

**BLAENAU GWENT
COUNTY BOROUGH COUNCIL**



Flood Risk Management Plan

September 2015



How to Use this Document

If you are viewing this document electronically you can click on the blue underlined text to go direct to the relevant section or community area.

This document is split into 13 sections:

[Section 1](#) explains what a Flood Risk Management Plan is and what it includes.

[Section 2](#) explains where Blaenau Gwent is located in terms of Wales and summarises the types of surface water flooding present in the area and identifies the areas at risk.

[Section 3](#) sets out how we currently manage flood risk, how we prioritise our work and who we work with. It also identifies how the document has been co-ordinated and how proposed measures are to be categorised.

[Section 4](#) sets out how the Plan has taken into account the Water Framework Directive which seeks to protect water quality or improve it where it does not currently meet 'good status'. It does this by summarising the co-ordination of development and implementation of the Plan with the River Basin Management Plan.

[Section 5](#) sets out Blaenau Gwent's Flood Risk Management objectives and demonstrates how they accord with national requirements.

[Section 6](#) provides an overview of flooding and identifies the Borough wide and local measures that are being proposed to address the risk from surface water flooding. It also identifies the [method used for identifying local measures](#).

Sections 7 and 8 sets out how we propose to manage surface water flooding. For each of the wards, referred to as 'Community Areas', there is: an overview of the area; a list of significant intakes; a map; a conclusion from the flood risk maps; a table of risks (people, property, environmental and historic assets); a table of measures to mitigate flood risk; and a summary diagram of the measures proposed.

[Section 7](#) includes all the wards 'Community Areas' in the Ebbw Vale / Tredegar Area which has been identified by NRW and Blaenau Gwent as 'an indicative flood risk area'. The following 'Community Areas' are included in this section, please click on them to go to the relevant section.

[Badminton Community Area](#)

[Beaufort Community Area](#)

[Ebbw Vale North Community Area](#)

[Ebbw Vale South Community Area](#)

[Georgetown Community Area](#)

[Rassau Community Area](#)

[Sirhowy Community Area](#)

[Tredegar Central and West Community Area](#)

[Section 8](#) includes the same information as above but covers all wards outside the Flood Risk Area. Click on the link to be taken to the relevant pages.

[Abertillery Community Area](#)

[Blaina Community Area](#)

[Brynmawr Community Area](#)

[Cwm Community Area](#)

[Cwmtillery Community Area](#)

[Llanhilleth Community Area](#)

[Nantyglo Community Area](#)

[Six Bells Community Area](#)

[Section 9](#) identifies how the measures are to be funded and sets out the process for monitoring and reviewing the Plan.

[Section 10](#) sets out the consultation undertaken on the Plan.

[Section 11](#) explains how the Council intends to meet its' Strategic Environmental Assessment (SEA) requirements.

[Section 12](#) lists all references referred to in the Plan.

[Section 13](#) provides information on other relevant plans and who to consult for further information.

A glossary of terms and abbreviations used in the Plan is provided in [Appendix 3](#).

Contents

	Foreword	7
1.	The purpose of the Flood Risk Management Plan in managing flood risk	9
1.1	What is a Flood Risk Management Plan?	9
1.2	What is included in this Flood Risk Management Plan	9
1.3	Legislative Context	10
2.	Blaenau Gwent Study Area	13
2.1	Administrative Area	13
2.2	Flood Risk in Blaenau Gwent	14
2.3	Identification of areas at risk from surface water flooding	17
2.4	Conclusions from Flood Risk Maps	22
2.5	Top communities at risk from surface water flooding	24
3.	How we currently manage flood risk	27
3.1	How we currently manage flood risk	27
3.2	How we prioritise our work	28
3.3	Who we work with to manage flood risk	29
3.4	How this plan has been co-ordinated	31
3.5	How measures are to be categorised	31
4.	Co-ordination with the Severn River Basin District Flood Risk Management Plan	34
4.1	Overview of River basin Districts in Wales	34
4.2	Severn River Basin District Overview	35
4.3	Summary of co-ordination of development and implementation of the FRMP with the RBMP	36
5.	Blaenau Gwent flood risk management objectives	37
5.1	Summary of Welsh Government National FCERM Strategy	37
5.2	Blaenau Gwent Flood Risk Management Strategy – Objectives	37
5.3	Selecting measures to achieve objectives	39
6.	Measures to manage flood risk	40
6.1	Borough wide measures to mitigate flood risk	40
6.2	Joint Schemes	47
6.3	Local measures to mitigate flood risk	47
7.	How we will manage flood risk in our Flood Risk Area	49
7.1	Badminton Community Area	49
7.2	Beaufort Community Area	54
7.3	Ebbw Vale North Community Area	58

7.4	Ebbw Vale South Community Area	62
7.5	Georgetown Community Area	67
7.6	Rassau Community Area	72
7.7	Sirhowy Community Area	76
7.8	Tredegar Central and West Community Area	80
8.	How we will manage flood risk in other areas of the Borough	84
8.1	Abertillery Community Area	84
8.2	Blaina Community Area	88
8.3	Brynmawr Community Area	93
8.4	Cwm Community Area	97
8.5	Cwmtillery Community Area	101
8.6	Llanhilleth Community Area	105
8.7	Nantyglo Community Area	109
8.8	Six Bells Community Area	115
9.	Implementation	119
9.1	Funding	119
9.2	Monitoring	119
10.	Public Consultation	121
11.	Strategic Environmental Assessment (SEA)	123
12.	References	124
13.	Links to other relevant plans	125
	Appendices	127
1	Components of the FRMP as detailed in the Flood Risk Regulations 2009 – Part 4	128
2	Risk Management Authority and Partner Contact Details	130
3	Glossary and Abbreviations	135
	List of Figures	
1	Flood Risk Regulations (2009) Timescales	11
2	Blaenau Gwent Location Map	13
3	Blaenau Gwent - Flood Risk Area and Blue Squares	19
4	Risk to People	22
5	Risk to Economic Activity	23
5	Risk to Historic Environment	24
7	Wales River Basin Districts – Management Catchments	34
8	Severn River Basin Catchment Plan	35
9	Badminton Flood Risk Map	50
10	Beaufort Flood Risk Map	55

11	Ebbw Vale North Flood Risk Map	59
12	Ebbw Vale South Flood Risk Map	63
13	Georgetown Flood Risk Map	68
14	Rassau Flood Risk Map	73
15	Sirhowy Flood Risk Map	77
16	Tredegar Central and West Flood Risk Map	81
17	Abertillery Flood Risk Map	85
18	Blaina Flood Risk Map	90
19	Brynmawr Flood Risk Map	94
20	Cwm Flood Risk Map	98
21	Cwmtillery Flood Risk Map	102
22	Llanhilleth Flood Risk Map	106
23	Nantyglo Flood Risk Map	111
24	Six Bells Flood Risk Map	116
	List of Tables	
1	Counts of Features in Blaenau Gwent Flood Risk Area	18
2	Risk Counts for Blaenau Gwent based on new Flood Hazard Maps	21
3	Community Areas in Blaenau Gwent	25
4	Top Communities at Risk of Surface Water Flooding	26
5	Risk Management Authorities in Blaenau Gwent	29
6	Additional Flood Risk Management Authorities in Blaenau Gwent	30
7	Types of Measures	31
8	Categorisation of Measures	32
9	Blaenau Gwent Objectives compared with FCERM Sustainability Objectives	38
10	Measures to be used in Blaenau Gwent FRMP	41
11	Badminton – Significant Intakes	49
12	Badminton – Counts for Various Risks	51
13	Badminton – Measures to Mitigate Flood Risk	52
14	Beaufort – Significant Intakes	54
15	Beaufort – Counts for Various Risks	56
16	Beaufort – Measures to Mitigate Flood Risk	57
17	Ebbw Vale North – Significant Intakes	58
18	Ebbw Vale North – Counts for Various Risks	60
19	Ebbw Vale North – Measures to Mitigate Flood Risk	61
20	Ebbw Vale South – Significant Intakes	62
21	Ebbw Vale South – Counts for Various Risks	64
22	Ebbw Vale South – Measures to Mitigate Flood Risk	65
23	Georgetown – Significant Intakes	67
20	Georgetown – Counts for Various Risks	69
25	Georgetown – Measures to Mitigate Flood Risk	70
26	Rassau – Significant Intakes	72
27	Rassau – Counts for Various Risks	74
28	Rassau – Measures to Mitigate Flood Risk	75
29	Sirhowy – Significant Intakes	76
30	Sirhowy – Counts for Various Risks	78
31	Sirhowy – Measures to Mitigate Flood Risk	79

32	Tredegar C & W – Significant Intakes	80
33	Tredegar C & W – Counts for Various Risks	82
34	Tredegar C & W – Measures to Mitigate Flood Risk	83
35	Abertillery – Significant Intakes	84
36	Abertillery – Counts for Various Risks	86
37	Abertillery – Measures to Mitigate Flood Risk	87
38	Blaina – Significant Intakes	89
39	Blaina – Counts for Various Risks	91
40	Blaina – Measures to Mitigate Flood Risk	92
41	Brynmawr – Significant Intakes	93
42	Brynmawr – Counts for Various Risks	95
43	Brynmawr – Measures to Mitigate Flood Risk	96
44	Cwm – Significant Intakes	97
45	Cwm – Counts for Various Risks	99
46	Cwm – Measures to Mitigate Flood Risk	100
47	Cwmtillery – Significant Intakes	101
48	Cwmtillery – Counts for Various Risks	103
49	Cwmtillery – Measures to Mitigate Flood Risk	104
50	Llanhilleth – Significant Intakes	105
51	Llanhilleth – Counts for Various Risks	107
52	Llanhilleth – Measures to Mitigate Flood Risk	108
53	Nantyglo – Significant Intakes	109
54	Nantyglo – Counts for Various Risks	112
55	Nantyglo – Measures to Mitigate Flood Risk	113
56	Six Bells – Significant Intakes	115
57	Six Bells – Counts for Various Risks	117
58	Six Bells – Measures to Mitigate Flood Risk	118

Foreword

Welcome to our first Flood Risk Management Plan.

This is an important new tool for managing flood risk in Blaenau Gwent and supports the implementation of the Local Flood Risk Management Strategy published in 2013.

Although we do not suffer from flooding on the dramatic scale seen across the UK we do have an area of significant flood risk (more than 5,000 people in one linked area considered to be at risk of flooding according to a high level screening exercise) for which we are required to prepare a Flood Risk Management Plan. This document is our response to that requirement and I am pleased to present it to the residents of the Borough and our other risk partners.

This FRMP covers flooding from surface water. Flooding from main rivers and reservoirs are also an issue in parts of Blaenau Gwent but these are addressed in the Severn Basin District Flood Risk Management Plan. Although the plans have been produced separately we have sought opportunities to work together to achieve additional benefits for the people, economy and environment in Blaenau Gwent.

