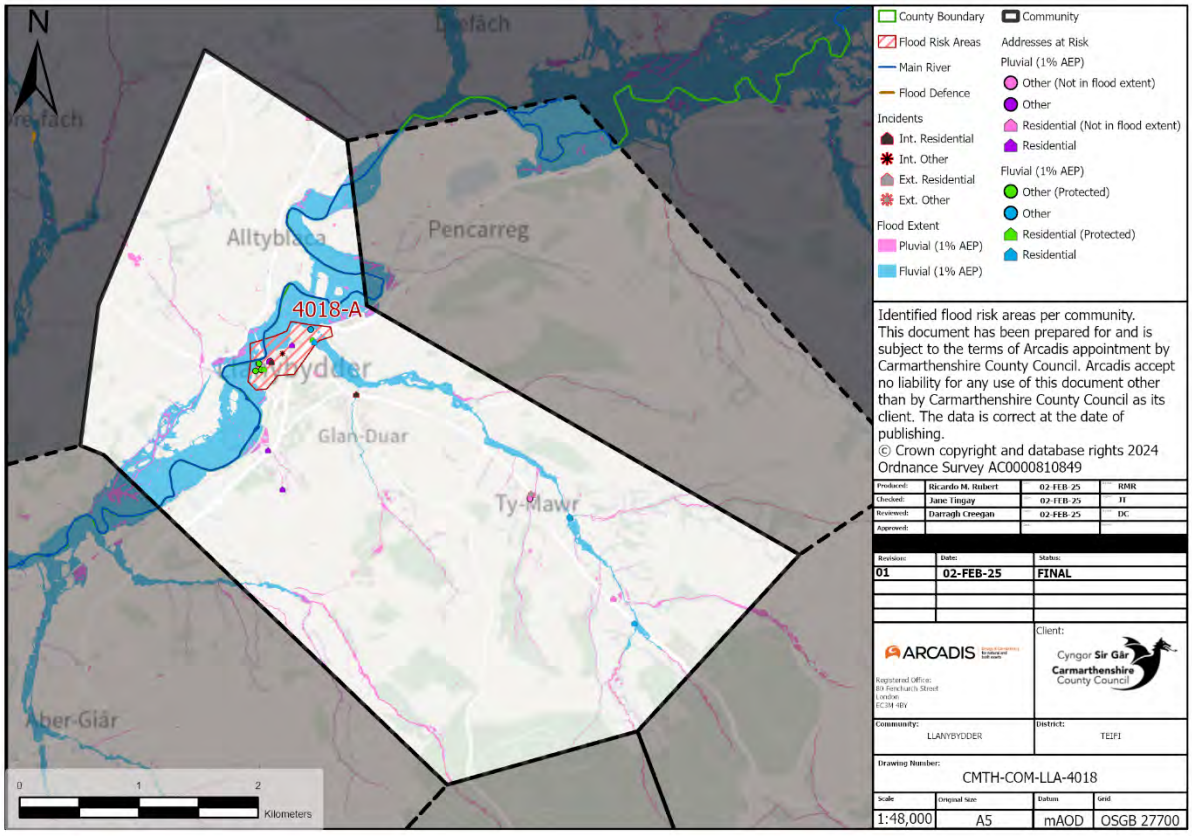

Figure 8-7 Llanybydder Community Area

[26] Llanybydder (Carmarthenshire, Wales / Cymru, United Kingdom) - Population Statistics, Charts, Map, Location, Weather and Web Information (citypopulation.de)

8.4.2 Historical Flood Events

Historically there has been significant flooding in Llanybydder, for example in 2022 and previously in 2018 during Storm Callum. Table 8-16 shows the number of reported flood events, within Llanybydder, that have been reported to the CCC FRM team between 2018 and 2024 as 45. This is community has one of the highest numbers of reported flood incidents when compared to the other 27 high risk, high priority areas.

Table 8-16 Historical Flood Events in Llanybydder

Event Type	Number of Occurrences
External Non-Residential	0
External Residential	3
Internal Non-Residential	6
Internal Residential	36

8.4.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Llanybydder community area is presented below in Table 8-17. Properties across Llanybydder are at a similar risk of fluvial flooding and pluvial flooding. Local detailed flood modelling undertaken by CCC identified a further 23 properties at risk of fluvial flooding and 51 properties at risk of pluvial flooding in Llanybydder.

Table 8-17 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Llanybydder

Flood Type	Number of Properties at Risk CARR	Number of properties at risk CCC evaluation
Pluvial Flooding	9	23
Fluvial Flooding	7	51

Sections of Highmead Terrace (B4337) are shown to be at risk of both fluvial and pluvial flooding. Table 8-18 presents the number of receptors present within Llanybydder that are at risk of flooding.

Table 8-18 Receptors in Llanybydder

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	524	603
Length of Rail (km)	0	0
Environmental (n)	13	14
Agricultural Land (m^2)	1314028	204488
Residential Properties	5	8

Receptor	Fluvial Risk	Pluvial Risk
Non-residential Properties	2	1
Key Services (n)	0	0
Listed Buildings (n)	12*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

8.4.4 FRM works in the area since FRMP-1

FRM work undertaken in Llanybydder since the FRMP-1 are presented below in Table 8-19.

Table 8-19 FRM work undertaken in Llanybydder since CCC FRMP-1.

Specific Area / Policy Unit Area	FRM (FRMP-1) Actions	Progress
Station Road, Llanybydder	Map surface water drainage network.	Completed
	Liaise with NRW regarding any potential to reduce the severity and frequency of flooding.	Completed

Post Storm Callum in 2018 there has been significant work in the Llanybydder community. While the recent large-scale events have been fluvial and should therefore be led by NRW actions and initiatives, CCC has had to take the flood risk management lead. In leading on this work over the last 7 years we have:

- Updated the NRW flood model for the area.
- Undertaken a S19 incident investigation.
- Undertaken an evaluation of the flood risk and developed business cases accordingly.
- Led a multi-agency group looking at flood risk in the area.
- Successful bid for Welsh Government grant funding to evaluate flood risk options.
- Organised and delivered multiple community and stakeholder events.

8.4.5 Flood Risk Areas

Area Description

There is one flood risk area identified within Llanybydder, labelled as 4018-A in Figure 8-8. Area 4018-A is located in the centre of the community and extends slightly into the adjacent county of Ceredigion. Area 4018-A is a mix of residential and green space. The flood risk area is bound by the Afon Teifi in the north. The area is at risk from both fluvial and pluvial flooding. More specific information regarding the risk of flooding within this area can be found in Table 8-20.

Flood Defence Works

Following Storm Callum, the Nant Einon B4337 culvert was upgraded to limit blockage and manage flood risk. CCC is currently developing a flood alleviation scheme and a Full Business Case has been developed in collaboration with Ceredigion and NRW, with detailed design proceeding relating to options around Property Flood Resilience (PFR).

A retrofit SuDS scheme is also being planned at the village car park to manage the risk of surface water flooding at Station Terrace.

The surface water drainage / highways drainage at Station Road was upgraded to manage the risk of surface water flooding in 2020.

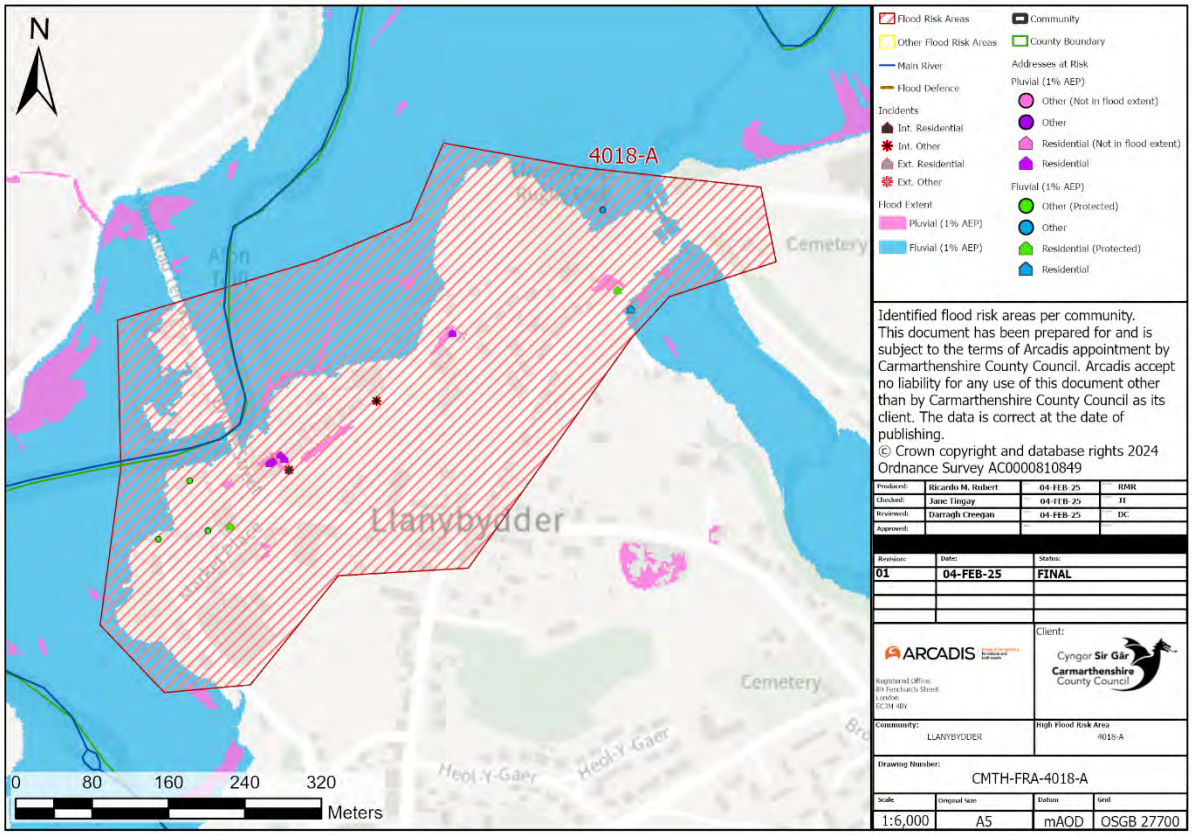

Figure 8-8 Flood Risk Area 4018-A

Table 8-20 Summary of Llanybydder's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4018-A	• Good in the centre of Llanybydder	• Fluvial: 7 • Pluvial: 6	• Key river crossing in the area at Bridge Street (B4337) • Cattle Mart • Local Businesses	• Storm Callum - 2018	• LLFA, DCWW, NRW	• Active (as part of ongoing capital works)

8.4.6 Actions Identified

Following the identification of the flood risk areas across the Llanybydder community, a list of actions was developed below in Table 8-21 to address, manage and reduce the risks of flooding.

Table 8-21 Long List of Potential Actions in Llanybydder

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Costs
4018-A	Asset Management & Maintenance	Prevention / Protection	Management, inspection and maintenance of existing drainage assets in key risk areas.	Ongoing	£
	Natural Flood Management	Prevention	Seek opportunities to work with the Nutrient Management Board and use Natural Flood Management techniques such as attenuation basins, wetlands, gully blocking or leaky dams.	Medium - Long	££££
	Property Flood Resilience	Protection	Subject to WG funding, deliver the programme of Property Flood Resilience to empower residents to manage their flood risk.	Short	£££
	Retro-fit SUDs	Protection	Deliver the retrofit SuDS project in the village car park.	Short	££

8.5 Newcastle Emlyn - 4066

8.5.1 Community Area Description

Newcastle Emlyn (Figure 8-9) is a town in the Teifi RBD, straddling the counties of Carmarthenshire and Ceredigion. As of 2021, the total population of Newcastle Emlyn was approximately 1,144[27].

The Afon Teifi flows through the community area. 1 in 39 people are at risk of fluvial flooding while 1 in 8 people are at risk of pluvial flooding in Newcastle Emlyn.

The area is largely urban around the town with green space in the surrounding area. There are also several listed buildings. The A484 and A475 trunk roads pass through the community area.

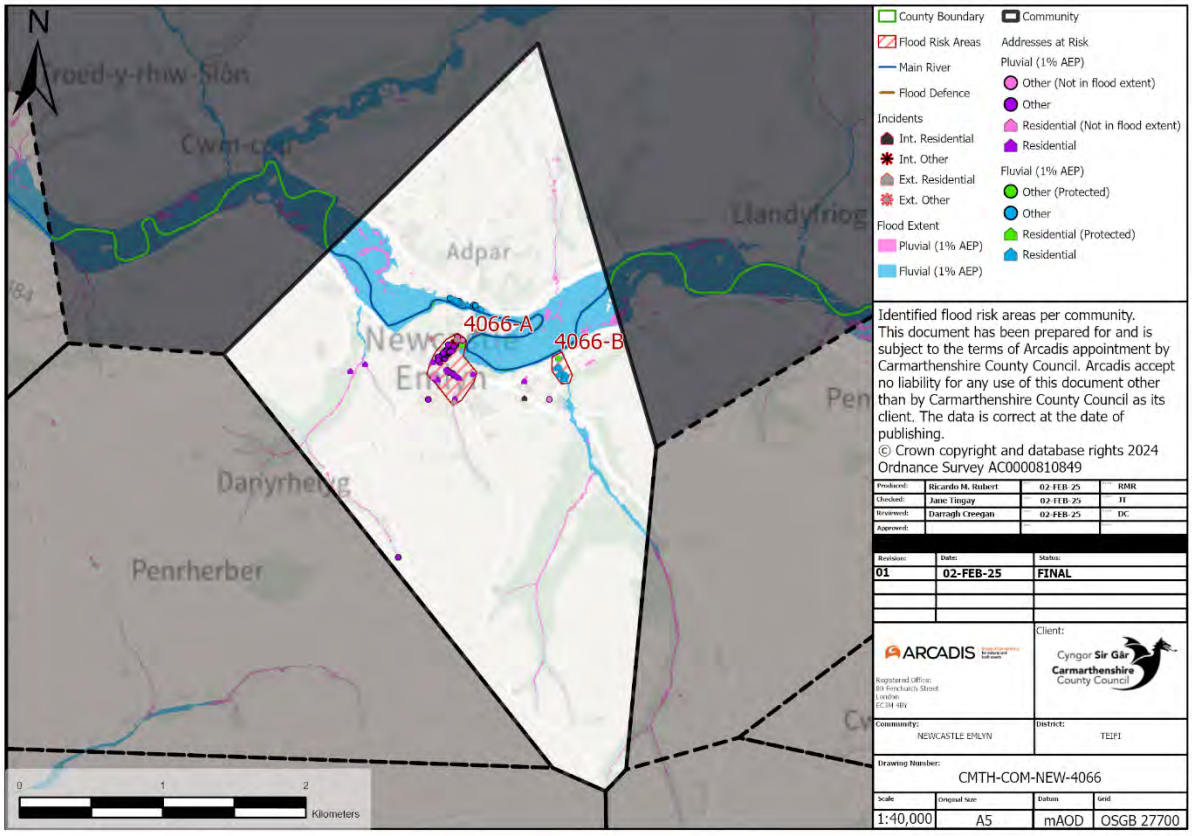

Figure 8-9 Newcastle Emlyn Community Area

[27] Newcastle Emlyn (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

8.5.2 Historical Flood Events

Historically there has been significant flooding in Newcastle Emlyn in 2018 and 2021. Table 8-22 shows the number of reported flood events, within Newcastle Emlyn, that have been reported to the CCC FRM team between 2018 and 2024 as 21. This is community has one of the lower numbers of reported flood incidents when compared to the other 27 high risk, high priority areas. DCWW have recorded 36 flooding incidents over the same period.