The FRMP sets out the proposed measures and objectives to manage flood risk in Blaenau Gwent from 2015 to 2021 and beyond. These are aligned where appropriate with the Severn River Basin Flood Risk Management Plan and subject to tests of affordability, value for money and prioritisation in order to deliver the best solutions for local communities.

Through the production of this plan and from the experience and knowledge of our engineering staff we have learned how to manage flood risk in an efficient and cost effective way. However, there are still many lessons to be learned in terms of providing solutions to reduce flood risk which will be acceptable to our communities and will attract the appropriate funding from Welsh Government, Europe and other sources.

We recognise that we cannot significantly reduce flood risk in isolation from our other risk partners and Blaenau Gwent will seek to work closely with NRW and Dwr Cymru / Welsh Water to endeavour to bring to our communities a seamless approach to all sources of flooding no matter which organisation has the legal responsibility.

Cllr Hedley McCarthy

**Leader of the Council
Executive Member for Infrastructure**

1. THE PURPOSE OF THE FLOOD RISK MANAGEMENT PLAN IN MANAGING FLOOD RISK

1.1 What is a Flood Risk Management Plan?

Flood Risk Management Plans (FRMPs) highlight the hazards and risk from rivers, the sea, surface water, groundwater and reservoirs and set out how risk management authorities (RMAs) will work together with communities to manage flood risk. FRMPs set out how to manage flood risk to provide most benefit to communities and the environment.

Flooding remains a key threat to communities across Wales, and managing this risk through careful planning is important to minimise the risk to communities. Flood risk management planning allows risk management authorities (RMAs) to develop a better understanding of risk from all sources of flooding and agree priorities to manage that risk.

This Flood Risk Management Plan (FRMP) has been developed with this in mind and sets out how Blaenau Gwent will over the next 6 years manage flooding so that the communities most at risk and the environment benefit the most. In doing so, this FRMP takes forward the objectives and actions set out in our Flood Risk Management Strategy.

<http://www.blaenau-gwent.gov.uk/environment/21512.asp#FRMS>

This FRMP also aims to achieve some of the objectives set out in the Welsh Government's National Flood and Coastal Erosion Risk Management Strategy¹ which provides the national framework for flood and coastal erosion risk management in Wales through four overarching objectives:

- **Reducing the consequences** for individuals, communities, businesses and the environment from flooding and coastal erosion.
- **Raising awareness of and engaging people in the response** to flood and coastal erosion risk.
- **Providing an effective and sustained response** to flood and coastal erosion events.
- **Prioritising investment** in the most at risk communities.

1.2 What is included in this FRMP?

The information included in Blaenau Gwent's FRMP includes the components set out in the EU Flood Directive (see appendix 1). Most of this information has been gathered and updated through this first cycle, and has been drawn from the findings of our Preliminary Flood Risk Assessment (PFRA) and the measures we identified and set out in our Local Flood Risk Management Strategy (LFRMS)

<http://www.blaenau-gwent.gov.uk/environment/21512.asp#FRMS>

¹ <http://wales.gov.uk/topics/environmentcountryside/epq/flooding/nationalstrategy/strategy/?lang=en>

This FRMP sets out appropriate objectives for the management of flood risk within the areas covered by the Plan. The objectives focus on reducing the adverse consequences of flooding for human health, the environment, cultural heritage and economic activity.

To do so, this FRMP highlights the areas' most at risk from surface water flooding and ordinary watercourse in Blaenau Gwent County Borough, draws the conclusions from these risks and sets out the measures we will take over the next 6 years to mitigate these risks and make our communities more resilient.

Due to the nature of flooding and current funding situation, we have also looked at measures to reduce the likelihood of flooding using non-structural measures and covering all aspects of flood risk management, including raising awareness of flooding and better understanding of local flooding issues. All the measures identified in this plan have been classed into 4 categories:

- Prevention
- Protection
- Preparedness
- Recovery and Review

1.3 Legislative Context

Flood Risk Regulations 2009

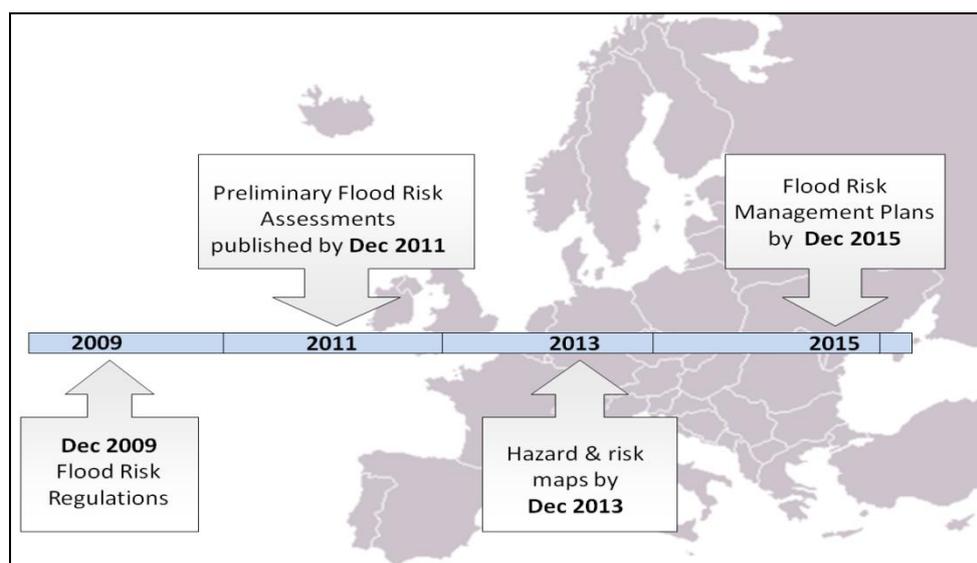
Under the Flood Risk Regulation 2009, Lead Local Flood Authorities (LLFAs) are responsible for producing Flood Risk Management Plans (FRMP) for indicative Flood Risk Areas that were identified in the Preliminary Flood Risk Assessments (PRFAs)².

While Natural Resources Wales (NRW) is responsible for producing FRMPs at a river basin district level for communities at risk of flooding from main rivers and the sea, LLFAs are only required to produce local FRMPs to manage flooding from surface water and ordinary watercourses.

The Regulations set out a six year cycle with timescales for reporting to the European Commission and the publication of 3 key outputs:

² Indicative Flood Risk Areas have been identified where more than 5,000 people are at risk of flooding

Figure 1: Flood Risk Regulation (2009) Timescales



Preliminary Flood Risk Assessment (PFRA)

The PFRA was a high level screening exercise that compiled information on significant local flood risk from past and future floods, based on readily available information. The scope of the PFRA was to consider flooding from surface runoff, ground water and ordinary watercourses, and any interaction these sources have with main rivers with the aim of identifying flood risk areas as set out under the European Flood Directives (see section 2.3).

Production of flood hazard and flood risk maps for Flood Risk Areas

In 2013 the Environment Agency, working with Natural Resources Wales (NRW) and LLFAs, produced the updated Flood Map for Surface Water.

The updated map represents a significant improvement on the previous surface water flood maps (2008 and 2010), both in terms of method and representation of the risk of flooding. The updated Flood Map for Surface Water assesses flooding scenarios as a result of rainfall with the following chance of occurring in any given year:

- 1 in 30 (3%)
- 1 in 100 (1%)
- 1 in 1000 (0.1%)

The updated map also provides the following data for each flooding scenario:

- Extent
- Depth
- Velocity (including flow direction at maximum velocity)
- Hazard (as a function of depth and velocity)

It also includes information about the source of the data (i.e. whether it was from the nationally produced modelling or locally produced modelling) and the confidence in the data outputs.

Detailed maps for Blaenau Gwent can be obtained using the following link:
<https://naturalresources.wales/our-evidence-and-reports/maps/flood-risk-map/?lang=en>

Flood Risk Management Plans for Flood Risk Areas

We are currently in the first cycle of the Regulations and FRMPs represent the final output of this cycle and must be published by December 2015.

Flood and Water Management Act

The Flood and Water Management Act was introduced in April 2010 in England and Wales. It was intended to implement Sir Michael Pitt's recommendations following the widespread flooding of 2007. The act was also intended to clarify roles and responsibilities between Risk Management Authorities (RMAs).

Under the Act, the Welsh Government was required to produce a National Strategy for Flood and Coastal Erosion Risk Management, and Blaenau Gwent to produce a Local Flood Risk Management Strategy (LFRMS) which was completed in July 2013.

LFRMS were created to define who the Risk Management Authorities are, what their function is and what their responsibilities are. The LFRMS were developed to be consistent with the National Strategy for flood and Coastal Erosion Management. Before publication the draft version of the LFRMS underwent public scrutiny through a consultation period before being officially published.

2. Blaenau Gwent Study Area

2.1 Administrative Area

Blaenau Gwent is situated in South East Wales, 20 miles north of Newport and 30 miles north east of Cardiff, and is comprised of the Sirhowy, Ebbw Fach and Fawr Valleys. It extends from the Brecon Beacons National Park in the north to Swffryd in the south.

Blaenau Gwent is bordered to the north by Powys County Borough Council and the Brecon Beacons National Park, to the east by Monmouthshire and Torfaen, and to the west by Caerphilly County Borough Council.

Figure 2: Blaenau Gwent Location Map



The County Borough covers an area of approximately 10,900 hectares (109km²) with an estimated population of 69,814 (2011 Census). It has one of the highest population densities in Wales as most of the population is concentrated in 23% of the area in the towns of Abertillery, Brynmawr, Ebbw Vale, Tredegar, Nantyglo and Blaina. As a result Blaenau Gwent is characterised by dense populations along the valley floors surrounded by steeply sided valley slopes and open mountain tops.

Within Blaenau Gwent there are over 20 employment sites covering 450 hectares of land providing 600,000m² of employment floorspace. The majority of the sites are located in the north of the County Borough in close proximity to the A465 (Heads of the Valleys Road). All other sites are located in the three valleys, in close proximity to the A4048, the A4046 and A467.

Drainage infrastructure with the exception of the Heads of the Valleys Road which runs across the top of the three valleys invariably runs along the valley floors in a south east direction.

River Catchments in Blaenau Gwent

The Borough lies within the upper reaches of the Ebbw, Sirhowy, and Tillery catchment. Surface water from the upper reaches of the catchment drains into the Sirhowy in the west, the Ebbw Fawr in the central valley and the Ebbw Fach in the east. The Ebbw Fach and Ebbw Fawr meet at Aberbeeg below this point the river is referred to as the Ebbw. The Sirhowy River meets the River Ebbw at Risca within Caerphilly County Borough. The River Ebbw flows into the Usk Estuary.

All three rivers are fast responding river catchments providing short flood warning times. There is also a high risk of locally rapid surface water flooding due to the steep slopes.

2.2 Flood Risk in Blaenau Gwent

Summary of types of flooding present in Blaenau Gwent

Local flood risk is defined as a flood risk from: ordinary watercourses (a watercourse that does not form part of a main river, includes a lake, pond or other area of water, which flows into an ordinary watercourse); surface runoff (rainfall or other precipitation which is on the surface or ground and has not entered a watercourse drainage system of public sewer); ground water (water that has percolated into the ground and may form underground ponds or streams, which may discharge above ground but lower down catchment); and the interface between main rivers and surface water flows.