Table 8-22 Historical Flood Events in Newcastle Emlyn

Event Type	Number of Occurrences	Flooding incidents reported to partner organisations
External Non-Residential	3	-
External Residential	4	36
Internal Non-Residential	4	-
Internal Residential	10	-

8.5.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Newcastle Emlyn community area is presented below in Table 8-23. As properties across Newcastle Emlyn are at a greater risk of pluvial flooding than fluvial flooding, the mitigation of flood risk will be driven by CCC led actions and initiatives.

Table 8-23 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Newcastle Emlyn

Flood Type	Number of Properties at Risk
Pluvial Flooding	52
Fluvial Flooding	12

Receptors including Newcastle Emlyn Town Centre, Station Road and Quarry Ffinant are shown to be at a risk of pluvial flooding. The greatest fluvial flood risk is from the Afon Arad and the dairy and Heol Arad and Station Road are at greatest risk. The risk from the Afon Teifi in this area, on the Carmarthen bank is less. Table 8-24 presents the number of receptors present within Newcastle Emlyn that are at risk of flooding.

Table 8-24 Receptors in Newcastle Emlyn

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	786	673

Receptor	Fluvial Risk	Pluvial Risk
Length of Rail (km)	0	0
Environmental (n)	3	2
Agricultural Land (m^2)	622368	57496
Residential Properties	12	23
Non-residential Properties	0	29
Key Services (n)	0	2
Town Centre	Newcastle Emlyn Town Centre	
Residential Allocation	0	1
Listed Buildings (n)	34*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

8.5.4 FRM works in the area since FRMP-1

FRM work undertaken in Newcastle Emlyn since the FRMP-1 are presented below in Table 8-25:

Table 8-25 FRM work undertaken in Newcastle Emlyn since CCC FRMP-1.

Specific Area / Policy Unit Area	FRM (FRMP-1) Actions	Progress
Newcastle Emlyn	Funding for the renewal of the culvert between Quarry Ffinant and Ebenezer Street has been sought from Welsh Government.	Complete

8.5.5 Flood Risk Areas

As single actions to address the risk of flooding cannot be applied generically across the Newcastle Emlyn community, two areas based on their flood risk and catchment areas were created. More specific information regarding the risk of flooding within these areas can be found in Table 8-26.

8.5.5.1 4066-A NCE Town Centre and Quarry Ffinant

Area Description

Area 4066-A (Figure 8-10) is located in the centre of Newcastle Emlyn, where the urban area consists of residential and commercial land use. The A484 bisects the central portion of the area. Pluvial flood risk is associated with the main A484 road.

Flood Defence Works

The Quarry Ffinant Flood Alleviation Scheme was completed in 2023, with phase one consisting of an approximately 140 metre re-culverting scheme. Phase two commenced in 2024 and will run, subject to ongoing funding, until 2026. This targets the lower reaches of the watercourse.

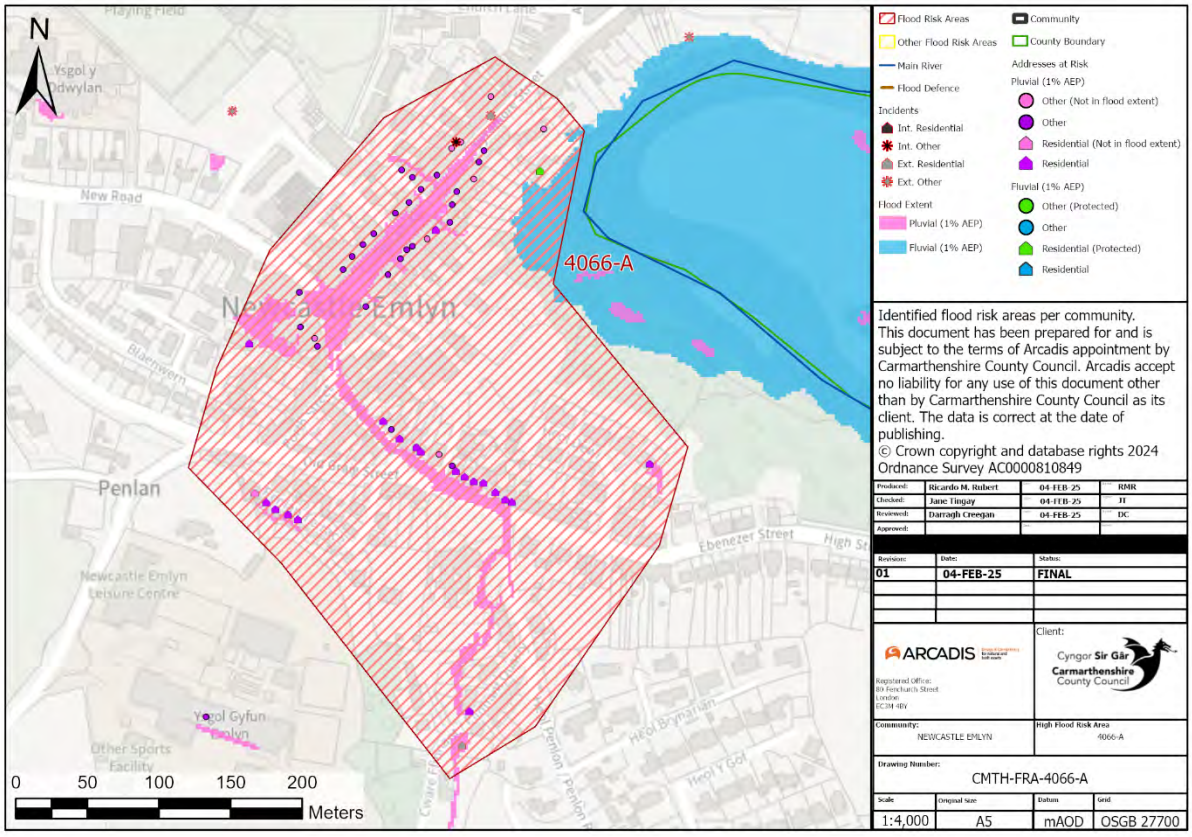

Figure 8-10 Flood Risk Area 4066-A

8.5.5.2 4066-B Aber Arad

Area Description

Area 4066-B (Figure 8-11), an urban residential area, is located to the east of the main community area of Newcastle Emlyn. The Afon Arad watercourse runs through the centre of the area and the principal flood risk is associated with this feature.

Flood Defence Works

None currently in progress.

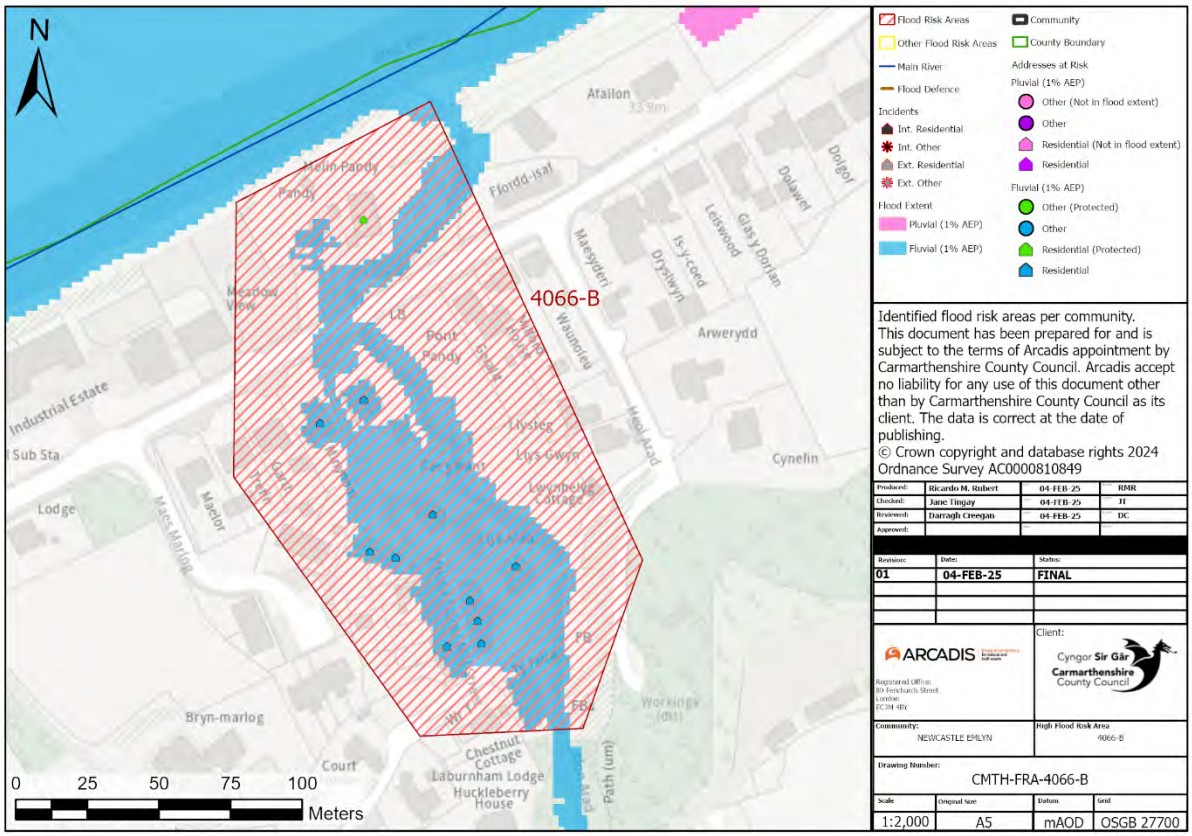

Figure 8-11 Flood Risk Area 4066-B

Table 8-26 Summary of Newcastle Emlyn's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4066-A	• Average	• Fluvial: 1 • Pluvial: 58	• Main Roads (A475, A484) • Cantref Gofal Glyn Nest Care Home • Dyfed Powys Police Newcastle Emlyn Police Station • Newcastle Emlyn Post Office • Town Centre	• No significant flooding known	• DCWW, Local Schools and businesses, NRW, Ceredigion County Council, Nutrient Management Board	• Initiated (as part of ongoing capital works)
4066-B		• Fluvial: 11 • Pluvial: 0	• Main Road (A484) • Dairy Partners Creamery • NCE Industrial Estate • Business Park	• No significant flooding known	• NRW, Nutrient Management Board	

8.5.6 Actions Identified

Following the identification of the flood risk areas across the Newcastle Emlyn community, a list of actions was developed below in Table 8-27 to address, manage and reduce the risks of flooding.

Table 8-27 Long List of Potential Actions in Newcastle Emlyn

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Costs
4066-A	Retrofit SuDS	Prevention	Provision of SuDS along Res y Cawdor / Cawdor Terrace through town centre could reduce risk to properties and provide additional amenity benefit. Potential to utilise SuDS within Ysgol Gyfun Emlyn to reduce flows downstream and provide educational showcase.	Long	£££
	Asset Management & Maintenance	Prevention / Protection	Continued management, inspection, maintenance of watercourse and associated assets.	Ongoing	£
	Property Flood Resilience	Preparedness	Seek opportunities to promote use of Property Flood Resilience to empower residents to manage their risk of flooding.	Long	£££
	Natural Flood Management	Prevention	Seek opportunities to work with the Nutrient Management Board and use Natural Flood Management techniques.	Medium / long	£££
4066-B	Property Flood Resilience	Protection	Seek opportunities to promote the use of Property Flood Resilience to empower residents to manage risk of flooding from Afon Arad.	Long	£
	Natural Flood Management	Prevention	Seek opportunities to work with the nutrient management board and use Natural Flood Management techniques such as attenuation basins, wetlands, gully blocking or leaky dams on Afon Arad and tributaries upstream of town could provide attenuation to reduce peak flows on watercourse. Other	Medium	£££

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Costs
			techniques such as buffer strips could reduce flows and phosphate loads affecting Teifi SAC.		
	Asset Management & Maintenance	Prevention / Protection	Continued management, inspection, maintenance of watercourse and associated assets.	Ongoing	£

9 Upper Towy River Basin District

9.1 Llandeilo - 4087

9.1.1 Community Area Description

Llandeilo (Figure 9-1) is a town and community in the Upper Towy RBD, in the centre of Carmarthenshire. As of 2021, the total population of Llandeilo was approximately 1,784.[28]

The Afon Towy and Afon Cennen flow through the community area. While the risk of fluvial flooding to people is very low, 1 in 35 people are at risk of pluvial flooding in Llandeilo.

The area is largely rural with urbanisation around the towns of Llandeilo and Ffairfach. The A40 and A483 pass through the community area. Llandeilo and Ffairfach train stations are also situated within the community area. There are also a significant number of listed buildings, largely within Llandeilo town.

[28] Llandeilo (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

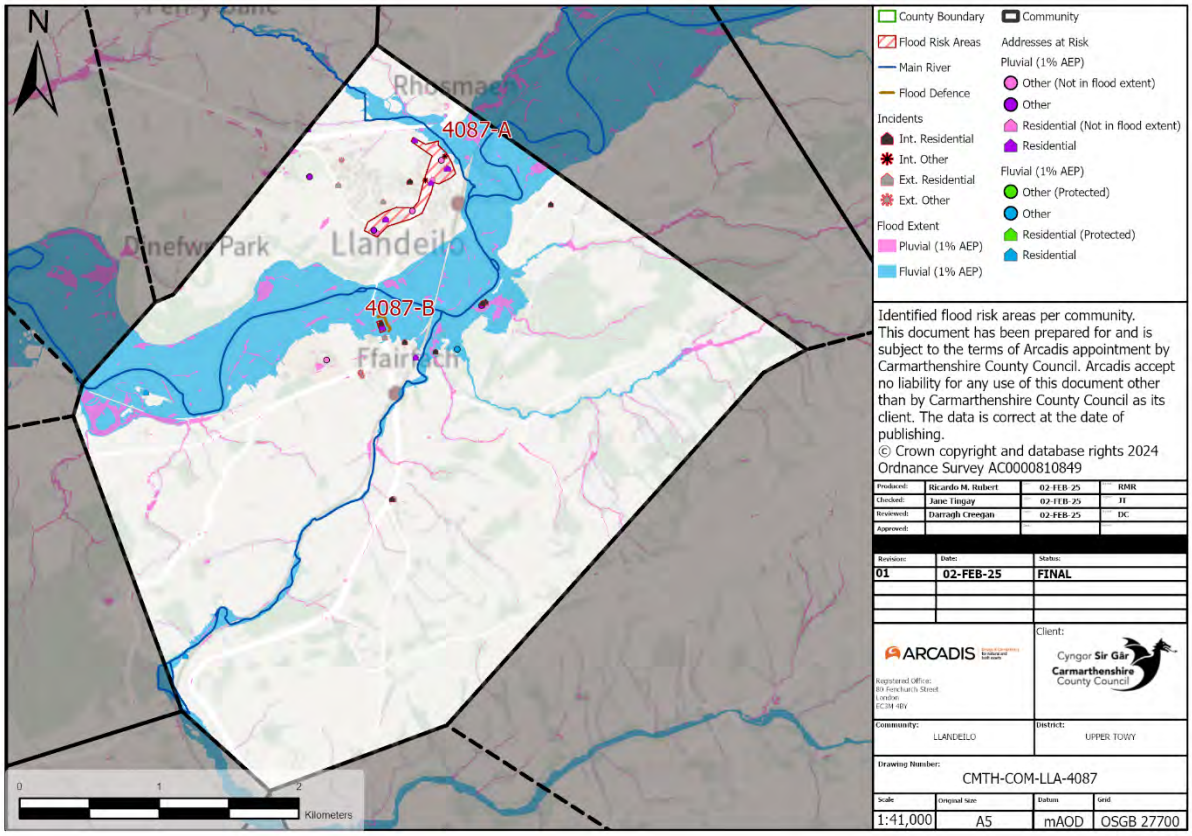

Figure 9-1 Llandeilo Community Area

9.1.2 Historical Flood Events

Historically there has been significant flooding in Llandeilo in 1987, 2018 and 2023. Table 9-1 shows the number of reported flood events, within Llandeilo, that have been reported to the CCC FRM team between 2018 and 2024 as 38. The number of reported flood incidents within this community is above average when compared to the other 27 high risk, high priority areas. Over the same period of time, DCWW have received 89 reports of flooding.

Table 9-1 Historical Flood Events in Llandeilo

Event Type	Number of Occurrences	Floding incidents reported to partner organisations
External Non-Residential	4	-
External Residential	9	89
Internal Non-Residential	4	-
Internal Residential	21	-

9.1.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Llandeilo community area is presented below in Table 9-2. As properties across Llandeilo are at a substantially greater risk of pluvial flooding than fluvial flooding, the mitigation of flood risk will be driven by CCC led actions and initiatives, closely supported by DCWW.

Table 9-2 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Llandeilo

Flood Type	Number of Properties at Risk
Pluvial Flooding	15
Fluvial Flooding	0

Receptors at fluvial flood risk include properties around Towy Terrace, Bethlehem Road and Cawdor Park. Pluvial flood risk is highlighted along the A483 and low spots across Llandeilo town. Table 9-3 presents the number of receptors present within Llandeilo that are at risk of flooding.

Table 9-3 Receptors in Llandeilo

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	1021	1324
Length of Rail (km)	166	18
Environmental (n)	3	7
Agricultural Land (m^2)	2024268	308768
Residential Properties	0	12
Non-residential Properties	0	3
Key Services (n)	0	1
SFCA Additional Sites	0	1
Residential Allocation	0	1
Mixed Use	0	1
National Nature Reserves	Dinefwr Estate	
National Park	Bannau Brycheiniog / Brecon Beacons	
Listed Buildings (n)	86*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

9.1.4 FRM works in the area since FRMP-1

No FRM work has been undertaken in Llandeilo since the previous FRMP-1.

9.1.5 Flood Risk Areas

As single actions to address the risk of flooding cannot be applied generically across the Llandeilo community, three areas based on their flood risk and catchment areas were created. More specific information regarding the risk of flooding within these areas can be found in Table 9-4.

9.1.5.1 4087-A Llandelio Town

Area Description

Area 4087-A is Llandeilo Town, as shown in Figure 9-2. The area encompasses the primary retail area, the primary residential area and the primary highway infrastructure namely the A40 and the A483, the bus depot and the primary school.

Flood Defence Works

None currently in progress.

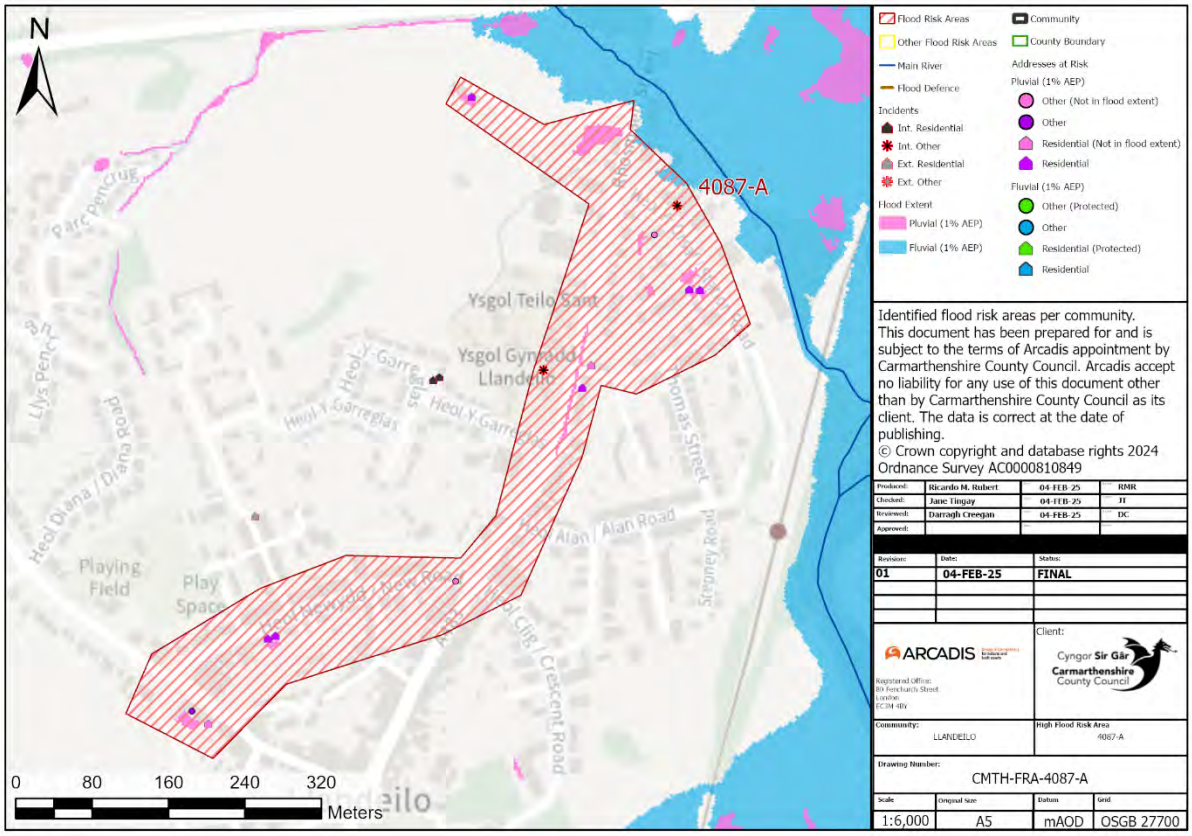

Figure 9-2 Flood Risk Area 4087-A

9.1.5.2 4087-B Ffairfach

Area Description

Area 4087-B is located more centrally within the Llandelio community and is centred around Ffairfach on the south (left) bank of the Afon Towy (see Figure 9-3). The fluvial flood risk is centred around Towy Terrace and these properties benefit from an NRW flood defence. Properties around the Afon Cennen are also at risk and are afforded some protection by the railway embankment, albeit, that is not a flood defence structure. Pluvial flood risk in this area is associated with the low areas of Bethlehem Road where the highway goes under the railway. Properties and business around Heol Myrddin are also at risk of pluvial flooding as water flows of the agricultural land to the south.

Flood Defence Works

There have been drainage works undertaken on land above Heol Myrddyn to manage the risk of pluvial flooding. These drainage works have also extended north and along the boundary of Ysgol Bro Dinefwr. During FRMP-1, FRM works were undertaken at Geulan-goch on Bethlehem Road.

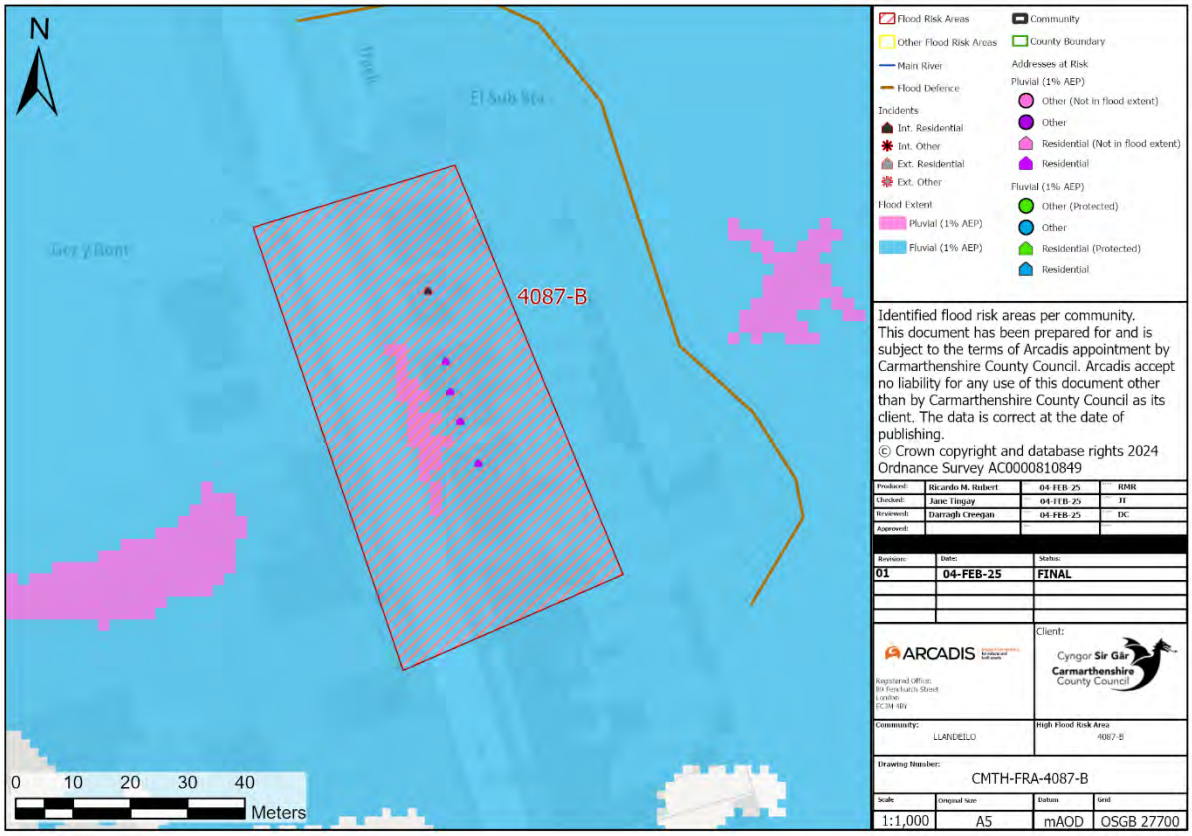

Figure 9-3 Flood Risk Area 4087-B

Table 9-4 Summary of Llandeilo's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4087-A	• Very Poor • DCWW have a more robust data set of drainage assets	• Fluvial: 0 • Pluvial: 12	• A483 • Schools (Llandeilo Primary School, Ysgol Gymraeg Teilo Sant) • Salem Calvinist Methodist Chapel • Local Businesses	• None known	• DCWW	• Aspirational
4087-B	• Very Poor	• Fluvial: 0 • Pluvial: 4	• Residential properties • Tywi Bridge Substation	• Regular small-scale flooding	• LLFA, DCWW, NRW	• Aspirational

9.1.6 Actions Identified

Following the identification of the flood risk areas across the Llandeilo community, a list of actions was developed below in Table 9-5 to address, manage and reduce the risks of flooding.

Table 9-5 Long List of Potential Actions in Llandeilo

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Costs
4087-A	Retrofit SuDS	Prevention	Seek opportunities to utilise SuDS to reduce runoff and provide attenuation to reduce flood risk and provide amenity benefit.	Short	£££
	Asset Management & Maintenance	Prevention / Protection	Seek opportunities to work with DCWW and the Highways Authority to develop a master drainage map.	Ongoing	££
4087-B	Retrofit SuDS	Prevention	Utilisation of SuDS along Rhosmaen Street could reduce runoff and provide attenuation to reduce risk to properties.	Medium / long	£££
	Property Flood Resilience	Preparedness	Empower residents to take agency over own flood risk by exploring Property Flood Resilience measure.	Medium	£££

9.2 Llandovery/Llanmddyfri - 4007

9.2.1 Community Area Description

Llandovery (Figure 9-4) is a town and community in the Upper Towy RBD, in the east of Carmarthenshire. It is a market town located in the upper catchment of Afon Tywi River basin district which is predominantly at fluvial flood risk sitting at the confluence of four main rivers. As of 2021, the total population of Llandovery was approximately 1,985[29].

The Afon Towy and Afon Bran flow through the community area. 1 in 3 people are at risk of fluvial flooding while 1 in 19 people are at risk of pluvial flooding in Llandovery.

The area is largely rural with urbanisation around the town. The A40 and A483 pass through the community area. Llandovery train station is also situated within the community area. This area benefits from significant NRW defences and flooding frequently occurs along the A4069 at Llwyn Jac causing the road to close.

[29] Llandovery (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

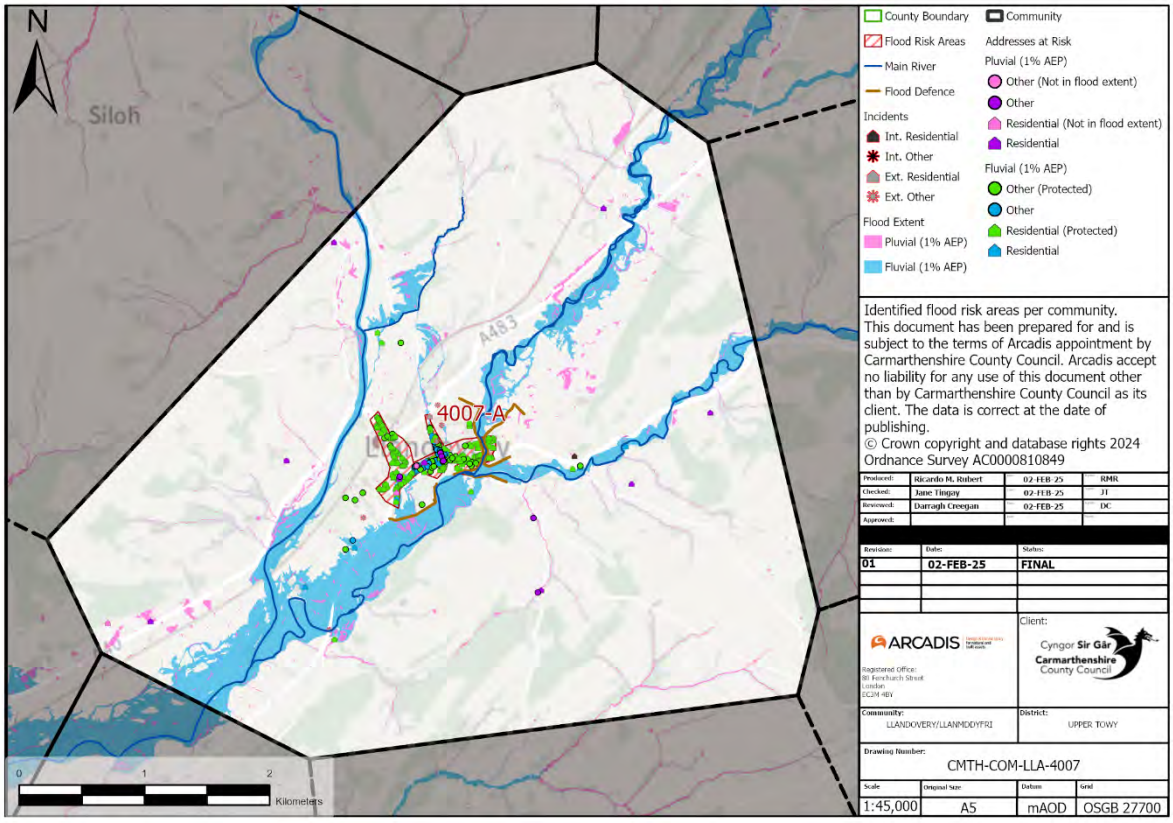

Figure 9-4 Llandovery Community Area

9.2.2 Historical Flood Events

Table 9-6 highlights that there have been 14 flooding incidents reported to the CCC FRM team between 2018 and 2024. When completed to the other 27 priory areas, this is below average reporting. DCWW have confirmed that they received 9 reports of flooding over the same period and it is assumed that local residents and business would contact NRW with regards to main river flooding.