Catchment Characteristics

The terrain within Blaenau Gwent is typical of all the valleys of South East Wales. The catchments consist of steep hillsides, which are generally formed of

impermeable clay based head material overlaying various rock strata with steep fast flowing rivers in the valley floor. The combination of characteristics leads to the catchments being very “flashy”, meaning that runoff from storms is almost instantaneous giving rise to high flows which generally subside very quickly in a time scale of minutes rather than hours or days. This is particularly relevant to surface water runoff and ordinary watercourses.

Ordinary Watercourse Flooding

The most frequent form of flooding in ordinary watercourses arises from the blockage of grids at the entrance to the culverts. Blaenau Gwent County Borough Council has an operational procedure which is designed to minimise the risk by carrying out routine maintenance and pre-emptive cleaning prior to heavy rain when forecast.

Measures will be introduced to investigate the efficiency of grids and replace those considered to be substandard with grids designed to modern standards this may also include additional sacrificial grids upstream.

Flooding may also be caused by inadequate maintenance which is normally the responsibility of the riparian owner.

Culvert capacity due to the nominal size of the pipe has not proved to be the main cause of flooding events within the borough. However, capacities of pipes are often significantly reduced by the build-up of silt and debris within culverts, causing full or partial blockages. Deterioration or collapse of the pipes themselves could also occur in ageing or poorly constructed sewerage systems.

If funding is identified, surveys will be carried out and calculations to determine the maximum flow rates in culverts to ensure they remain in a serviceable condition.



Surface Water Runoff

Flooding from surface water runoff is usually caused by intense rainfall either after periods of persistent rainfall, which has saturated the catchment, or following a period of dry weather, causing the ground surface to become hard and impermeable. Both scenarios result in high runoff leading to high peak flows which is much more difficult to predict and pinpoint, than river or coastal flooding.

Flooding can be exacerbated by lack of cut off ditches and drains, ditches being filled in or piped or poor maintenance of ditches and watercourses by owners.



Groundwater Flooding

Groundwater flooding can occur when water levels in the ground rise above surface levels. It is most likely to occur in areas underlain by permeable rocks, called aquifers. This is not a significant source of flooding in Wales. However, water does percolate through the rock strata and into old mine workings. When the coal mines were operational groundwater was controlled by pumping excess water into local drainage systems. Existing culverts or ordinary water courses were used before the water was discharged into local rivers. Since the closure of the mines pumping has ceased and many of the mine workings have filled with water. The water generally escapes through old mine entrances such as adits and mine shafts. Occasionally water from old mine working discharges in unexpected locations.

Channels

Flooding within channels is usually caused by lack of maintenance. Where channels are in the ownership of Blaenau Gwent County Borough Council operational procedures are in place to ensure that the capacity of the channel is not impaired. Inspection of channels, where there is a significant risk of flooding, is carried out on a regular basis and debris removed.

Combined Sewers

The sewer network in the borough is mostly made up of combined sewers that take both foul sewage and surface water. These are all in the ownership of Dwr Cymru / Welsh Water. Flows in these pipes are usually controlled through the installation of Combined Sewer Overflows (CSOs), which operate to allow excess flows to be removed from the system and discharged into natural drainage channels, protecting properties from sewer flooding. This method of controlling flows can cause foul

sewage, mixed with rainwater to be discharged into the surface water drainage system during periods of heavy rainfall which has an adverse effect on the quality of the water. The licensing and monitoring of all CSOs is managed by NRW regardless of whether they discharge to main river or ordinary watercourses.

Blaenau Gwent County Borough Council will work collaboratively with our risk partner (Dwr Cymru / Welsh Water) to identify all CSOs and to establish their efficiency and the quality of the water being discharged.

Where necessary, Blaenau Gwent County Borough Council will liaise with Dwr Cymru / Welsh Water to introduce measures which will reduce the quantity of foul sewage being discharged from the Combined Sewer System into surface water systems.

Other sources of flooding, such as from rivers, is covered in the Severn River Basin District Flood Risk Management Plan.

2.3 Identification of areas at risk from surface water flooding

A need to identify areas at risk from surface water flooding was introduced in response to the Flood Risk Regulations (2009). The regulations set the publication of 3 key outputs.

Preliminary Flood Risk Assessment

The Preliminary Flood Risk Assessment was the first stage of this process and was carried out in order to establish the level of flood risk within each LLFA. The process looked specifically at flooding from surface water, ground water and ordinary water courses and the interface with flooding from main rivers.

In order to have consistency of approach DEFRA and WG identified a number of key risk indicators and their thresholds to establish significant risk and to determine the existence of indicative Flood Risk Areas.

The methodology was based on using the flood maps produced by NRW to identify 1 km squares where flood risk exceeds a defined threshold. These squares are known as areas above Flood Risk Threshold (Blue Squares). The key flood risk indicators and their thresholds for a 1 km square were set as follows:-

1. A minimum of 200 people
2. A minimum of 20 businesses
3. 2 or more critical services

NRW identified 29 blue squares within BGCBC.

A cluster of blue squares is an indication that an area of concentrated flood risk has been identified. Where there are four or more touching blue squares within a 3km x 3km square the whole 3km x 3km square was considered as an area which could form part of an indicative Flood Risk Area.

The key flood risk indicator for establishing an indicative Flood Risk Area was set as – numbers of people at risk of being affected by flooding exceeding 5,000.

Based on the methodology defined above, NRW defined an indicative Flood Risk Area within BGCBC of 40.38 Km² based on the 17 blue squares in the Ebbw Vale / Tredegar area.

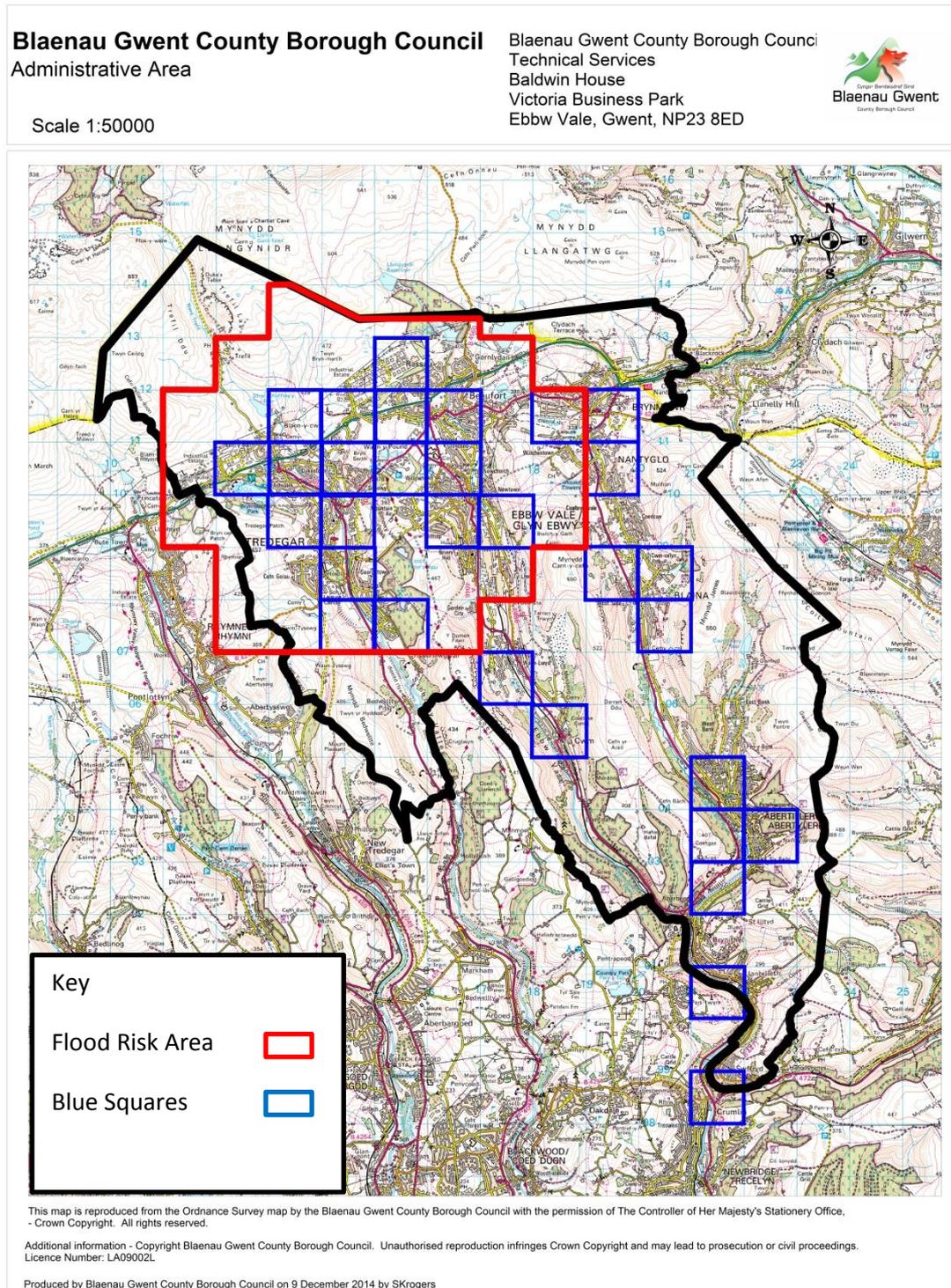
The review carried out by BGCBC on past and future flooding did not justify any amendments to the Indicative Flood Risk Area identified by NRW.

The key Flood Risk Indicators for BGCBC were calculated by NRW as follows:

Table 1: Counts of Features in Blaenau Gwent Flood Risk Area

Consequence	Number
Human health consequences	6683 - Number of people
Other human health consequences	28 -Number of critical services flooded
Economic consequences	693 - Number of non-residential properties flooded

Figure 3: BGCBC – Ebbw Vale Flood Risk Area and Blue Squares



Flood Hazard and Flood Risk Maps

The second stage was the publication in December 2013 of Flood Hazard and Flood Risk Maps. These were prepared by consultants on behalf of NRW and the Environment Agency (EA). The modelling used in producing the maps is considered to be more accurate than previous flood maps.

The information in the maps included the following:

- Data for each of the modelling probability of flooding – 1 in 30 (3.3% High), 1 in 100 (1% medium) and 1 in 1000 (0.1% low) – in any given year
- Flood extent – the extent of the land that could be affected
- Flood depth – the depth of flooding
- Velocity – the velocity of flooding
- Hazard – the flood hazard rating (defined as a function of the concurrent depth and velocity)
- Flow direction – the direction of flow, on a 2 metre grid
- Flow direction – 25m – the direction of flow, displayed on a 25 metre grid (to allow viewing at a scale of 1:10,000)

Hazard has been defined as a combination of velocity (v), depth (d) and a debris factor (DF).