Table 9-6 Historical Flood Events in Llandovery / Llanmddyfri

Event Type	Number of Occurrences	Flood incidents reported to other agencies
External Non-Residential	3	-
External Residential	9	9
Internal Non-Residential	0	-
Internal Residential	2	-

9.2.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Llandovery community area is presented below in Table 9-7. As properties across Llandovery are at a substantially greater risk of fluvial flooding than pluvial flooding, the mitigation of flood risk should be driven by NRW led actions and initiatives.

Table 9-7 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Llandovery / Llanmddyfri

Flood Type	Number of Properties at Risk
Pluvial Flooding	14
Fluvial Flooding	231

The primary receptors include Llandovery Town Centre which is shown to be at a risk of fluvial flooding while sections of Lower Road (A4069), the King's Road (A40), the A483 and Stone Street are shown to be at risk of both fluvial and pluvial flooding. The A40 and A483 are trunk roads and primary transport networks. Table 9-8 presents the number of receptors present within Llandovery that are at risk of flooding.

Table 9-8 Receptors in Llandovery / Llanmddyfri

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	6668	1185
Length of Rail (km)	1263	450
Environmental (n)	3	3
Agricultural Land (m^2)	2155308	341368
Residential Properties	159	10
Non-residential Properties	72	4
Key Services (n)	3	0
Town Centre	Llandovery Town Centre	
SFA Additional Sites	2	4
National Park	Bannau Brycheiniog / Brecon Beacons	
Listed Buildings (n)	121*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

9.2.4 FRM works in the area since FRMP-1

FRM work undertaken in Llandovery since the FRMP-1 are presented below in Table 9-9.

Table 9-9 FRM work undertaken in Llandovery since CCC FRMP-1.

Specific Area / Policy Unit Area	FRM (FRMP-1) Actions	Progress
Nant Bawddwr, Llandovery	We will continue to support the South Wales Trunk Road Agency (SWTRA) in their attempts to implement a solution to manage flows through the culvert.	Completed

9.2.5 Flood Risk Areas

Area Description

There is one flood risk area identified within Llandovery, labelled as 4007-A in Figure 9-5. Area 4007 is Llandovery town centre. Area 4033-A is a largely residential and is bordered by the Afon Towy and Afon Bran. The area is primarily at risk from fluvial flooding. More specific information regarding the risk of flooding within these areas can be found in Table 9-10.

Flood Defence Works

Works are being undertaking to upgrade the Llys Llanfair trash screen at Cilycwm Road where Nant Bawdwr enters a culverted section through town. During FRMP-1, CCTV surveys and maintenance was undertaken along the Nant Bawdwr.

There have also been discussions with partner agencies about management of the flood risk from the Nant Bawdwr. NRW have been reluctant to allow the watercourse to be diverted into the River Towy upstream of the town.

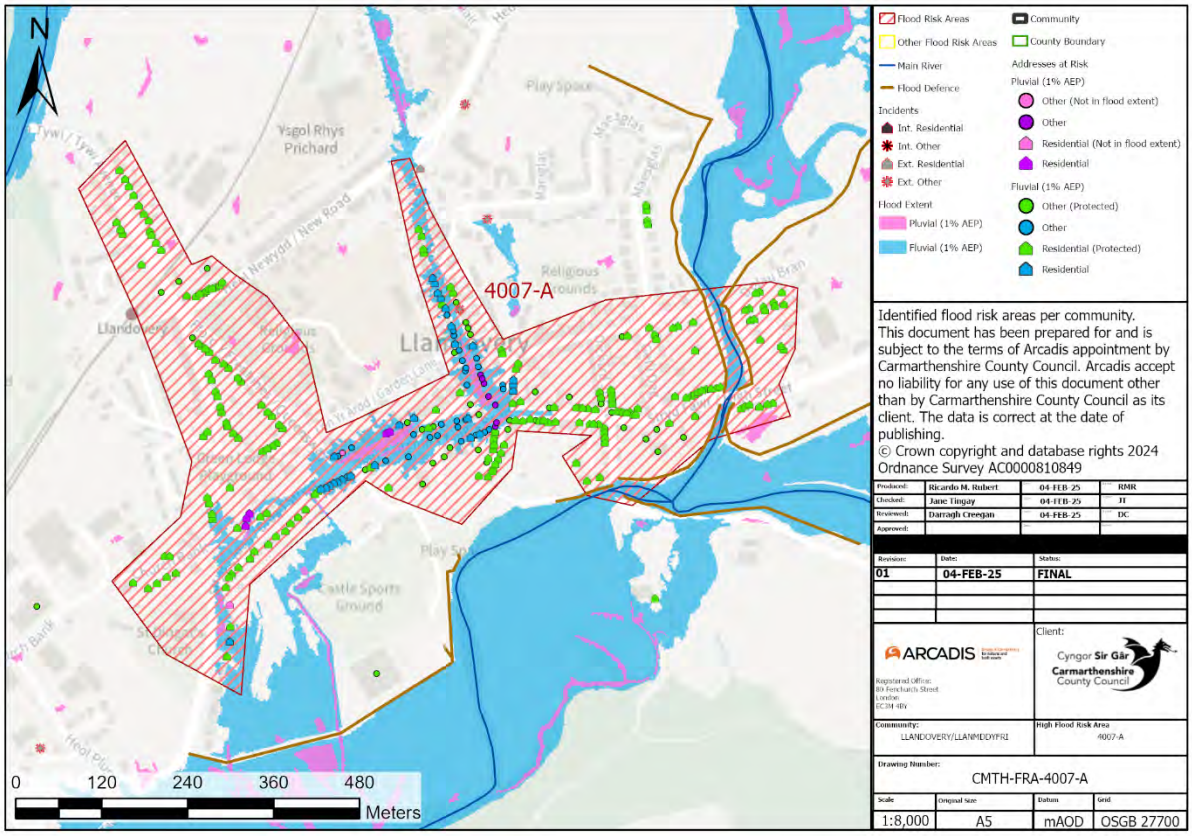

Figure 9-5 Flood Risk Area 4007-A

Table 9-10 Summary of Llandovery's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4007-A	• Average along the Bawdwr	• Fluvial: 313 • Pluvial: 15	• Caravan site • Llandovery College • Schools (Ysgol Rhys Prichard) • LLandovery Train Station and Railway • Heart of Wales railways line • Llandovery Hospital • Llandovery Fire Station • Nursing home • CCC depot – highways • Llandovery Golf Club • Main Roads (A4069, A40, A483) • Substations • Llandovery Post Office • Llandovery Library • LLandovery Tourist Information Centre • Church Bank Industrial Estate • Town Centre • Built heritage (Llandovery Castle)	• Yes	• LLFA, NRW, DCWW, Local Landowners, Charitable Trusts	• Desired (medium term)

9.2.6 Actions Identified

Following the identification of the flood risk areas across the Llandovery community, a list of actions was developed below in Table 9-11 to address, manage and reduce the risks of flooding.

Table 9-11 Long List of Potential Actions in Llandovery

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated costs
4007	Asset Management & Maintenance	Prevention / Protection	Business as usual – maintenance of fluvial defences in locality, culvert trash screens, channels, gullies.	Ongoing	~~£~~£
	Hard Engineering	Protection	Seek opportunities to influence NRW pertaining to the Bawdwr diversion and sluice gate. This would divert more peak flows away from ordinary watercourse culvert through town.	Medium / Long	£
	Asset Management & Maintenance	Review	Seek opportunities to work with DCWW and the Highways Authority to collate and map flood risk and drainage assets and undertake improved modelling of Nant Bawdwr. This could be supported through CCTV surveys as well as telemetry gauging to better understand flow regimes and improve accuracy.	Ongoing	~~£~~£~~£~~
	Natural Flood Management	Prevention	Seek opportunities to work with partner organisations and the Nutrient Management Board for Natural Flood Management techniques such as leaky dams, attenuation areas, wetlands, tree planting in catchments upstream of town which may provide attenuation and / or reduce peak flows to prevent flooding downstream.	Medium	~~£~~£~~£~~
	Property Flood Resilience	Preparedness	Seek opportunities to empower residents to take agency over own flood risk by exploring Property Flood Resilience measures.	Medium	£

9.3 Llanwrda - 4044

9.3.1 Community Area Description

Llanwrda (Figure 9-6) is a village and community in the Upper Towy RBD, in the east of Carmarthenshire. As of 2021, the total population of Llanwrda was approximately 464[30].

The Afon Towy flows through the community area. 1 in 3 people are at risk of fluvial flooding while 1 in 15 people are at risk of pluvial flooding in Llanwrda.

The area is largely rural with urbanisation around the town. The A40 and A482 pass through the community area. Llanwrda train station is also situated within the community area. There are also several listed buildings, largely within Llanwrda.

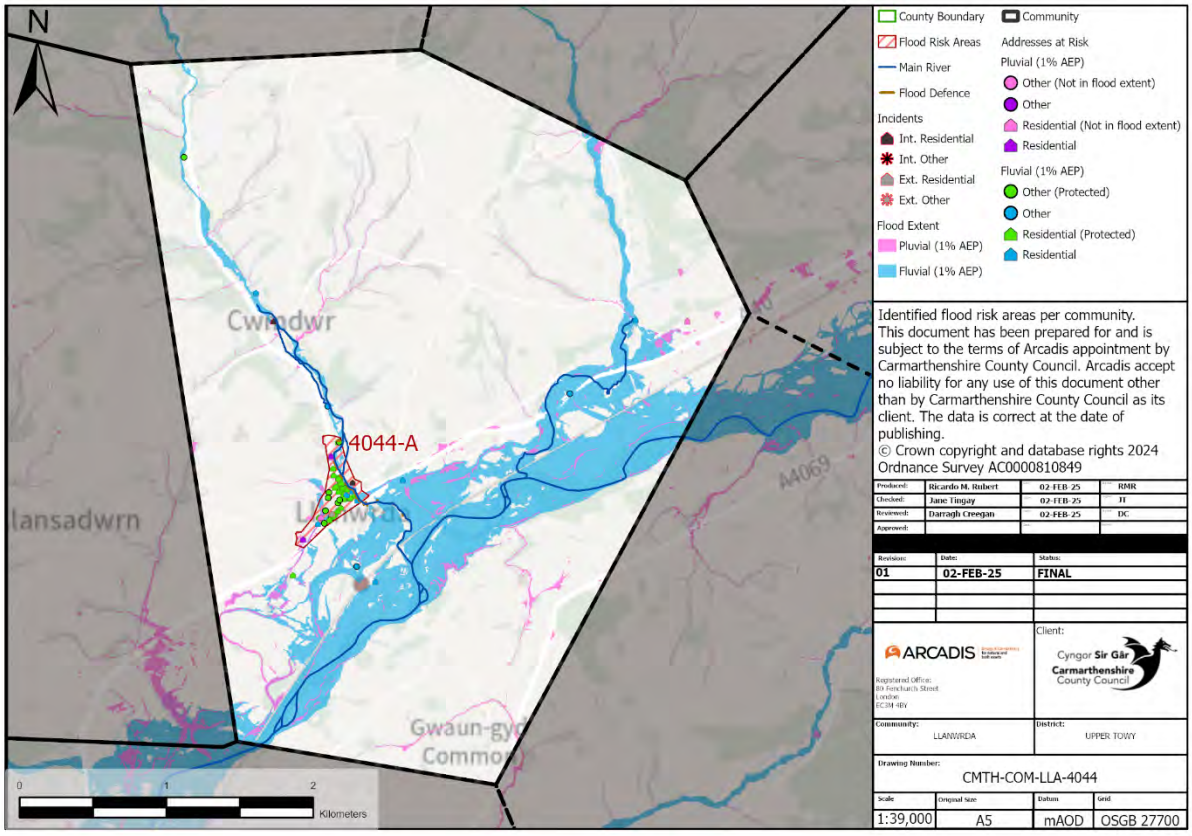

Figure 9-6 Llanwrda Community Area

[30] Llanwrda (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

9.3.2 Historical Flood Events

Table 9-12 highlights that there have been only 4 flooding incidents reported to the CCC FRM team between 2018 and 2024. Given the risk is predominately from the main rivers that NRW regulate and oversee in terms of flood risk management, it is reasonable to suggest that flooding issues are also being reported to NRW; but data from NRW suggests that no flooding incidents are being reported.

Table 9-12 Historical Flood Events in Llanwrda

Event Type	Number of Occurrences
External Non-Residential	0
External Residential	1
Internal Non-Residential	0
Internal Residential	3

9.3.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Llanwrda community area is presented below in Table 9-13. As properties across Llanwrda are at a substantially greater risk of fluvial flooding than pluvial flooding, the mitigation of flood risk should be driven by NRW led actions and initiatives.

Table 9-13 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Llanwrda

Flood Type	Number of Properties at Risk
Pluvial Flooding	6
Fluvial Flooding	40

Key receptors include the A482 and the A40 the local shops and public house. Table 9-14 presents the number of receptors present within Llanwrda that are at risk of flooding.

Table 9-14 Receptors in Llanwrda

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	3467	943
Length of Rail (km)	80	2
Environmental (n)	3	2
Agricultural Land (m^2)	2002592	219176
Residential Properties	33	5

Receptor	Fluvial Risk	Pluvial Risk
Non-residential Properties	7	0
Key Services (n)	2	0
Listed Buildings (n)	20*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

9.3.4 FRM works in the area since FRMP-1

No FRM work has been undertaken in Llanwrda since the previous FRMP-1.

9.3.5 Flood Risk Areas

Area Description

There is one flood risk area identified within Llandwrda, labelled as 4044-A in Figure 9-7. Area 4044-A is located on the western side of the community and centres over Llanwrda village. Area 4044-A is largely residential, with a few village services such as a shop and public house. The flood risk area is bordered by the Afon Dulais to the east, which is a main river and regulated by NRW. The area is primarily at risk from fluvial flooding. More specific information regarding the risk of flooding within these areas can be found in Table 9-15.

Flood Defence Works

None currently in progress.