Natural Resources Wales and the Environment Agency produced a document “Flood Risk Maps – Risk of Flooding from Surface Water – Severn River Basin District” in which they provided details of features to be considered when investigating surface water flood risk.

The features are divided into three categories namely Risk to People, Risk to Economic Activity and Risk to Natural and Historic Environment. The table below identifies the number of properties or people at risk for each category.

The risk maps have been generated from the updated flood maps of surface water (uFMfSW) and the National Receptor Database (NRD). Blaenau Gwent has verified the accuracy of the information by carrying out our own counts of people, economic activity and Natural and Historic Environment.

Table 2: Risk Counts for Blaenau Gwent Flood Risk Area (based on new Flood Hazard Maps)

COUNTS FOR FLOOD RISK AREA				
	Total in defined area	Risk Counts		
		HIGH	MEDIUM	LOW
Risk to people				
Number of people in area:	40,089	682	696	2,825
Number of Services:	57	4	1	6
Risk to economic activity				
Number of non-residential properties:	2,785	119	84	351
Number of Airports (n)	0	0	0	0
Length of Primary/Trunk Roads (km)	68	3	1	3
Length of railway (km):	1	0	0	0
Area of Agricultural Land – Grades 1, 2 and 3 within the area (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Number of EU Bathing Waters within 50m:	0	0	0	0
Number of Environmental Permitting Regulations (EPR) Installations within 50m:	5	4	0	0
Area of Special Areas of Conservation (SAC) within area (ha):	0	0	0	0
Area of Special Protection Areas within area (SPA) (ha)	0	0	0	0
Area of Ramsar Sites within area (ha):	0	0	0	0
Areas of World Heritage Sites within area (ha):	0	0	0	0
Area of Sites of Special Scientific Interest (SSSI) within area (ha):	4,069	0	0	0
Areas of designated Parks and Gardens within area (ha):	10	0	0	2
Area of Scheduled Ancient Monuments within area (ha):	3	0	0	0
Number of Listed Buildings within area :	36	2	2	5
Number of Licensed Abstractions (LA) within area:	13	0	0	2

Taken from NRW information

The above table identifies the counts made for the Blaenau Gwent Flood Risk Area for risk to people, economic activity and natural and historic environments. With the exception of the number of residential properties at risk of flooding and thus the number of people at risk of flooding all the counts identified by NRW/JBA Consulting are the relevant counts to be used in this FRMP. A change to a depth of greater than 200mm has been made to reflect the 150mm height modern day building regulations require door frames to be.

2.4 Conclusions from the Flood Risk Maps

There are 40,089 people and 57 services in Blaenau Gwent Flood Risk Area. Of these, 682 people and 4 services are considered to be at high risk with a 1 in 30 (3%) or greater chance of flooding in any given year. A further 696 are in medium risk with a 1 in 100 (1%) chance of flooding in any given year. A further 2,825 people are considered to be at low risk with a 1 in 1000 (0.1%) chance of flooding in any given year.

Figure 4: Risk to People

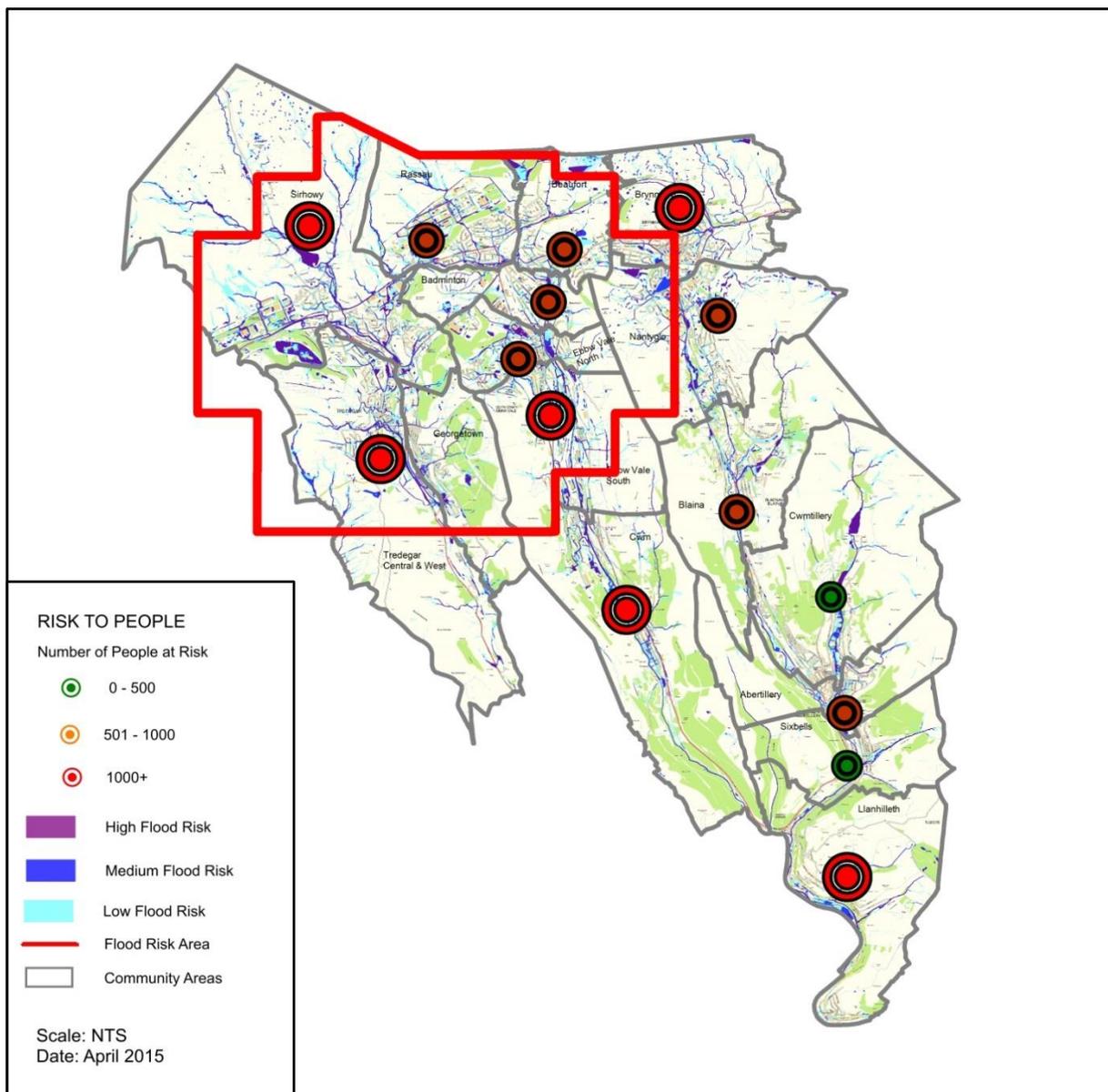
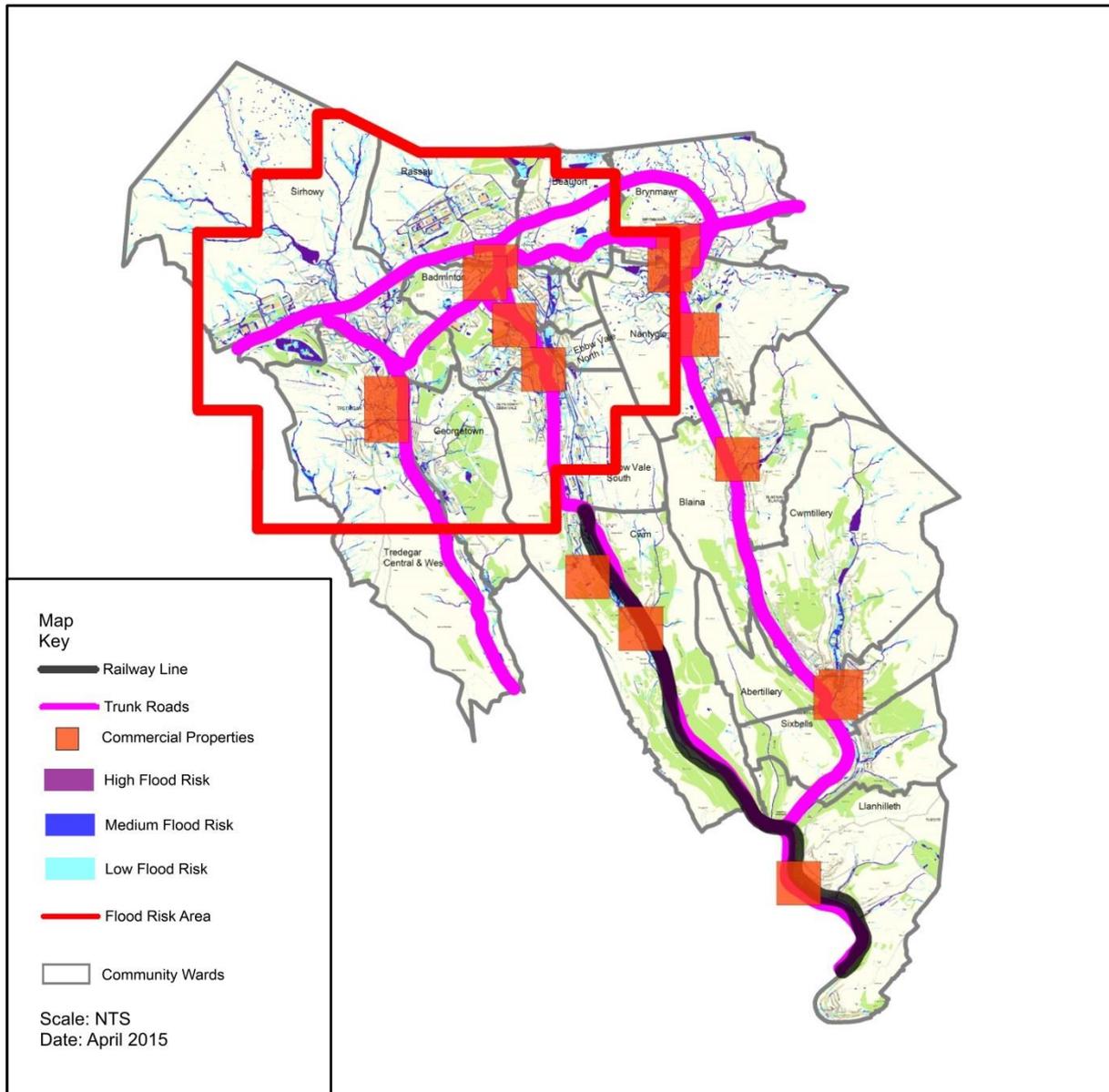
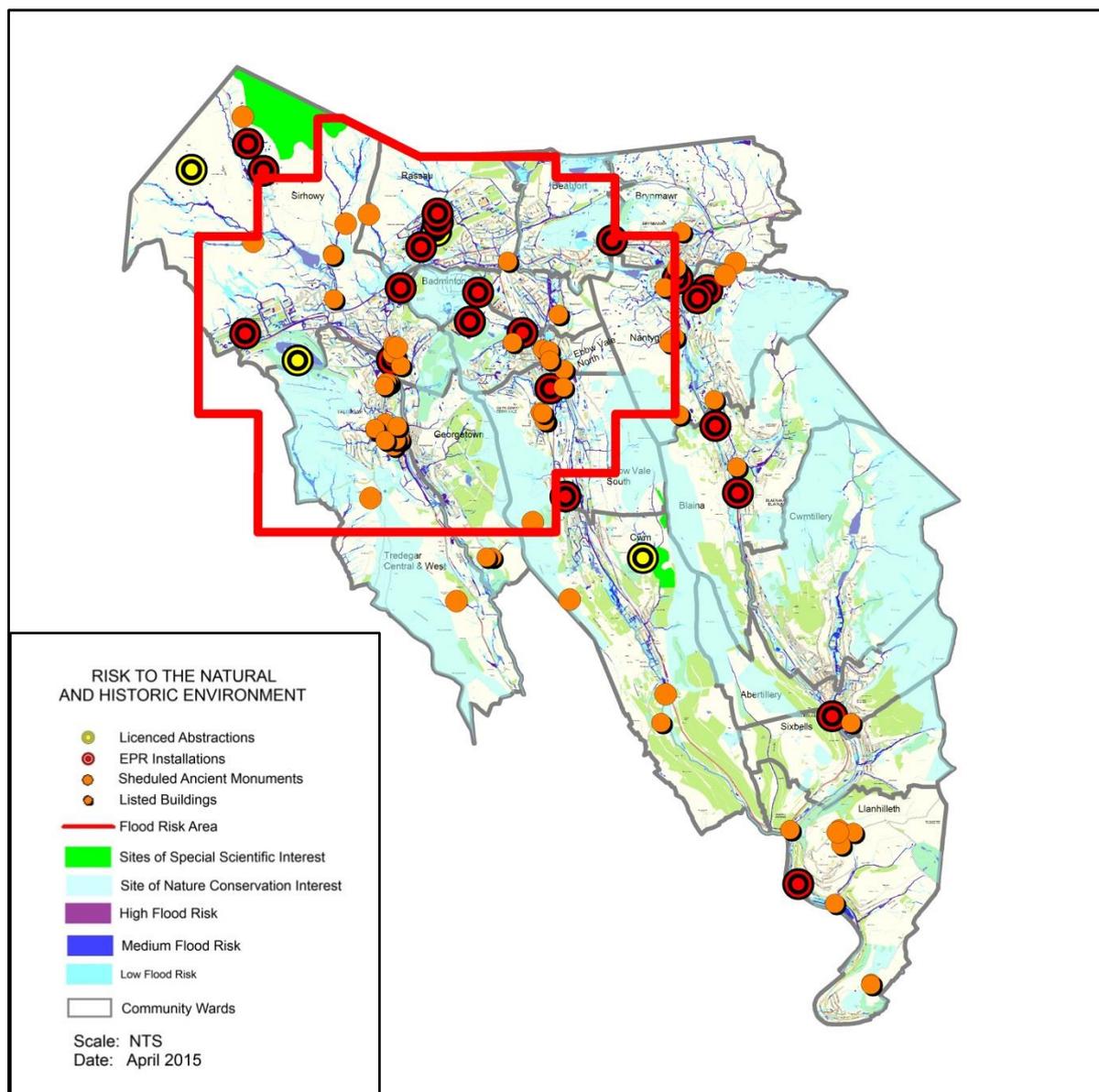