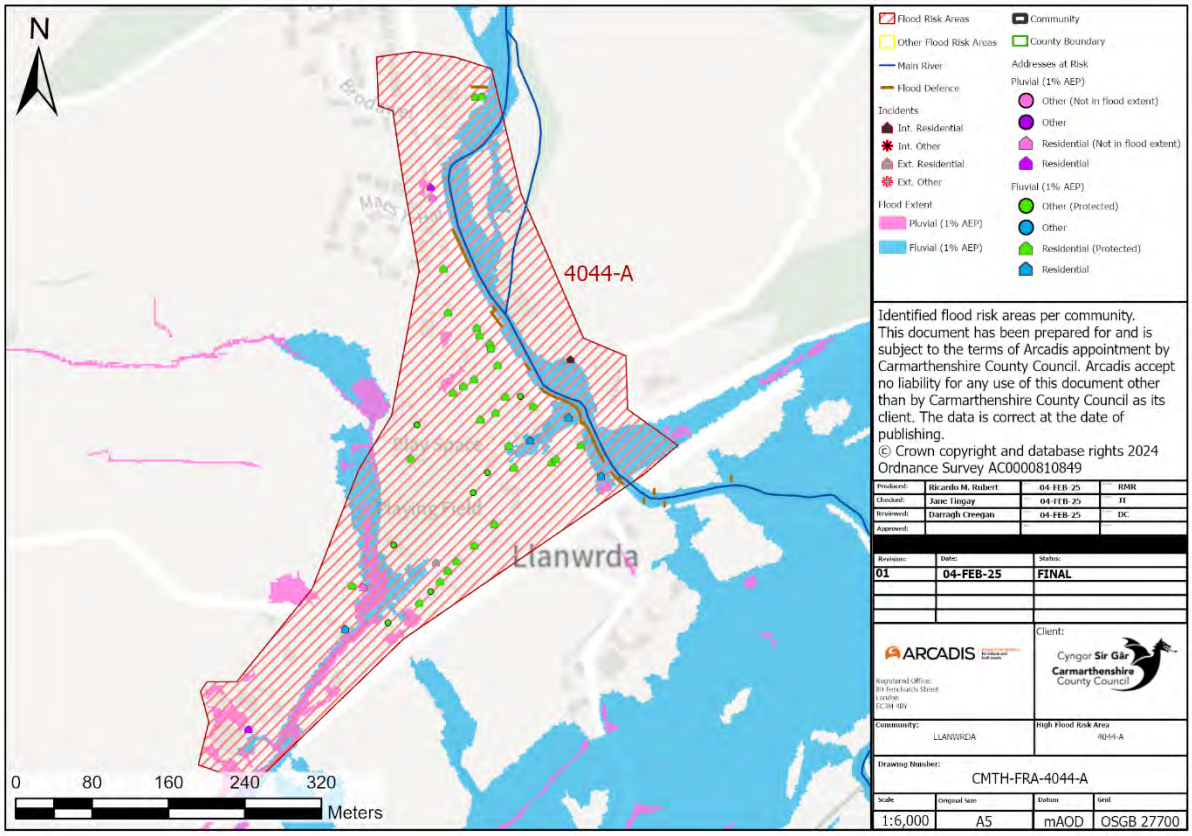

Figure 9-7 Flood Risk Area 4044-A

Table 9-15 Summary of Llanwrda's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4044-A	• Poor - some Highways survey of A482	• Fluvial: 45 • Pluvial: 4	• A482 • Llanwrda Railway Station • Heart of Wales railway line • Llanwrda Village Hall • A40	• No information provided	• LLFA, • NRW • Local Landowners, • Charitable Trusts	• Aspirational

9.3.6 Actions Identified

Following the identification of the flood risk areas across the Llanwrda community, a list of actions was developed below in Table 9-16 to address, manage and reduce the risks of flooding.

Table 9-16 Long List of Potential Actions in Llanwrda

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated costs
4044	Natural Flood Management	Prevention	Seek opportunities to work with the nutrient management board and explore Natural Flood Management techniques such as leaky dams, attenuation areas, wetlands, tree planting in upstream Afon Dulais catchment which may provide attenuation and / or reduce peak flows to prevent flooding downstream.	Medium	£££

10 Western River Basin District

10.1 Laugharne - 4058

10.1.1 Community Area Description

Laugharne (Figure 10-1) is a town in the Western RBD, on the south coast of Carmarthenshire. As of 2021, the total population of Laugharne was approximately 710.[31]

The community sits on the estuary of the Afon Taf where, 1 in 12 people are at risk of fluvial flooding while 1 in 22 people are at risk of pluvial flooding in Laugharne.

The area is largely rural and coastal with urbanisation around the town. The A4066 passes through the community area. There are also several listed buildings, largely within the town.

[31] Laugharne (Carmarthenshire, Wales / Cymru, United Kingdom) - Population Statistics, Charts, Map, Location, Weather and Web Information (citypopulation.de)

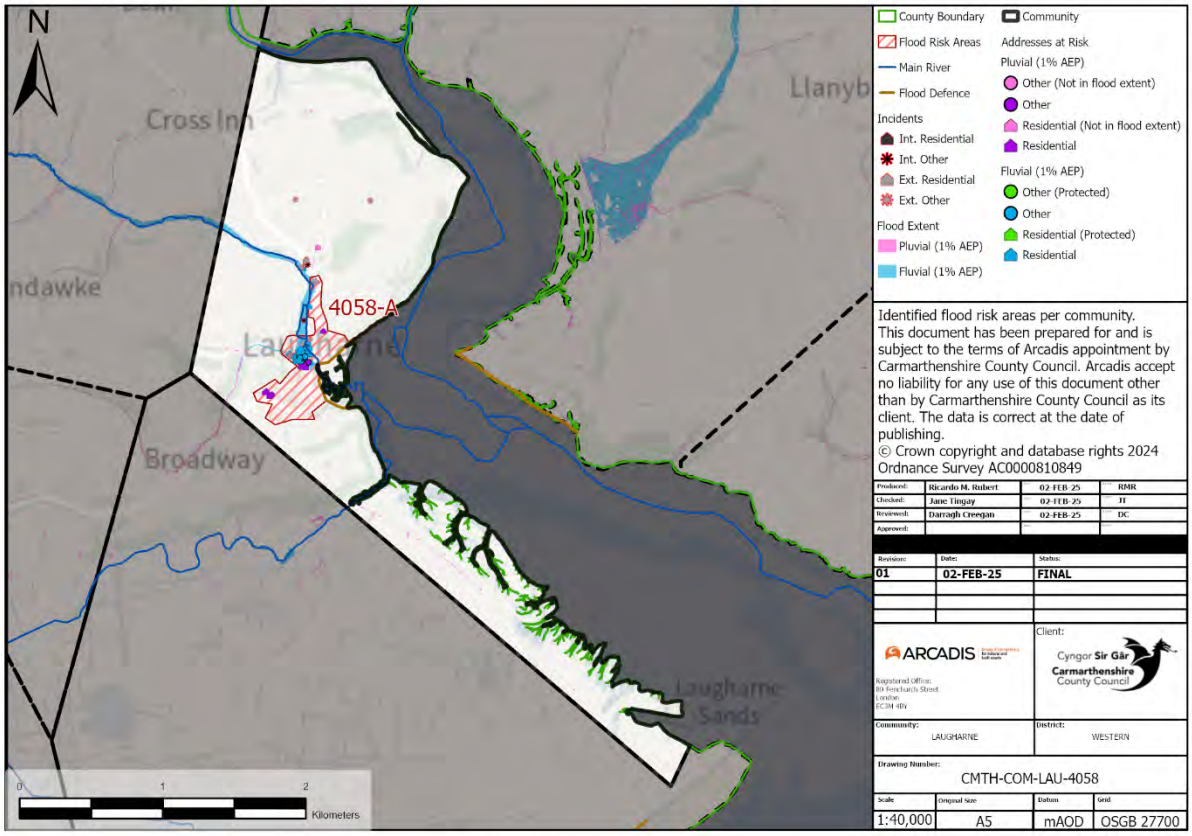

Figure 10-1 Laugharne Community Area

10.1.2 Historical Flood Events

Historically there has been significant flooding in Laugharne in 2014, 2020 and 2023. Table 10-1 shows that there have been only 11 flooding incidents reported to the CCC FRM team between 2018 and 2024 within Laugharne. Of our 28 priority areas, the Laugharne community ranks among the lowest in terms of reporting flooding issues. DCWW have recorded two flooding incidents and NRW recorded four over the same period.

Table 10-1 Historical Flood Events in Laugharne

Event Type	Number of Occurrences	Flood incidents reported to partner agencies
External Non-Residential	0	-
External Residential	8	6
Internal Non-Residential	0	-
Internal Residential	3	-

10.1.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Laugharne community area is presented below in Table 10-2. As properties across Laugharne are at a greater risk of fluvial flooding, the risk of flooding within this community should be primarily managed by NRW.

Table 10-2 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Laugharne

Flood Type	Number of Properties at Risk
Pluvial Flooding	14
Fluvial Flooding	47

The Lacques and the River Coran afford the main fluvial flood risk in the area. Pluvial flood risk is associated with the historical drainage that serves the town. More recently changes in agricultural practices, maize planting and harvesting in late autumn have also impacted negatively on flood risk. The main transport link, namely the A4066 is shown to be at risk of both fluvial and pluvial flooding. Table 10-3 presents the number of receptors present within Laugharne that are at risk of flooding.

Table 10-3 Receptors in Laugharne

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	1582	464
Length of Rail (km)	0	0
Environmental (n)	4	2
Agricultural Land (m^2)	19444	10976
Residential Properties	23	9
Non-residential Properties	6	1
Listed Buildings (n)	54*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

10.1.4 FRM works in the area since FRMP-1

FRM work undertaken in Laugharne since the FRMP-1 are presented below in Table 10-4.

Table 10-4 FRM work undertaken in Laugharne since CCC FRMP-1.

Specific Area (Policy Unit Area)	FRM (FRMP-1) Actions	Progress
Laques, Laugharne	CCC will undertake a CCTV survey of the Laques culvert and action any maintenance or repairs accordingly.	Complete

10.1.5 Flood Risk Areas

Area Description

One flood risk area identified within Laugharne, labelled as 4058-A in Figure 10-2. Area 4058-A is centred on Laugharne town. Area 4058-A is a mix of residential, green and coastal spaces. The Afon Coran runs through this flood risk area and there are NRW defences that afford neighbouring properties flood resilience. The area is at risk from both fluvial and pluvial flooding. More specific information regarding the risk of flooding within these areas can be found in Table 10-5.

Flood Defence Works

Minor works have been done to clear and repair the drainage at the top end of the town. CCC have also engaged with landowners about their practices in an attempt to highlight the pluvial flood risk associated with certain agricultural practices.

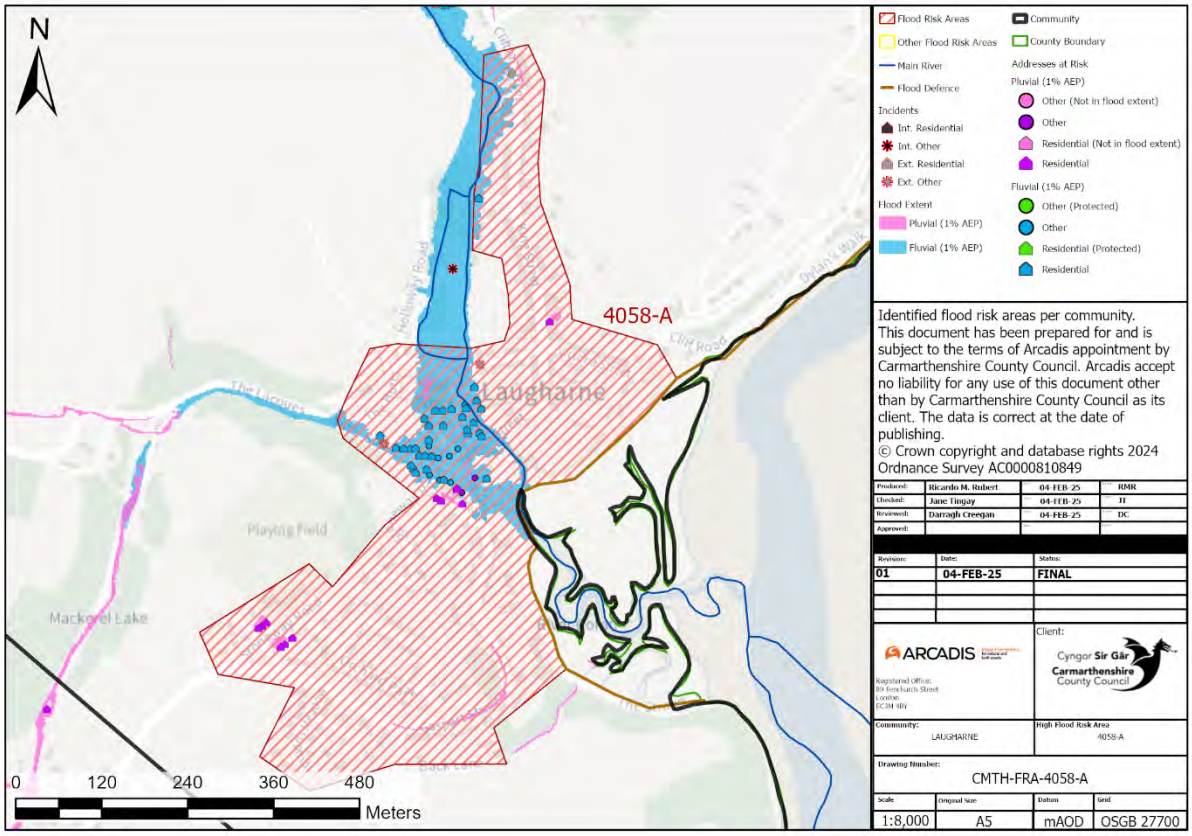

Figure 10-2 Flood Risk Area 4058-A

Table 10-5 Summary of Laugharne's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4058-A	• Poor	• Fluvial: 45 • Pluvial: 13	• Residents • Highway (A4066) • Town Centre • Built Heritage and Listed Buildings • Small tourist area	• No information provided	• NRW, • Welsh Government • Local Landowner • Charitable Trusts • Highways • DCWW • CCC • LLFA	• Initiated (post flooding winter 2023/24)

10.1.6 Actions Identified

Following the identification of the flood risk areas across the Laugharne community, a list of actions was developed below in Table 10-6 to address, manage and reduce the risks of flooding.

Table 10-6 Long List of Potential Actions in Laugharne

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated costs
4058	Natural Flood Management	Prevention	Seek opportunities to implement Natural Flood Management across agricultural land on Afon Coran and ordinary watercourse catchments upstream of the town could reduce peak flows and combat surface water related issues.	Long	£££

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated costs
	Asset Management & Maintenance	Prevention / Protection	Improve understanding of CCC assets (including drainage) through data review and surveys.	Ongoing	££
	Property Flood Resilience	Preparedness	Empower residents to take agency over own flood risk by exploring Property Flood Resilience measure.	Medium	£

10.2 Llanddowror - 4061

10.2.1 Community Area Description

Llanddowror (Figure 10-3) is a village and community in the Western RBD, in the southwest of Carmarthenshire. As of 2021, the total population of Llanddowror was approximately 787[32].

The Afon Taf main river and an ordinary watercourse, the Allt Cwmbrwyn, flow through the community area. 1 in 14 people are at risk of fluvial flooding while 1 in 52 people are at risk of pluvial flooding in Llanddowror. The area is largely rural with urbanisation around Llanddowror village. The new A477 trunk road passes through the community area. There are a few listed buildings within the community area.