Figure 5: Risk to Economic Activity



Out of the 2,785 non-residential properties in the Flood Risk Area, 119 have a high risk with a 1 in 30 (3%) chance of flooding in any given year. A further 84 have a 1 in 100 (1%) chance of flooding in any given year, with 351 considered to have a low risk with a 1 in 1000 (0.1%) chance of flooding occurring each year. Seven kms of the primary/trunk road network are also at risk of flooding.

Figure 6: Risk to Natural and Historic Environment



There are 5 environmental permitting installations within the Flood Risk Area 4 of which are considered to be at high risk with a 1 in 30 (3%) chance of occurring each year. Two of the 36 Listed Buildings in the Blaenau Gwent Flood Risk Area are at a 1 in 30 (3%) or greater chance of flooding each year; with a further 2 of these considered to be at medium risk 1 in 100 and a further 5 a low risk 1 in 1000 of flooding.

2.5 Top communities at risk from surface water flooding

For the purpose of flood risk analysis Blaenau Gwent has been divided into 16 Community Areas based on wards. The use of wards was considered to provide a direct assessment of flood risk in terms relevant to council members and also

members of the public. Seven of the Community Areas are within the Flood Risk Area identified in the PRFA and details of the flood risk for these areas are set out in Section 6 of this report. The remaining 9 Community Areas are dealt with in Section 7.

Table 3: Community Areas in Blaenau Gwent

Community Area	Area (ha)	Population	In FRA
Abertillery	460	5,231	No
Badminton	268	3,389	Yes
Beaufort	344	4,037	Yes
Blaina	794	5,377	No
Brynmawr	582	6,418	No
Cwm	979	4,561	No
Cwmtillery	988	5,107	No
Ebbw Vale North	249	5,068	Yes
Ebbw Vale South	661	5,045	No
Georgetown	408	4,094	Yes
Llanhilleth	741	4,771	No
Nantyglo	735	5,168	No
Rassau	482	3,476	Yes
Sirhowy	1650	6,096	Yes
Six Bells	426	2,855	No
Tredegar Central and West	1106	7,421	Yes

The communities designated as at risk have been determined by a statistical analysis of the risk to people, economic activity and historic environments.

Table 4: Top Communities at risk from Surface Water Flooding

	Badminton	Beaufort	Ebbw Vale N	Ebbw Vale S	Georgetown	Rassau	Sirhowy	Tredegar W and central	Abertillery	Blaina	Brynmawr	Cwm	Cwmtillery	Llanhilleth	Nantyglo	Six Bells
Risk to people	In Flood Risk Area								Not in Flood Risk Area							
Number of people	627	568	969	1,133	2,017	549	1,521	1,910	800	815	1,471	1,614	454	1,321	962	397
Number of Services	4	7	2	6	4	2	6	9	3	3	5	5	3	2	1	1
Risk to economic activity																
Number of non-residential properties	126	173	263	511	173	283	549	579	360	376	417	376	292	317	442	174
Length of Primary/Trunk Roads (km)	0	0	0	0	1	1.5	4.1	0	0	1	0	0	1	1	1	1
Length of railway (km)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Risk to Natural and Historic Environment																
Number of Environmental Permitting Regulations (EPR) Installations within 50m	1	1	2	2	0	3	5	0	1	2	1	0	0	1	2	0
Areas of designated Parks and Gardens within area (ha):	0	0	0	0	0	0	0	10.28	0	0	0	0	0	0	0	0
Area of Scheduled Ancient Monuments within area (ha)	0	0	0	1	0	1	2	0	0	0	0	0	0	1	0	0
Number of Listed Buildings within area	1	0	4	7	2	1	6	15	1	1	2	1	0	7	6	0
Number of Licensed Abstractions (LA) within area	0	0	0	0	0	1	2	0	0	0	0	1	0	0	0	0
Area of Sites of Interest for Nature Conservation (SINC) within area (ha)	11.6	2.73	8.3	7.6	4.3	6.2	14.9	35.4	31.4	31.3	15.2	13.6	41.6	15.8	31.6	3.4

3. HOW WE CURRENTLY MANAGE FLOOD RISK IN BLAENAU GWENT COUNTY BOROUGH COUNCIL

3.1 How we currently manage flood risk

Under the terms of the Flood and Water Management Act 2010 (FWMA) BGCBC became a Lead Local Flood Authority (LLFA) and as such is responsible for the management of local flood risk, ensuring that flood risk from surface runoff, groundwater and small watercourses and ditches is managed as part of locally agreed work programmes.

Flood Risk in Blaenau Gwent is managed through:-

- Operational procedures which have been developed over the years through good custom and practice.
- Measures which were included in the Local Flood Risk Management Strategy.
- Powers given to all LLFAs through Flood and Water Management Act 2010 and the Land Drainage Acts 1991 and 1994.
- As Blaenau Gwent is also the Highways Authority for the area Powers under the Highways Act 1980.
- Through the provision of Emergency Planning.

Operational Procedures

Critical gullies are cleaned on a 4 week rota between November and April and an 8 week rota between May and October. They are also checked when flood alerts are received or the Council is made aware of an issue.

Culvert grills are inspected on a 2 week rota between November and April and a 12 week rota between May and October. All are inspected when flood alerts are declared or when the Council is made aware of an issue.

Measures contained within the LFRMS

Measures contained within the LFRMS which are currently being used to manage and reduce flood risk are listed below:

- avoiding inappropriate development in flood risk areas;
- incorporating of greater resilience into the design of developments;
- developing robust maintenance regimes for culverts & drains and identification of priority areas;
- making more use of the natural environment, like wetlands;
- increasing approaches that utilise the natural environment, like adopting soft engineering in place of traditional solutions, managing of the land to reduce storm runoff, creating wetlands to store water;
- encouraging the sustainable drainage system (SuDS) approach for surface water management for both new and existing developments;

- identifying and protecting areas suitable for inundation and water storage to prevent flooding elsewhere;
- enabling those at risk of flooding to play a proactive role in shaping the flood risk management service they receive;
- improving the response to flooding incidents by the emergency response organisations, as well as individuals and businesses;
- ensuring effective recovery arrangements are in place and supported by all relevant parties;
- developing better flood forecasting and warning systems;
- improving monitoring and data recording; and
- improving communication and support to residents, business and communities.

Additional powers under the Flood and Water Management Act 2010

Under the Flood and Water Management Act 2010 LLFAs have been given additional duties which directly impact on flood risk management these are:

- A duty to investigate all flooding in its area, insofar as a LLFA consider it necessary or appropriate (Section 19)
- Consenting on ordinary watercourses (Section 29 of schedule 2)
- A duty to maintain a register of structures and features likely to affect flood risk (Section 21)
- A duty to contribute to sustainable development. SuDS. (Section 32 of Schedule 3)

3.2 How we prioritise our work

We take a risk based community approach to prioritise where best to direct investment. We also undertake cost benefit analysis to determine the suitability and sustainability of capital projects. In accordance with National Strategy for Flood and Coastal Risk Management in Wales (WG 2011)³ the following issues will be taken into consideration:

- Risk to life;
- Longer term sustainability of the community, the approach taken and the wider environment;
- Economic impacts, costs and benefits;
- Impacts of flooding on the operational capacity of critical infrastructure;
- Social impacts, costs and benefits;
- Frequency of flooding;
- Environmental costs and benefits derived from the work;

³ <http://wales.gov.uk/docs/desh/publications/111114floodingstrategyen.pdf>

- Availability of appropriate compensation sites where work impacts designated habitats;
- Impacts on our wider cultural heritage; and
- Multiple benefits in relation to human health and wellbeing.