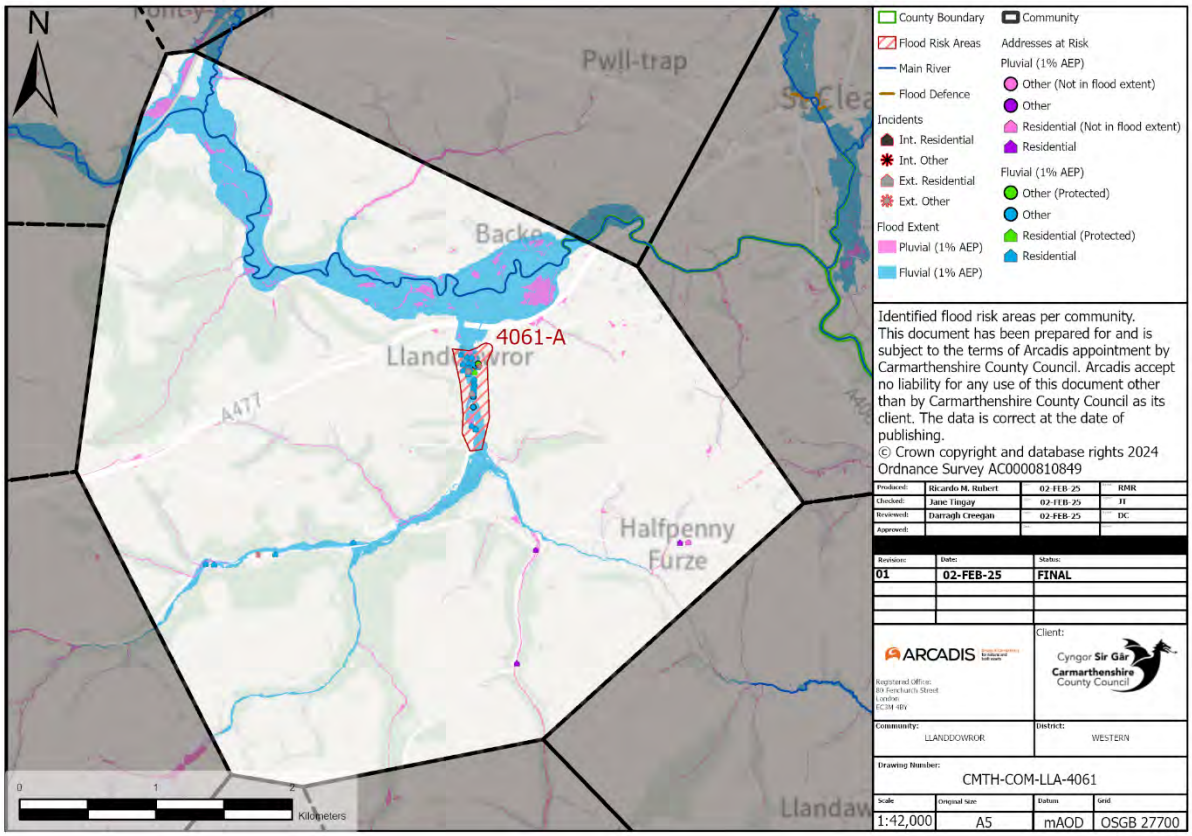

Figure 10-3 Llanddowror Community Area

[32] Llanddowror (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

10.2.2 Historical Flood Events

Historically there has been significant flooding in Llanddowror in 2009, 2023. Table 10-7 shows that there have been only 5 flood incidents reported to the CCC FRM team between 2018 and 2024 within Llanddowror. Of our 28 priority areas, the Llanddowror community ranks among the lowest in terms of reporting flooding issues.

Table 10-7 Historical Flood Events in Llanddowror

Event Type	Number of Occurrences
External Non-Residential	1
External Residential	4
Internal Non-Residential	0
Internal Residential	0

10.2.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Llanddowror community area is presented below in Table 10-8. As properties across Llanddowror are at a greater risk of fluvial flooding from an ordinary watercourse, the risk of flooding within this community will be primarily managed by CCC.

Table 10-8 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Llanddowror

Flood Type	Number of Properties at Risk
Pluvial Flooding	4
Fluvial Flooding	33

Table 10-9 presents the number of receptors present within Llanddowror that are at risk of flooding.

Table 10-9 Receptors in Llanddowror

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	3112	1239
Length of Rail (km)	0	0
Environmental (n)	15	0
Agricultural Land (m^2)	1488616	206552
Residential Properties	16	4
Non-residential Properties	0	0
Listed Buildings (n)	9*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

10.2.4 FRM works in the area since FRMP-1

No FRM work or actions were undertaken in Llanddowror post the FRMP-1.

10.2.5 Flood Risk Areas

Area Description

One flood risk area has been identified within Llanddowror, labelled as 4061-A in Figure 10-4. Area 4061-A is centred on Llanddawror village. Area 4061-A is a mix of green and residential space. An ordinary watercourse, the Allt Cwmbrwyn flows through the area in a south-north direction. The area is primarily at risk from fluvial flooding. More specific information regarding the risk of flooding within these areas can be found in Table 10-10.

Flood Defence Works

None currently in progress. Some minor works carried our previously.

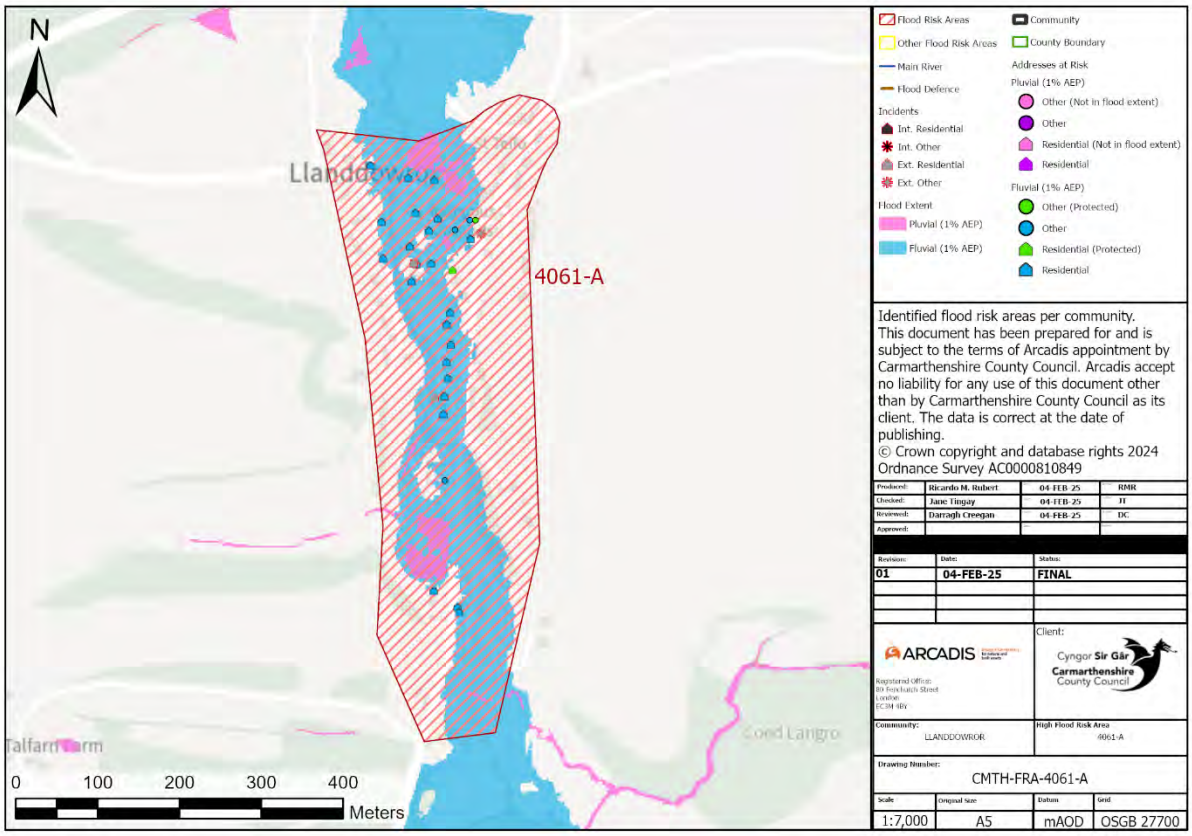

Figure 10-4 Flood Risk Area 4061-A

Table 10-10 Summary of Llanddowror's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4061-A	• Poor	• Fluvial: 29 • Pluvial: 0	• Residential properties • Highway (A477)	• No information provided	• NRW, Welsh Government, Local Landowners, Charitable Trusts, CCC, NRW	• Desired (long-term)

10.2.6 Actions Identified

Following the identification of the flood risk areas across the Llanddowror community, a list of actions was developed below in Table 10-11 to address, manage and reduce the risks of flooding.

Table 10-11 Long List of Potential Actions in Llanddowror

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated costs
4061	Natural Flood Management	Prevention	Seek opportunities to explore Natural Flood Management techniques in upper catchment such as leaky dams and gully blocking could attenuate runoff and reduce downstream pressures.	Long	£££
	Property Flood Resilience	Preparedness	Empower residents to take agency over own flood risk by exploring Property Flood Resilience measures.	Long	£

10.3 Llansteffan - 4254

10.3.1 Community Area Description

Llansteffan (Figure 10-5) is a village and community in the Western RBD, in the southwest of Carmarthenshire. Llansteffan sits on the estuary of the Afon Towy. As of 2021, the total population of Llansteffan was approximately 887[33].

The primary watercourse in the community is the Nant Jac however there are other smaller ordinary watercourses that flow across the community and discharge at Ferry Point and Scots Bay. 1 in 177 people are at risk of fluvial flooding while 1 in 32 people are at risk of pluvial flooding in Llansteffan. The area is largely rural and coastal with urbanisation around Llansteffan village. The B4312 is the main transport route which passes through the community. There are a few listed buildings within the community area, mostly within the Llansteffan village.

[33] Llansteffan (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

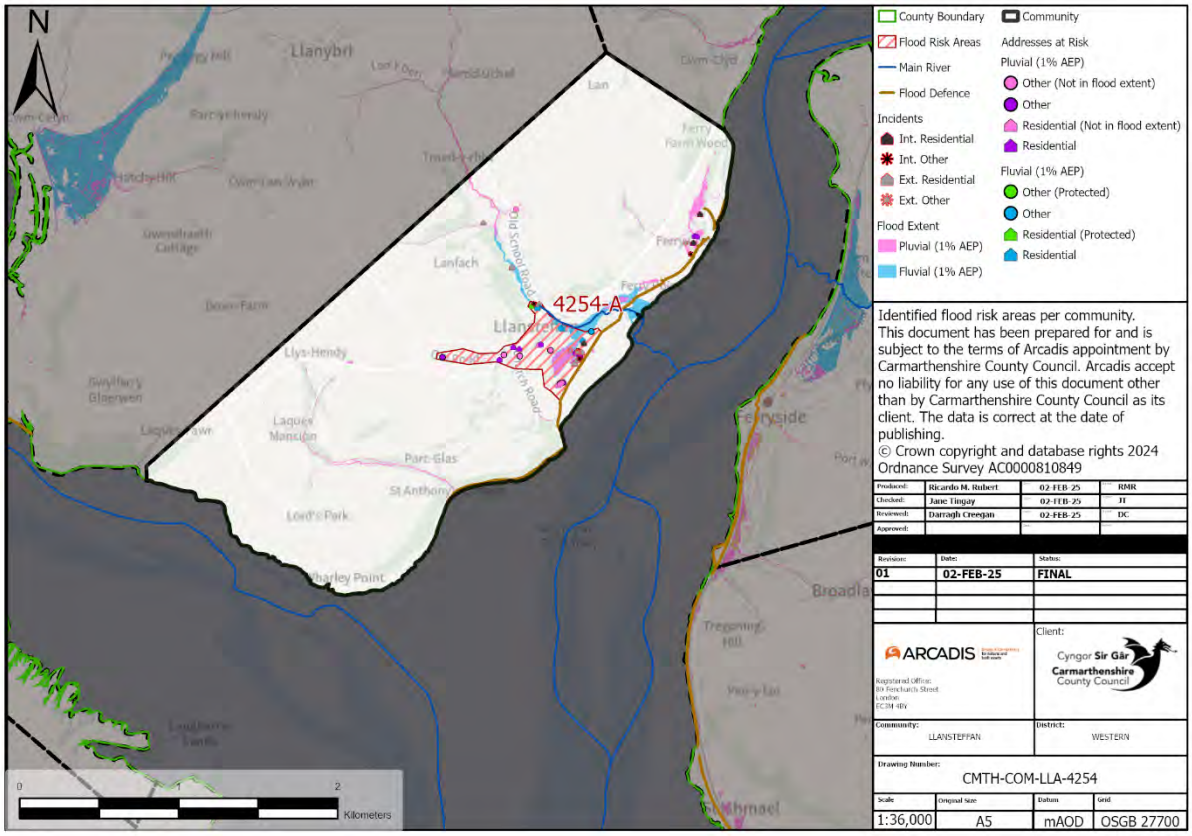

Figure 10-5 Llansteffan Community Area

10.3.2 Historical Flood Events

There was not a history of significant flooding at Llansteffan until Storm Gertit on 30th December 2023 and Storm Henk on the 2nd January 2024. During this event over 20 properties flooded internally, some to a depth of 600mm (2-foot). A full S19 investigation report was undertaken and the cause attributed to prolonged rainfall and a saturdated catchment which resulted in the Nant Jac overtopping the banks of the watercourse. On the 18th December 2024 the Nant Jac again burst its banks again and 10 properties were flooded.

Table 10-12 shows that between 2018 and 2024, there have been 66 incidents of flooding reported to the FRM team at CCC. The majority of these are associated with the events detailed above. This is above average when compared to the other high-risk communities, but comparable to other communities that have had recent significant flooding.

We are also aware that the community have reported five incidents to NRW as the lower Nant Jac is a main river and issues relating to the highways drainage have been reported to CCC Highways team.

Table 10-12 Historical Flood Events in Llansteffan

Event Type	Number of Occurrences	Incidents reported to partner agencies
External Non-Residential	0	-
External Residential	17	4
Internal Non-Residential	2	-
Internal Residential	47	1

10.3.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Llansteffan community area is presented below in Table 10-13. As properties across Llansteffan are shown to be at a greater risk of pluvial flooding, the risk of flooding within this community will be primarily managed by CCC. However, it is incumbent on NRW to manage the flood risk from the main river and DCWW to support in the process.

Table 10-13 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Llansteffan

Flood Type	Number of Properties at Risk
Pluvial Flooding	26
Fluvial Flooding	16

Receptors of the most recent flooding include properties on the Green, properties adjacent to the Nant Jac and properties along High Street. The main transport link, the B4312, is at risk from pluvial flooding. Table 10-14 presents the number of receptors present within Llansteffan that are at risk of flooding.

Table 10-14 Receptors in Llansteffan

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	787	563
Length of Rail (km)	0	0
Environmental (n)	2	2
Agricultural Land (m^2)	42232	34044
Residential Properties	3	10

Receptor	Fluvial Risk	Pluvial Risk
Non-residential Properties	0	3
Key Services (n)	0	3
Residential Allocation	0	1
Listed Buildings (n)	25*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

10.3.4 FRM works in the area since FRMP-1

FRM work undertaken in Llansteffan since the FRMP-1 are presented below in Table 10-15.

Table 10-15 FRM work undertaken in Llansteffan since CCC FRMP-1.