When conducting a cost benefit analysis the risk to life is regarded as the most significant factor in determining priority of investment. This system has been set in place to ensure the sustainability of flood risk management throughout Wales.

Welsh Government as the primary funder of flood and coastal erosion risk management in Wales is currently consulting on Flood and Coast Investment Programme (WG December 2014) (FaCIP). The consultation is to consider the way that Welsh Government allocates funding to ensure it focuses on those places with greatest risk. Their objective is twofold:

- To develop a methodology to prioritise areas at risk – potentially forming a single source or Flood Risk Index;
- Use the index as a starting point to guide a national funding programme that will direct funding to schemes in the highest risk areas.

As this document is currently in draft form and may change it would be unwise to base our prioritisation on the new methodology, however it is worth noting that the proposed system is also based on risk to life.

3.3 Who we work with to manage flood risk in BGCBC

The Floods and Water Management Act 2010 clarified the roles and responsibilities for the different sources of flooding. In addition, the Welsh Government National Flood and Coastal Erosion Risk Management Strategy identified all the Risk Management Authorities in Wales that need to work in collaboration to deliver the measure and objectives in the National Strategy. Table 5 identifies the key partners who Blaenau Gwent need to work with.

Table 5: Risk Management Authorities in Blaenau Gwent

Organisation Name	Primary Role
Welsh Government	Overall responsibility for all matters relating to flooding and coastal erosion in Wales
Natural Resources Wales	Welsh Government sponsored body that has operational responsibilities for flooding from main rivers, the sea and coastal erosion; and oversight responsibilities in relation to all flood and coastal erosion risk management in Wales. Also responsible for the administration of Internal Drainage Districts that fall within the RBD.
Blaenau Gwent County Borough Council	Responsible for the management of flood risk from local sources.

	Responsible for highway drainage.
Welsh Water / Dwr Cymru	Responsible for providing a high quality water supply to customers and to take away wastewater and return in to the environment safely.

The following table is a list of additional risk partners we work with in Blaenau Gwent.

Table 6: Additional Flood Risk Partners in Blaenau Gwent

Organisation Name	Primary Role
South Wales Fire and Rescue	The fire service operates in a response role to flood incidents.
Gwent Police	Protecting and reassuring the public within the operational area of Gwent. Operating in a responsive role to incidents.
Welsh Ambulance Service	Provides pre hospital emergency care and treatment. Operates in a responsive role to incidents.
National Flood Forum	National charity dedicated to supporting and representing communities and individuals at risk of flooding.
National Farmers Union	The NFU is the voice of farmers. Flooding is a critical issue for many of its members. Campaigning to ensure that agriculture is properly valued in flood risk management and rural flooding is effectively managed.
Local Partnership Forums	GAVO is a community voluntary organisation which is committed to strengthening the effectiveness of the voluntary and community sector in Blaenau Gwent.
Royal Society for the Protection of Birds	Focus on the UKs wildlife and protecting its natural habitats.
National Park Authorities	Protect the natural beauty of the Park, help visitors enjoy and understand it and foster the wellbeing of local people.
Network Rail	Aim to provide a safe, reliable and efficient railway.
Community and Town Councils	Are accountable to local people and have a duty to represent the interested of the different part of the community equally.
Local Resilience Forum	Multi-agency partnerships made up of representatives from public services, including the emergency services local authorities, the NHS, Natural resource Wales and others. They aim to plan and prepare for localised incidents and catastrophic emergencies.
Association of Drainage Authorities	Is the association for water level management organisations in the UK. Watch over and support the interests of drainage authorities, providing a

	forum for the exchange of ideas and discussions and disseminate information of common interest.
Country Land and Business Associations	CLA is a membership organisation for owners of land, property and business in rural Wales.
SWTRA – South Wales Trunk Road Agency	Responsible for managing, maintaining and improving the motorways, trunk roads and associated assets throughout South Wales on behalf of Welsh Government.
CADW	Responsible for the historic environment in Wales.
Housing Associations	Responsible for energy efficient, affordable homes acting as a responsible landlord.

* Refer to Appendix 2 for contact details for the organisations.

3.4 How this FRMP has been co-ordinated

Co-ordination has been achieved with NRW and other partners through regional working. The Welsh Local Government Association has played a pivotal role in organising and supporting this work. The South East Wales Flood Risk Management Group formed the platform from which the Flood Risk Management Plan working Group was set up. This group included LLFA's, Welsh Water and NRW and spread good practice and ensured we achieved a consistent approach across South East Wales.

These working groups also enabled the sharing of work programmes between LLFA's Dwr Cymru/Welsh Water and NRW.

Internal collaboration has been achieved through quarterly meetings of a Local Flood Risk Management Group and additional monthly meetings held to deal specifically with the Flood Risk Management Plan.

3.5 How measures are to be categorised

There is a requirement that measures should address the four categories of Prevention, Protection, Preparedness and Recovery.

Table 7: Types of Measures

Measure Type	Description
Prevention	Preventing damage caused by floods: <ol style="list-style-type: none"> 1. By avoiding construction of houses and industries in present and future flood prone areas; 2. By adapting existing receptors to the risk of flooding; and 3. Ensure that future development take flood risk into account by promoting appropriate land-use
Protection	Taking measures, both structural and non-structural, to reduce the likelihood of floods in a specific location.
Preparedness	Informing the population about flood risk and what to do in the event of a flood, including emergency response; developing emergency response plans in the case of a flood.

Recovery and Review	Returning to normal conditions as soon as possible and mitigating both social and economic impacts on the affected population.
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For the purpose of reporting to the EU measures must be specifically categorised within each of these four categories as identified in the table below.

Table 8: Categorisation of Measures

Prevention	
M21 Avoidance:	Measure to prevent the location of new or additional receptors in flood prone areas, such as land use planning policies or regulation.
M22 Removal or relocation:	Measure to remove receptors from flood prone areas, or to relocate receptors to areas of lower risk.
M23 Reduction:	Measures to adapt receptors to reduce the adverse consequences in the event of a flood action on buildings, public networks, etc...
M24 Other prevention:	Other measures to enhance flood risk prevention (may include, flood risk modelling and assessment, flood vulnerability assessment, maintenance programmes or policies etc...) Issue Ordinary Watercourse Consents, Comment on Flood Consequence Assessment, update and improve the accuracy of food risk mapping, understand local flood risk better.
Protection	
M31 Natural flood management / runoff and catchment:	Measures to reduce the flow into natural or artificial drainage systems, such as overland flow interceptors and or storage, enhancement of infiltration, etc and including in- channel, flood plain works and the reforestation of banks, that restore natural systems to help slow flow and store water.
M32 Water flow regulation:	Measures involving physical intervention to regulate flows, such as construction modification or removal of water retaining structures (e.g. dams or other on-line storage areas or development of existing flow regulation rules and which have significant impact on the hydrological regime.
M33 Channel, Coastal and floodplain works:	Measures involving physical interventions to freshwater channels, mountain streams estuaries coastal waters and flood prone areas of land, such as construction, modification or removal of structures or the alteration of channels, sediment dynamics management, dykes etc.
M34 Surface water management:	Measures involving physical interventions to reduce surface water flooding, typically, but not exclusively, in an urban environment, such as enhancing artificial drainage capacity or through sustainable drainage systems (SuDS).
M35 Other protection:	Other measures to enhance protection against flooding, which may include flood defences asset maintenance programmes or policies.
On-going maintenance programme.	
Preparedness	
M41 Flood forecasting and warning:	Measures to establish or enhance a flood forecasting or warning system.
M42 Emergency Event:	Measures to establish or enhance flood event institutional emergency response planning.
M43 Public awareness and preparedness:	Measures to establish the public awareness or preparedness for flood events.
M44 Other preparedness:	Other measures to establish or enhance preparedness for flood events to reduce adverse consequences. Flood awareness programme.
Recovery and Review	

M51 Individual and societal recovery: Clean up and restoration activities (buildings, infrastructure, etc) Health and mental health supporting actions, inc managing stress disaster financial assistance (grants, tax) inc disaster legal assistance, disaster unemployment assistance, temporary or permanent relocation, other

M52 Environmental recovery: Clean up and restoration activities (with several sub topics as mould protection, well-water safety and securing hazardous material containers)

M53 Other recovery and review: Other recovery and review, lessons learnt from flood events, insurance policies.

Each Blaenau Gwent proposed measure has been placed into one of these categories. The Blaenau Gwent measures are set out in section 6 of this document.

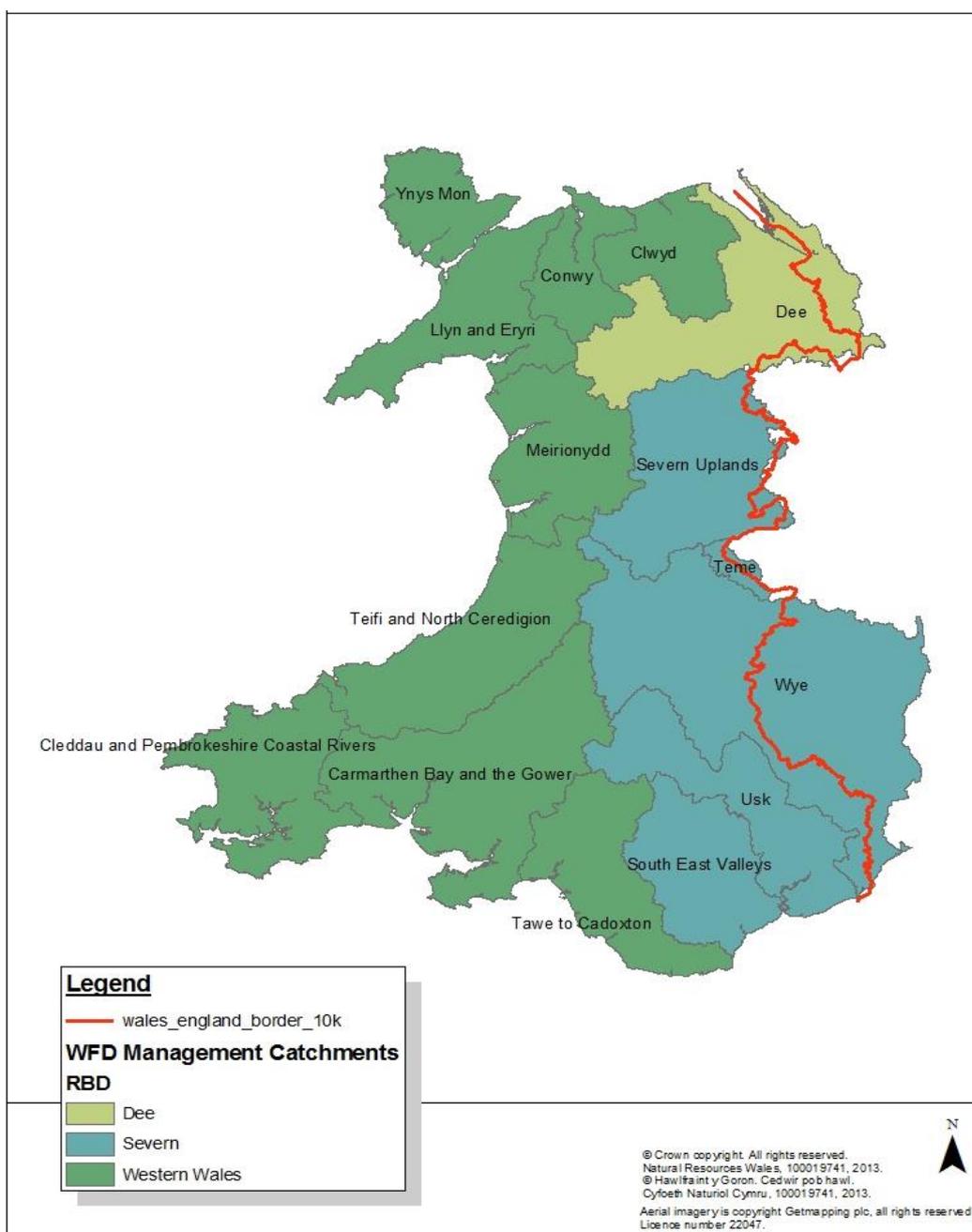
4. CO-ORDINATION WITH THE SEVERN RIVER BASIN MANAGEMENT PLAN

It is vital that in preparing the Flood Risk Management Plan that we take into account the Water Framework Directive which seeks to protect water quality or improve it where it does not currently meet 'good status'.