Specific Area (Policy Unit Area)	FRM (FRMP-1) Actions	Progress
The Green, Llansteffan	Installation of pumps to chamber on the Green (dependant on beach levels).	Not actioned as the community were not amenable to that at the time.

10.3.5 Flood Risk Areas

Area Description

One flood risk area has been identified within Llansteffan, labelled as 4254-A in Figure 10-6. Area 4254-A is centred around the village of Llansteffan. Area 4254-A is a mix of residential, green and coastal spaces. An ordinary watercourse / main river, the Nant Jac, runs along the northern border of this flood risk area. The area is at risk from both pluvial and fluvial flooding. More specific information regarding the risk of flooding within these areas can be found in Table 10-16.

Flood Defence Works

Post the Storm Henk and Storm Gerit significant flood works have been undertaken including, but not exclusive to:

- A comprehensive CCTV survey of the drainage network.
- Meetings with NRW and DCWW.
- Evaluation of the Nant Jac highways wall.

- Installation of telemetry to provide data on water levels and flood risk.
- Development and enacting a robust asset management plan of the beach outfalls.
- Provision of flood barriers.
- Community meetings and 1-2-1 sessions with local residents.

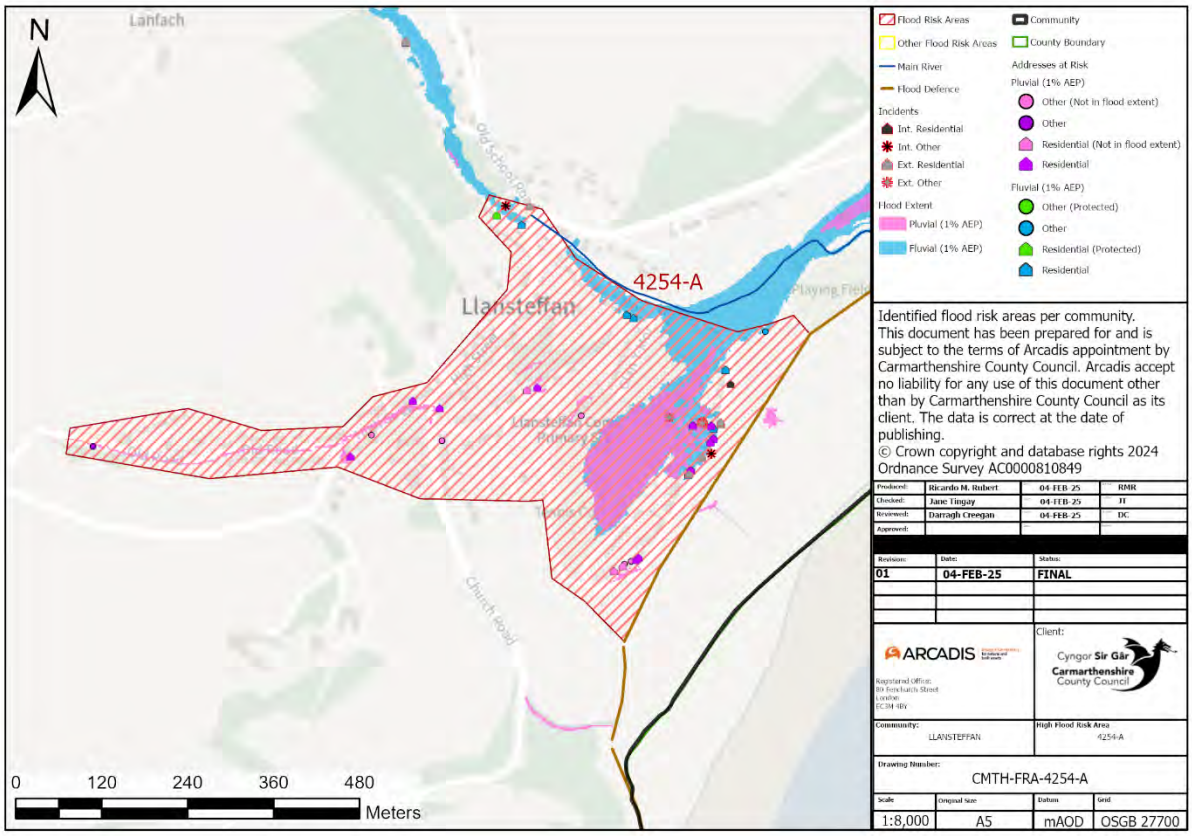

Figure 10-6 Flood Risk Area 4254

Table 10-16 Summary of Llansteffan's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4254-A	• Average (good on The Green)	• Fluvial: 15 • Pluvial: 22	• Residents and highway • Llansteffan Primary School • DCWW Pumping Station • Small shops and beach (tourist)	• No information provided	• DCWW, CCC, NRW, LLFA, Highways, Welsh Government, Local Landowners, LLFA, Charitable Trusts	• Initiated post winter 2023/24 floods

10.3.6 Actions Identified

Following the identification of the flood risk areas across the Llansteffan community, a list of actions was developed below in Table 10-17 to address, manage and reduce the risks of flooding.

Table 10-17 Long List of Potential Actions in Llansteffan

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Costs
4254	Asset Management & Maintenance	Prevention / Protection	Business as usual – undertake regular maintenance of key assets, principally the beach outfalls but including highways drainage, sewer networks, outfalls and watercourses.	Ongoing	££
	Property Flood Resilience	Preparedness	Empower residents to take agency over own flood risk by exploring Property Flood Resilience measures and development of a community flood group.	Short	£
	Natural Flood Management	Prevention	Implementing Natural Flood Management capital schemes across upper catchment of Nant Jac and other ordinary watercourses such as woodland planting, gully blocking, leaky dams which could slow could reduce peak flows on these watercourses.	Short	£££
	Hard Engineering	Protection	Implement changes to the outfalls that service the Morfa.	Short	£££
	Improved flood mapping and modelling	Review	Undertake a detailed hydrological and hydraulic modelling could provide greater insights into flooding mechanisms and flow regimes for this community to better tailor actions.	Short	££
	Hard Engineering	Protection	Support the Highways Authority explore potential of improving highways drainage and increasing capacity of assets.	Medium	£

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Costs
	Property Flood Resilience	Protection and prevention	Undertake a strategic review of flood risk in the area and develop a long list of options for the further management of flood risk. Alongside this, develop a business case to seek funding to implement any potential options.	Short - medium	££

10.4 St Clears / Sanclêr - 4049

10.4.1 Community Area Description

St Clears (Figure 10-7) is a town in the Western RBD, in the southwest of Carmarthenshire. As of 2021, the total population of St Clears was approximately 3,220[34]. Several rivers flow through this community area, namely the Afon Cynin, the Afon Dewi Fawr and the Afon Taf. 1 in 215 people are at risk of fluvial flooding while 1 in 140 people are at risk of pluvial flooding in St Clears. The area is largely rural with urbanisation around the town. The A40, A477 and A4066 pass through the community area. There are a few listed buildings within the community area, along the main road through St Clears.

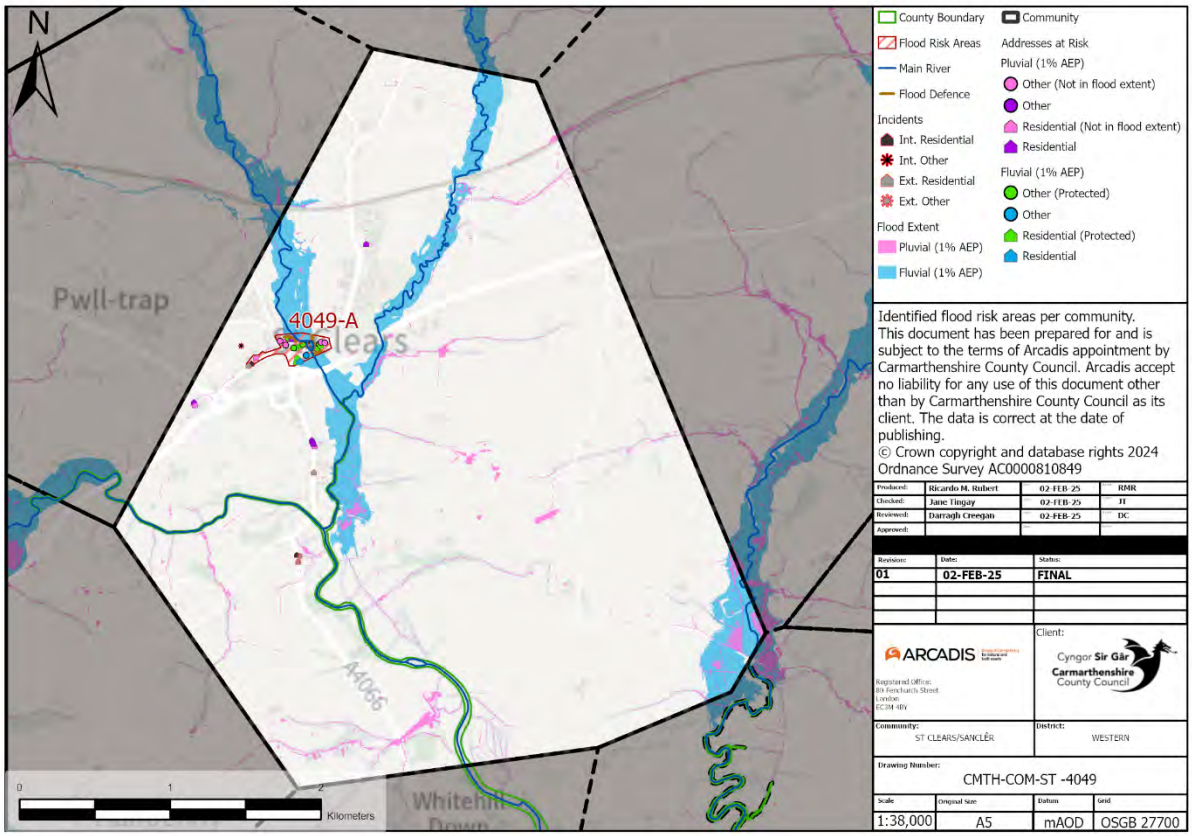

Figure 10-7 St Clears Community Area

[34] St. Clears (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

10.4.2 Historical Flood Events

Historically there has been significant flooding in St Clears in 2018, 2023 and 2024. Table 10-18 shows that there have been only 10 flood incidents reported to the CCC FRM team between 2018 and 2024 within St Clears. Of our 28 priority areas, the St Clears community ranks among the lowest in terms of reporting flooding issues. DCWW have recorded 5 flooding incidents over the same period.

Table 10-18 Historical Flood Events in St Clears / SanclË†r

Event Type	Number of Occurrences	Flooding incidents reported to partner organisations
External Non-Residential	1	-
External Residential	5	5
Internal Non-Residential	1	-
Internal Residential	3	-

10.4.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the St Clears community area is presented below in Table 10-19. As properties across St Clears are at a greater risk of fluvial flooding, the mitigation of risk will be led by NRW.

Table 10-19 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in St Clears / SanclË†r

Flood Type	Number of Properties at Risk
Pluvial Flooding	17
Fluvial Flooding	30

Table 10-20 presents the number of receptors present within St Clears that are at risk of flooding.

Table 10-20 Receptors in St Clears / SanclË†r

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	1103	582
Length of Rail (km)	17	81
Environmental (n)	3	2
Agricultural Land (m^2)	820016	232776
Residential Properties	3	7

Receptor	Fluvial Risk	Pluvial Risk
Non-residential Properties	1	0
Key Services (n)	0	0
Town Centre	St. Clears Town Centre	
Residential Allocation	1	2
Proposed Employment	0	1
Listed Buildings (n)	18*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

10.4.4 FRM works in the area since FRMP-1

No FRM work or actions were undertaken in St Clears since the FRMP-1.

10.4.5 Flood Risk Areas

Area Description

One flood risk area identified within St Clears, labelled as 4049-A in Figure 10-8. Area 4049-A is located on the western side of St Clears town. Area 4049-A is largely residential. The Afon Cynin flows through this flood risk area. The area is largely at risk from fluvial flooding. More specific information regarding the risk of flooding within these areas can be found in Table 10-21.

Flood Defence Works

None currently in progress.

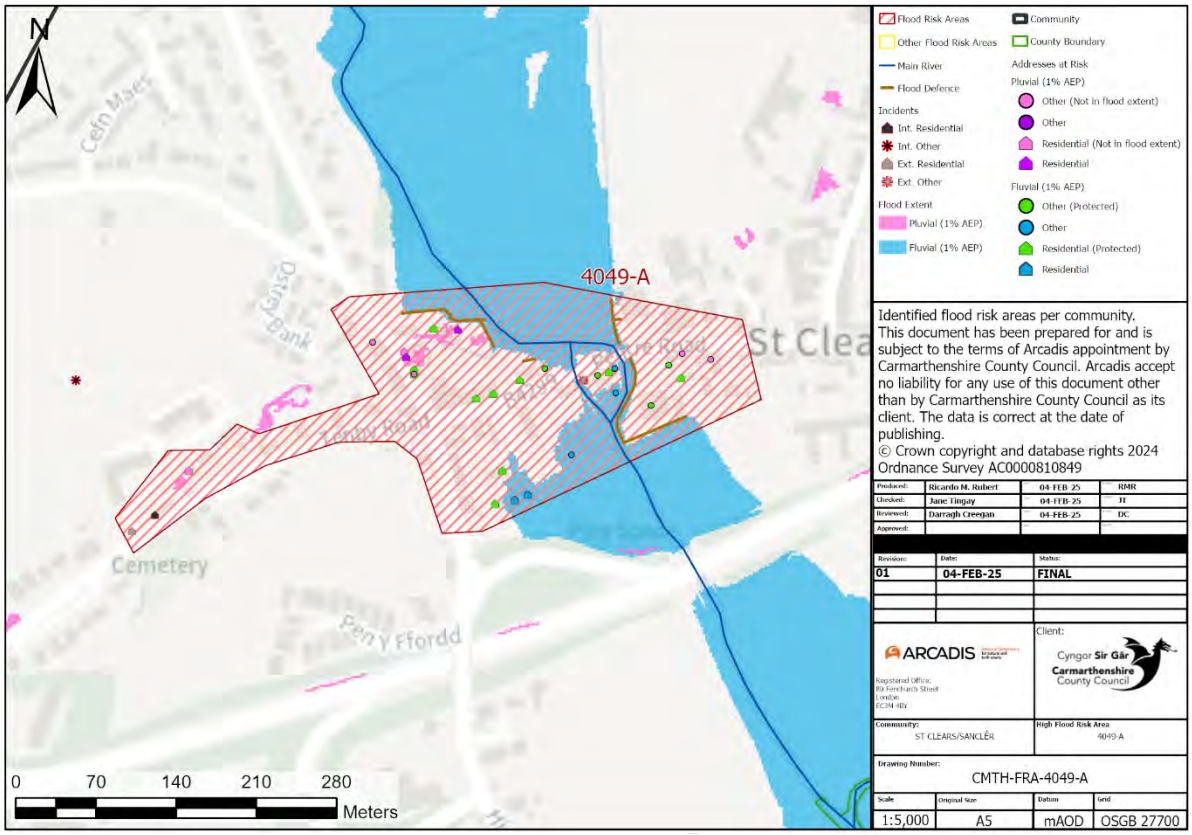

Figure 10-8 Flood Risk Area 4049-A

Table 10-21 Summary of St Clears / SanclË†r's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4049-A	• Average	• Fluvial: 30 • Pluvial: 9	• Residents • Highway (B4299, A3066) • Listed Buildings / Town Centre • A40 • School (Ysgol Griffith Jones) • St Clears Railway Station • South Wales Main Line • Leisure Centre • St Clears Wastewater Treatment Works • St Clears Public Library • Listed Buildings (e.g. Island House) • Small retail and commercial	• Minor localised flooding	• NRW • Welsh Government • LLFA • CCC • Highways • DCWW • Local Landowners • Charitable Trusts	• Desired (long-term)

10.4.6 Actions Identified

Following the identification of the flood risk areas across the St Clears community, a list of actions was developed below in Table 10-22 to address, manage and reduce the risks of flooding.

Table 10-22 Long List of Potential Actions in St Clears

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Estimated Costs
4049	Property Flood Resilience	Preparedness	Empower residents to take agency over own flood risk by exploring Property Flood Resilience measures and development of a community flood group	Long	£
	Asset Management & Maintenance	Preparedness	Seek opportunities to work with the Highways Authority and DCWW and develop a 'master map' of sub-terranean drainage systems	Long	££

10.5 Whitland - 4029

10.5.1 Community Area Description

Whitland (Figure 10-9) is a town and community in the Western RBD, in the west of Carmarthenshire. As of 2021, the total population of Whitland was approximately 1,907[35].

Several rivers flow through this community area, namely the Afon Gronw and the Afon Taf. 1 in 13 people are at risk of fluvial flooding while 1 in 38 people are at risk of pluvial flooding in Whitland.

The area is largely rural with urbanisation around the town. The A40, A477 and A4066 pass through the community area. Whitland train station and the South Wales Main Line run through this community area. There is one listed building within the community area.

[35] Whitland (Community, United Kingdom) - Population Statistics, Charts, Map and Location (citypopulation.de)

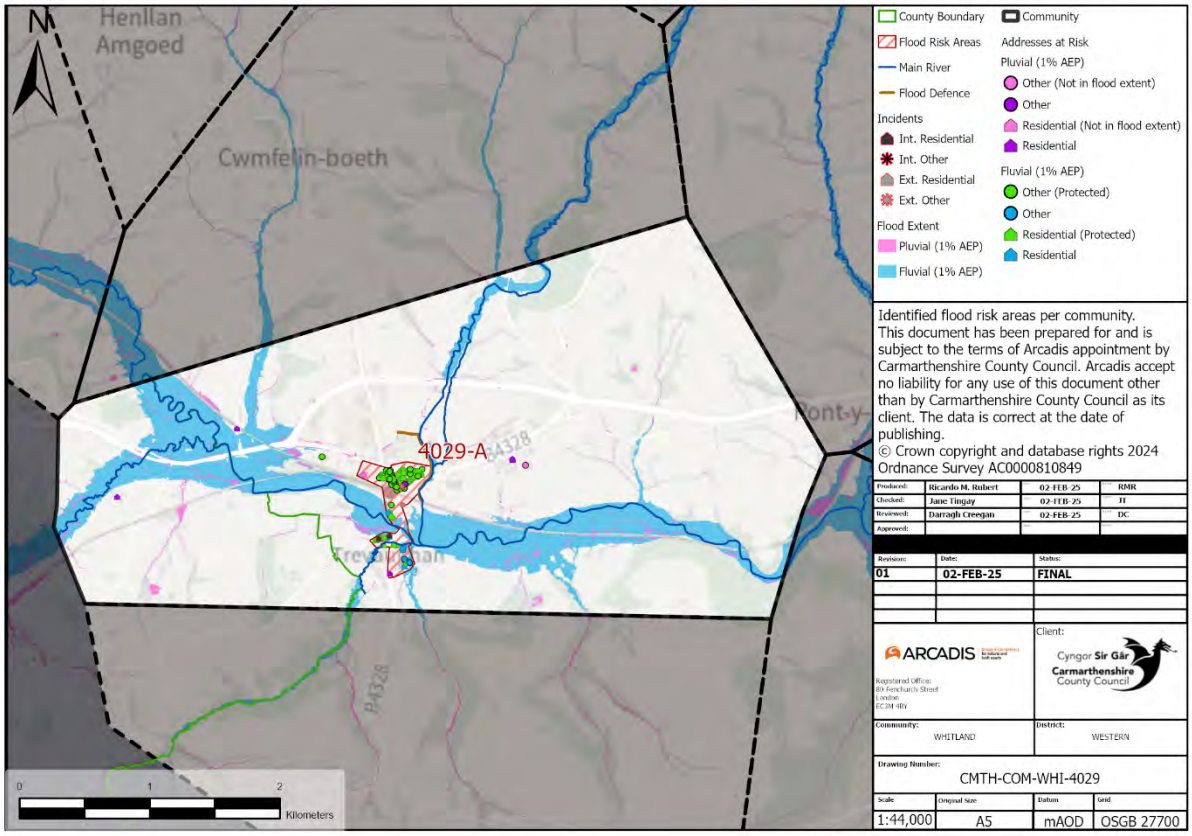

Figure 10-9 Whitland Community Area

10.5.2 Historical Flood Events

Historically there has been significant flooding in Whitland in 2012. Table 10-23 highlights that there have been only 6 flood incidents reported to the CCC FRM team between 2018 and 2024 within Whitland. NRW have 1 report of flooding and DCWW have 20 reports in the same period.

Table 10-23 Historical Flood Events in Whitland

Event Type	Number of Occurrences	Flood incidents reported to partner organisations
External Non-Residential	2	-
External Residential	0	21
Internal Non-Residential	0	-
Internal Residential	4	-

10.5.3 Community Area Flood Risk

Data relating to the number of properties at risk of either fluvial or pluvial flooding across the Whitland community area is presented below in Table 10-24.

As properties across Whitland are at a substantially greater risk of fluvial flooding, the risk of flooding within this community should be primarily managed by NRW. However, a strategic evaluation of flood risk combined with a detailed survey of the drainage in Whitland town centre has highlighted that Whitland is ranked 100th across all of Wales for fluvial flood risk and 281st for pluvial risk. This places the area in the top 5% and top 13% for flood risk respectively.

Table 10-24 Total Number of Addresses at Risk of Pluvial and Fluvial Flooding in Whitland

Flood Type	Number of Properties at Risk (CaRR)	CCC evaluation of flood risk (2022)
Pluvial Flooding	15	15 props at 3.33% AEP
Fluvial Flooding	145	18 props at 1% AEP 53 props at 0.1% AEP

Table 10-25 presents the number of receptors present within Whitland that are at risk of flooding.

Table 10-25 Receptors in Whitland

Receptor	Fluvial Risk	Pluvial Risk
Length of Road (km)	1859	483
Length of Rail (km)	452	34
Environmental (n)	19	13
Agricultural Land (m^2)	1908424	135880
Residential Properties	50	5
Non-residential Properties	15	1
Key Services (n)	2	0
Town Centre	Whitland Town Centre	
SFCA Additional Sites	1	3
Residential Allocation	0	1
Proposed Employment Areas	0	1
Listed Buildings (n)	1*	

**The count here examines the number of listed buildings present across the community area which has been identified as a high-risk area. The count does not suggest that the total number of buildings are at risk of both fluvial and pluvial flooding – but rather that they are at a general risk of flooding.*

10.5.4 FRM works in the area since FRMP-1

In 2022, CCC were successful in their bid to Welsh Government for funding to undertake a review of flooding history and assessment of flood mechanisms in the area and develop a business case to evaluate different flood mitigation options. This work is currently in the Outline Business Case phase.

10.5.5 Flood Risk Areas

Area Description

One flood risk area identified within Whitland, labelled as 4029-A in Figure 10-10. Area 4029-A is located in the centre of the community. Area 4029-A is a mix of residential and commercial space. The railway line passes through this flood risk area in an east-west direction. The Afon Taf also flows through this flood risk area. The area is largely at risk from fluvial flooding. More specific information regarding the risk of flooding within these areas can be found in Table 10-26.

Flood Defence Works

Outline Business Case is ongoing – see above.

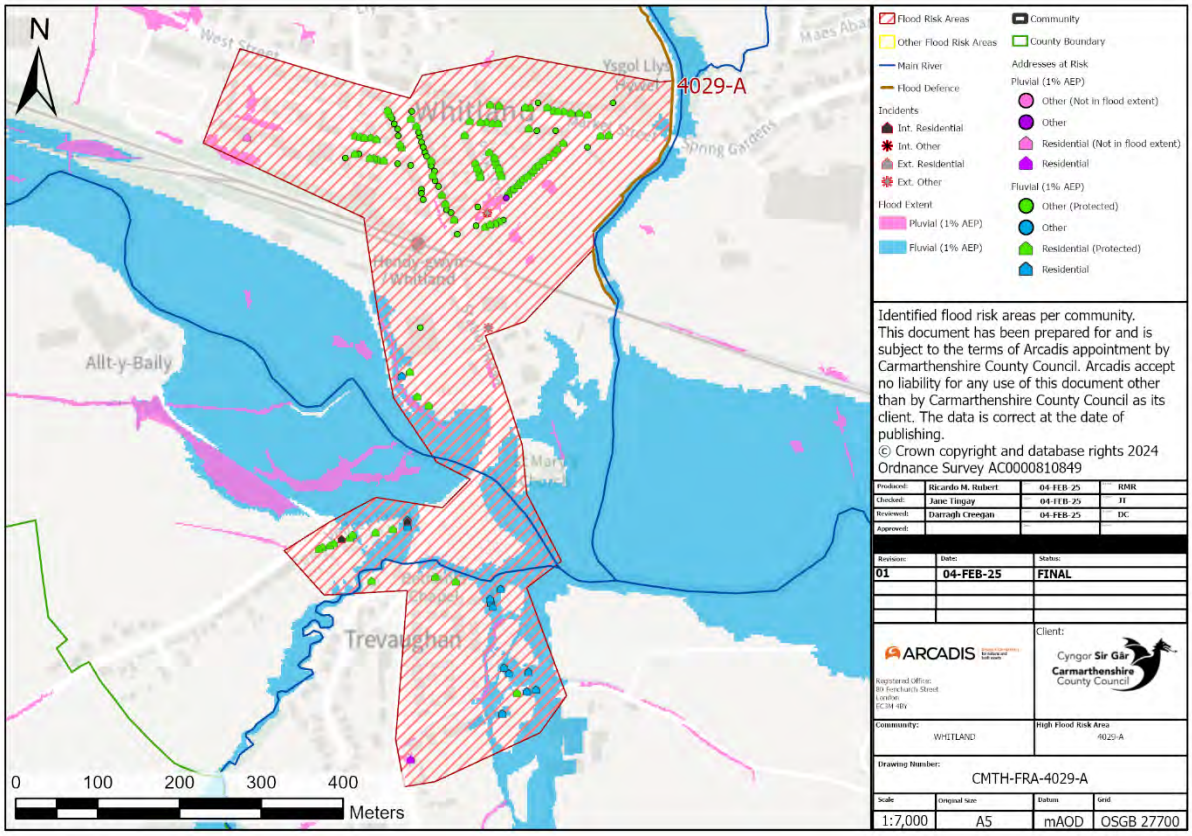

Figure 10-10 Flood Risk Area 4029

Table 10-26 Summary of Whitland's Flood Risk Areas

Flood Risk Area	Flood Defences and Assets Knowledge	Addresses at Risk	Key Receptors	Historical Flood Events	Key FRM Partners	Community Engagement
4029-A	• Average - Town centre • Poor - Highways	• Fluvial:144 • Pluvial: 10	• Dyfryn Taf school • Whitland Train Station • South Wales Main Rail Line • A440 main road • B4328 main roads. • Town Centre	• No information provided	• DCWW • Highways • Local Business Owners • NRW • Local Landowners	• Desired short term (in line with Outline Business Case)

10.5.6 Actions Identified

Following the identification of the flood risk areas across the Whitland community, a list of actions was developed below in Table 10-27 to address, manage and reduce the risks of flooding.

Table 10-27 Long List of Potential Actions in Whitland

Area	Potential Actions	Action Type	Description	Complete / Short/ Medium / Long Term	Cost
4029	Retrofit SuDS	Prevention	Retrofit SuDS to provide attenuation and wider benefits in urban areas, particularly those with a history of flooding from surface water such as Trevaughan.	Medium	£££
	Asset Management & Maintenance	Prevention / Protection	Improve understanding of CCC assets (including drainage) in the town centre through data review and surveys. Engage with NRW to understand maintenance plan for flood defences, for example the flood wall and embankments at Parc Dr Owen and the areas to the south.	Ongoing	££
	Hard Engineering	Protection	Potential for flood defences along the Rivers Taf and Cwm Waun Gron adjacent to Trevaughan to protect properties.	Long	£££
	Natural Flood Management	Prevention	Explore opportunities for Natural Flood Management measures in CCC owned farm located to the east of the town centre and north on Taff catchment. Measures such as attenuation basins, leaky dams, or woodland planting may provide some benefit.	Long	£££

Appendix A - Methodology

The methodology involved the preparation, analysis and presentation of data to assess and understand flood risk across Carmarthenshire's priority communities.

Data Preparation

The CaRR dataset containing information relating to the number of properties at risk of fluvial, pluvial and tidal flooding in Wales was first filtered to only contain data relating to addresses at risk of either fluvial and/or pluvial flooding with a magnitude equivalent to between a 1% and a 3.3% Annual Exceedance Probability (AEP) event.

Data within the CaRR was then further filtered to only include information relating to the risk of flooding across Carmarthenshire. The filtered CaRR data was then used in conjunction with CCC flood incident data and receptor data obtained between 2018-2024.

Census data on total community population was compared with fluvial and pluvial 'populations at risk' data from the CaRR to determine the proportion of residents at risk from different flood types.

Priority Communities

The final dataset included the following variables which were utilised when determining the ranking of communities at risk of fluvial and pluvial flooding in Carmarthenshire:

- Number addresses at risk of pluvial flooding
- Number of addresses at risk of fluvial flooding
- Number of addresses at risk of fluvial and pluvial flood (combined)
- Number of incidents
- Fluvial danger score (undefended scenario)
- Pluvial danger score (undefended scenario)
- Fluvial and pluvial danger score combined (in an undefended scenario)

The variables above were then used to rank the level of risk present in all the communities in Carmarthenshire. To ensure an equal representation of communities from each RBD, communities within each RBD were ranked based on their overall combined danger score from highest to lowest. As the county was split into 7 River

Basin Districts, a rough rule where no more than 5 communities per RBD and up to a maximum of 35 communities overall, was used to identify the communities at risk.

The top three to six communities within each RBD were then selected to make up the 28 priority communities at a high risk of flooding in Carmarthenshire.

The average number of reported combined fluvial and pluvial flood incidents occurring across Carmarthenshire was used to provide an indication of flood reporting in each community.

Flood Risk Areas

Within each priority community, flood risk areas were identified. These are areas considered to be at particular risk within a community. They were defined by using clusters of properties at risk of both fluvial and pluvial flooding based on the presence of distinct flood extents and flow paths. Local knowledge of key receptors, history of flooding and asset information was also utilised to assist the definition of flood risk areas. Figures have been produced per community and per flood risk area which can be seen in Sections 4 – 10 showing the flood extents and properties at risk.

Some communities are also at risk of flooding from groundwater. Where known, this has been referenced in the relevant section of the report.

Appendix B

Appendix C