4.1 Overview of River Basin Districts in Wales

Wales is divided into three River Basin Districts the Dee, Severn and Western Wales. Blaenau Gwent is located within the Severn River Basin in a catchment known as South East Valleys.

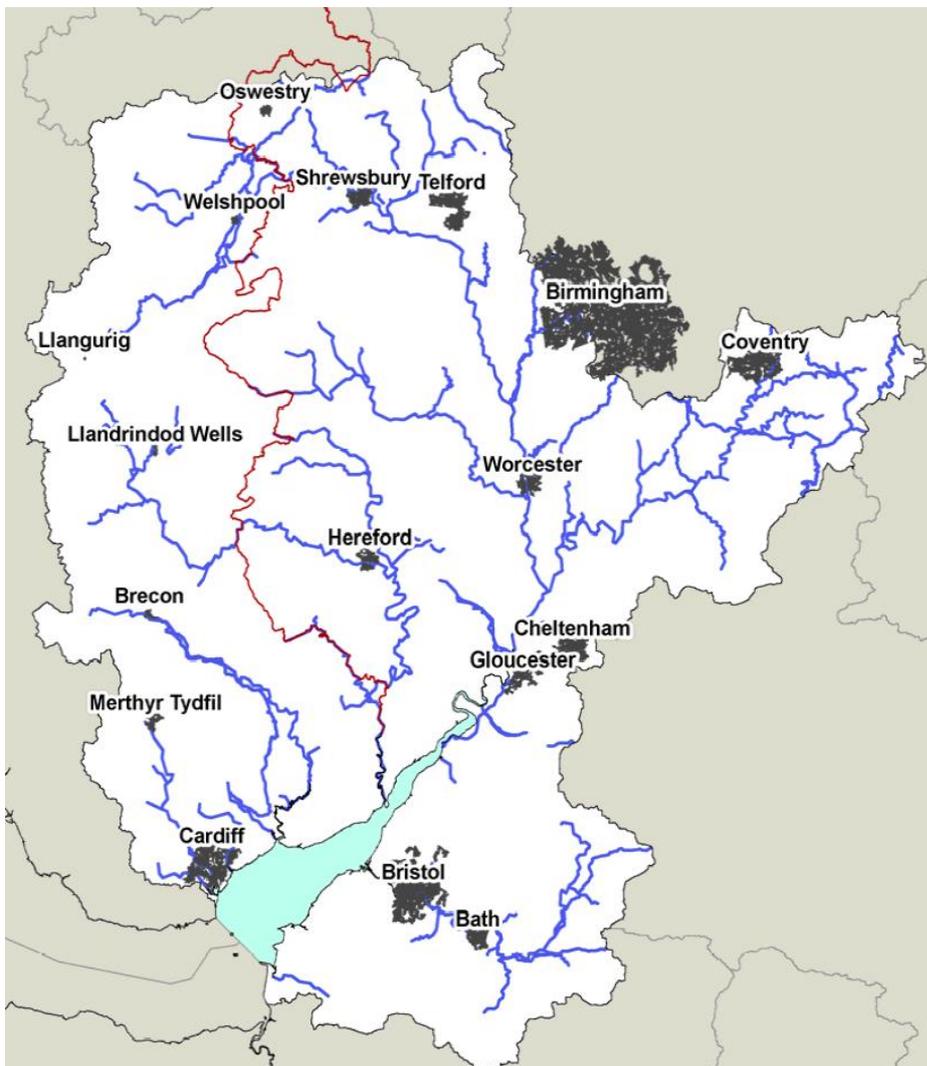
Figure 7: Wales River Basin Districts - Management Catchments



4.2 Severn River Basin District

The Severn River Basin District is home to over 3.5 million people and covers an area of 21,590 km², with about one third of the district in Wales. The River Severn is the longest river in Britain and flows into the Severn Estuary. As well as the River Severn and its main tributaries the district includes the rivers of South East Wales, including the Wye, Usk and Taf, and those of the counties of Avon and Somerset that drain into the Severn Estuary.

Figure 8: Severn River Basin Catchment Plan



4.3 Summary of co-ordination of development and implementation of the FRMP with the RBMP

The Severn River Basin Management Plan focuses on the protection, improvement and sustainable use of the water environment. The plan has been prepared under the Water Framework Directive, which requires all countries throughout the European Union to manage the water environment to consistent standards. Each country has to:

- prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters;
- aim to achieve at least good status for all water bodies by 2015. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve good status by 2021 or 2027;
- meet the requirements of Water Framework Directive Protected Areas;
- promote sustainable use of water as a natural resource;
- conserve habitats and species that depend directly on water;
- progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants;
- contribute to mitigating the effects of floods and droughts.

Flood risk management is one of the top reasons why a waterbody fails to meet the objective set under the WFD in Wales. This is why it is important to ensure that where action is needed to manage the risk of flooding, an option is selected that does not lead to further deterioration of the water environment but instead seeks opportunities for improvement and delivery of joint benefits.

In selecting the measures in the Flood Risk Management Plan we have considered what is proposed in the River Basin Management Plan to ensure that both are complimentary. Where there is an obvious opportunity to deliver against the Water Framework Directive and the Flood Regulations, we have endeavoured to include it.

Table 10 which identifies the Blaenau Gwent measures identifies linkages with the RBMP.

The draft River Basin Management Plan can be found at the following link.

https://consult.environment-agency.gov.uk/portal/ho/wfd/draft_plans/consult?pointId=s1405417965041#section-s1405417965041

5. BLAENAU GWENT COUNTY BOROUGH COUNCIL FLOOD RISK MANAGEMENT OBJECTIVES

In identifying the Blaenau Gwent County Borough Council Flood Risk Management objectives it is important that the objectives accord with the Welsh Government National Strategy for Flood and Coastal Erosion Risk Management in Wales (WG 2011).

5.1 Summary of Welsh Government National Flood and Coastal Erosion Risk Management (FCERM)

“The National Strategy for Flood and Coastal Erosion Risk Management in Wales” identified four overarching objectives which are the framework for flood risk management in Wales. These are:

1. **Reducing the consequences** for individuals, communities, businesses and the environment from flooding and coastal erosion;
2. **Raising awareness of and engaging people in the response** to flood and coastal erosion risk;
3. **Providing an effective and sustained response** to flood and coastal erosion events: and
4. **Prioritising investment** in the most at risk communities.

5.2 Blaenau Gwent Flood Risk Management Objectives

Blaenau Gwent used the national objectives and a set of seven objectives developed by NRW (Local Flood Risk Management Strategies Local Strategy (WG 2011) to develop the Blaenau Gwent objectives. These were slightly amended following SEA Statutory consultation and public consultation on the draft Flood Risk Management Strategy.

The eight objectives developed by Blaenau Gwent have been reviewed against the National Strategy and Flood Risk Management Plan requirements and are deemed to still sufficiently reflect the key objectives of flood risk management work in Wales.

The objectives were developed by considering the three main aspects of sustainable flood risk management:

Social: people and communities

Economic: potential cost and economic benefit

Environment: cultural heritage, landscape and habitat diversity.

The principles of sustainable flood risk management remain the key deliverable for the flood risk management work of Blaenau Gwent.

Table 9 provides details of the Blaenau Gwent objectives and how they link to the Welsh Government National Flood and Coastal Erosion Risk Management Strategy and the aspects of sustainable flood risk management.

Table 9: Blaenau Gwent Objectives compared with FCERM Sustainability Objectives

			1. Reducing the consequences	2. Raising awareness	3. providing response	4. Investment
Social & Cultural	S1	Reduce the number of people exposed to flooding risk.	X	X		
	S2	Reduce the number of residential, community, heritage assets and commercial properties exposed to flooding risk	X	X		
	S3	Reduce risk to life (No of people exposed to death x velocity of flow)	X	X	X	
	S4	Reduce disruption to key infrastructure (Roads, Hospitals, Power Sub Stations etc.)	X		X	
Economic	Ec1	Reduce economic damage (e.g. Annual Average Damages AAD)	X			
	Ec2	Reduce cost of management (note a risk management outcome for use in appraisal)				X
Environmental	En1	Reduce the number of important habitats (including those protected by international, national or local designations) exposed to flooding risk	X		X	
	En2	Improve naturalness (reduce modification of channels / waterbodies)	X		X	

5.3 Selecting measures to achieve objectives

Any measures that Blaenau Gwent undertakes as part of this Local Flood Risk Management Plan will be for the purpose of meeting these objectives and thus the Welsh Government National Flood Coastal Erosion Risk Management objectives.

The measures within this Plan have been selected after:

- considering the source and severity of the risk;
- what risk management processes are in place;
- how the risk might change in the future; and
- what the options to address the risk are.

The most appropriate measures are selected after considering all of these factors along with the technical feasibility and the cost. The appropriate measure was then assessed against the plan objectives to ensure it is in keeping with the National Strategy.

6. MEASURES TO MANAGE FLOOD RISK

6.1 Borough wide Measures to mitigate flood risk

The following measures have been taken from the Blaenau Gwent Flood Risk Management Strategy (2013) and are to be used for this Flood Risk Management Plan.

The following table identifies all on-going measures from the Flood Risk Management Strategy. These have then been split into borough wide measures which are to be used across the Borough, and local measures which are used in specific locations. The two local measures are identified in orange and are used in chapters 7 and 8.

Table 10: Measures to be used in Blaenau Gwent FRMP

Specific Measure		Measure Type	Link to FRMP Objective	Link to RBMP & Severn FRMP	Time Scale	Progress
MEASURE BG01: We will avoid inappropriate development in flood risk areas						
BG01.1	Adopt the Local Development Plan and implement Policy SP7 which directs new development away from high flood risk areas	Prevention M21	S1, S2, S3	Work with others to avoid inappropriate development	2016-2021	On-going
BG01.2	Raise awareness in Planning Committees when developments potentially impact on flood risk areas.	Prevention M21	S1, S2, S3, Ec2	Work with others to avoid inappropriate development	2016-2021	On-going
MEASURE BG02: Incorporate greater resilience into the design of developments (houses, buildings, roads and paved areas)						
BG02.1	Adopt the Local Development Plan and implement Policy SP7 which includes a requirement to incorporate measures in design and construction to reduce the effects of flooding. This will ensure buildings are designed to reduce the effects of flooding	Prevention M23	S2, Ec1, Ec1, Ec2	Promote flood resilience and flood proofing	2016-2021	On-going
BG02.2	Promote appropriately designed developments in relation to site levels, creation of high ground and setting floor levels	Prevention M23	S1, S2, Ec2	Promote flood resilience and flood proofing	2016-2021	On-going
BG02.3	Increase approaches in road schemes to utilise materials which provide more resilience to flooding incidents where they are likely to occur.	Prevention M23	S4, Ec2, En2	Promote flood resilience and flood proofing	2016-2021	On-going
MEASURE BG03: Develop maintenance regimes for culverts & drains and identify priority areas						
BG03.1	Develop reporting system to register details of events at the time of flooding incidents.	Prevention M24	Ec2	Learn from flood events	2016-2021	On-going
BG03.2	Develop and maintain a register of flood assets.	Prevention M24	Ec2	Learn from flood events	2016-2021	On-going

Specific Measure		Measure Type	Link to FRMP Objective	Link to RBMP & Severn FRMP	Time Scale	Progress
BG03.3	Develop a maintenance recording system and ensure these are informed by the register of flooding incidents.	Prevention M24	Ec2	Flood Forecasting warning & incident management	2016-2021	On-going
BG03.4	Carry out a risk assessment of all critical culverts and flood assets, as identified through the register of flooding incidents, maintenance records or flood assets, and prepare an action plan to address any unacceptable risks as a result of the review.	Prevention M24	Ec2	Modelling & Hydrology	2016-2021	On-going
MEASURE BG04: Improve monitoring and data recording						
BG04.1	Ensuring flood events are recorded in line with the form identified in PRFA	Prevention M24	Ec2	Flood Forecasting warning & incident management	2016-2021	On-going
BG04.2	Implementing a geographical database of flood events to inform future mapping of flood risk areas	Prevention M24	Ec2	Flood Forecasting warning & incident management	2016-2021	On-going
MEASURE BG05: We will make more use of our natural environment						
BG05.1	Delivery of the Blaenau Gwent Local Biodiversity Action Plan (LBAP), specifically HAP1, Wet woodlands, HAP4, Wetlands and HAP 5 Rivers and Streams.	Protection M31	S1, Ec1, En2	Ensure appropriate floodplain compensation	2016-2021	On-going
BG05.2	Consider/Review the designation and management of Local Nature Reserves (LNR) where they assist in flood prevention.	Protection M31	S1, Ec1, En2	Ensure appropriate floodplain compensation	2016-2021	On-going
BG05.3	Consider planning requirements for wetland habitat creation as part of the Development Management Process.	Protection M31	En2	Ensure appropriate floodplain compensation	2016-2021	On-going

Specific Measure		Measure Type	Link to FRMP Objective	Link to RBMP & Severn FRMP	Time Scale	Progress
BG05.4	Consider the designation and management of existing wetland areas where they assist in flood prevention.	Protection M31	Ec2, En2	Ensure appropriate floodplain compensation	2016-2021	On-going
BG05.5	BGCBC will encourage developers to incorporate wetland and other natural attenuation schemes in new development through guidance, policies and pre-application discussions with Planning Control case officers.	Protection M31	S2, Ec2, En2	Ensure appropriate floodplain compensation	2016-2021	On-going
MEASURE BG06: We will increase approaches that utilise the natural environment, like adopting soft engineering in place of traditional solutions, managing of the land to reduce storm runoff, creating more wetlands to store water						
BG06.1	Identify contributions to delivery of the Woodlands for Wales Strategy (Welsh Gov) e.g. Shelter belt planting opportunities.	Protection M31	Ec2, En2	Sustainable woodland and forestry management	2016-2021	On-going
BG06.2	Review the existing management of ordinary water courses in regard to controlling invasive weeds.	Protection M31	Ec2, En2	RBMP: Manage invasive non-native species	2016-2021	On-going
BG06.3	Review the existing management plans for Local Nature Reserves which assist in storing and filtering water.	Protection M31	Ec2, En2	RBMP: Improve flows and water levels	2016-2021	On-going
BG06.4	When designing streetscape works consideration will be given to incorporating a greater area of tree planting and permeable areas.	Protection M31	S4, Ec2, En2	RBMP: Reduce impacts of other physical modifications	2016-2021	On-going
BG06.5	Identify opportunities for planting to stabilise river banks.	Protection M31	Ec2, En2	RBMP: Reduce impacts of other physical modifications	2016-2021	On-going
MEASUREBG07: deploying the sustainable drainage systems (SuDS) approach for surface water management for both new and existing developments						

Specific Measure		Measure Type	Link to FRMP Objective	Link to RBMP & Severn FRMP	Time Scale	Progress
BG07.1	Adopt the Local Development Plan and implement Policy DM1 which requires proposals to reduce surface water run off through minimising an increase in impermeable surfaces and using Sustainable Drainage systems, where appropriate.	Protection M34	Ec1, Ec2	Support implementation of SUDs	2016-2021	On-going
BG07.2	Encourage developers through pre-application discussions to use sustainable drainage systems pending the introduction of the new SuDS regime	Protection M34	En2	Support implementation of SUDs	2016-2021	On-going
BG07.3	Specify greater use of SuDS systems for new developments as conditions of planning consent.	Protection M34	S1, S2, En2	Support implementation of SUDs	2016-2021	On-going
MEASUREBG08: Identifying and protecting areas suitable for inundation and water storage to prevent flooding elsewhere						
BG08.1	Identify areas suitable for inundation and water storage.	Protection M31	Ec1, En2	Identify opportunities for floodplain restoration	2016-2021	On-going
BG08.2	Consider how any identified flood storage areas can be protected through changes to existing procedures, policy, legislation etc.	Protection M31	En2, En3	Identify opportunities for floodplain restoration	2016-2021	On-going
MEASUREBG09: Enable those at risk of flooding to play a proactive role in shaping the flood risk management service they receive						
BG09.1	Develop community resilience schemes for areas at risk of flooding	Preparedness M43	S1, S2, S3	Provide service to local resilience fora	2016-2021	On-going
BG09.2	Ensuring wider awareness of individual risk to increase levels of preparedness and planning for flooding events	Preparedness M43	S1, S3, Ec1	Raise awareness of flood risk issues	2016-2021	On-going
MEASURE BG10: Improve the response to flooding incidents by the emergency response organisations, as well as individuals and businesses						
BG10.1	Ensure lessons from flooding incidents in this and other areas are captured	Preparedness M42	Ec1, Ec2	Learn from flood events	2016-2021	On going

Specific Measure		Measure Type	Link to FRMP Objective	Link to RBMP & Severn FRMP	Time Scale	Progress
BG10.2	Appropriate trained staff to ensure awareness of roles, responsibilities and an effective response for those involved in flood response.	Preparedness M42	Ec1, Ec2	Work closely with NRW	2016-2021	On going
MEASURE BG11: Ensure effective recovery arrangements are in place and supported by all relevant parties						
BG11.1	Involvement in multi-agency recovery planning, ensuring plans are tested for suitability	Preparedness M42	Ec1, Ec2	Provide flood incident response service	2016-2021	On-going
MEASURE BG12: Develop better flood forecasting and warning systems						
BG12.1	Developing a consistent approach to recording of flood events and flood assets.	Preparedness M41	Ec2	Flood Forecasting warning & incident management	2016-2021	On going
BG12.2	Develop a communication strategy for at-risk communities where risks that cannot be immediately reduced are communicated to the Emergency Planning Team and affected businesses or residents.	Preparedness M43	S1, S2, Ec2	Flood Forecasting warning & incident management	2016-2021	On going
MEASURE BG13: Improve communication and support to residents, businesses and communities						
BG13.1	Set up a "Flood Risk Community Engagement Group" to help communicate flooding and flood risk to residents, businesses, community etc.	Preparedness M44	S1, S2	Raise awareness of flood risk issues	2016-2021	On going

Blaenau Gwent County Borough Council is responsible for the delivery of these measures.

Number of Borough Wide Measures in each Category:



(Refer to [Table 7](#) on page 31 for an explanation of the categories)

6.2 Joint Schemes

There are no joint schemes currently underway however there is a proposed scheme with NRW at Aberbeeg/Llanhilleth to modify the river bed and bank to facilitate fish pass and strengthen the gabion embankment. Blaenau Gwent is working with NRW to identify funding to enable this work to proceed.

6.3 Local Measures to mitigate flood risk

The maps provided by NRW identify the areas at risk of flooding. From our experience the most likely source of surface water flooding is from blocked grids at intakes to culverts and therefore this is also considered in our local analysis.

For each community area the following analysis has been undertaken:

Overview

- A description of the location within the Borough
- Size of the area
- Brief outline of the geography and types of development
- A description of the water catchment area
- A table of significant intakes in the area

Map of Flood Risk

- A map identifying the NRW flood extent areas for low (1 in 1000), medium (1 in 100) and high (1 in 30) risk
- The location of culverts (significant intakes)

Conclusions

- An overall conclusion drawn from our analysis of the maps

- A table of the risks to people and property, economic activity and natural and historic environment

Measures to mitigate flood risk

- Through analysing the maps and data provided by NRW specific locations are identified where measures are proposed. The measures involve investigating the source of the problem and identifying solutions; and in some instances, where there is knowledge of past flooding, an awareness measure is also put in place.
- A diagram identifying the number of measures in the community area.

Chapter 7 identifies the local measures for communities within the Flood Risk Area whilst chapter 8 identifies the local measures for communities outside the Flood Risk Area.

7.0 HOW WE WILL MANAGE FLOOD RISK IN OUR FLOOD RISK AREA

7.1 Badminton Community Area

Overview

Badminton Community Area is in the northern part of the Borough just south of the Heads of the Valleys Road but north of the town centre of Ebbw Vale, in the central Ebbw Valley. It covers an area of 268 hectares towards the top of the Ebbw Fawr valley. It consists of a mixture of flat development plateaus in the west; the residential areas of Badminton, Glyncoed and Pant-y-Fforest to the east; and the more steeply sloping hillside of Mynydd Carn-y-cefn further east. The River Ebbw runs in a southern direction between the settlement area and the steeply sloping hillsides to the east.

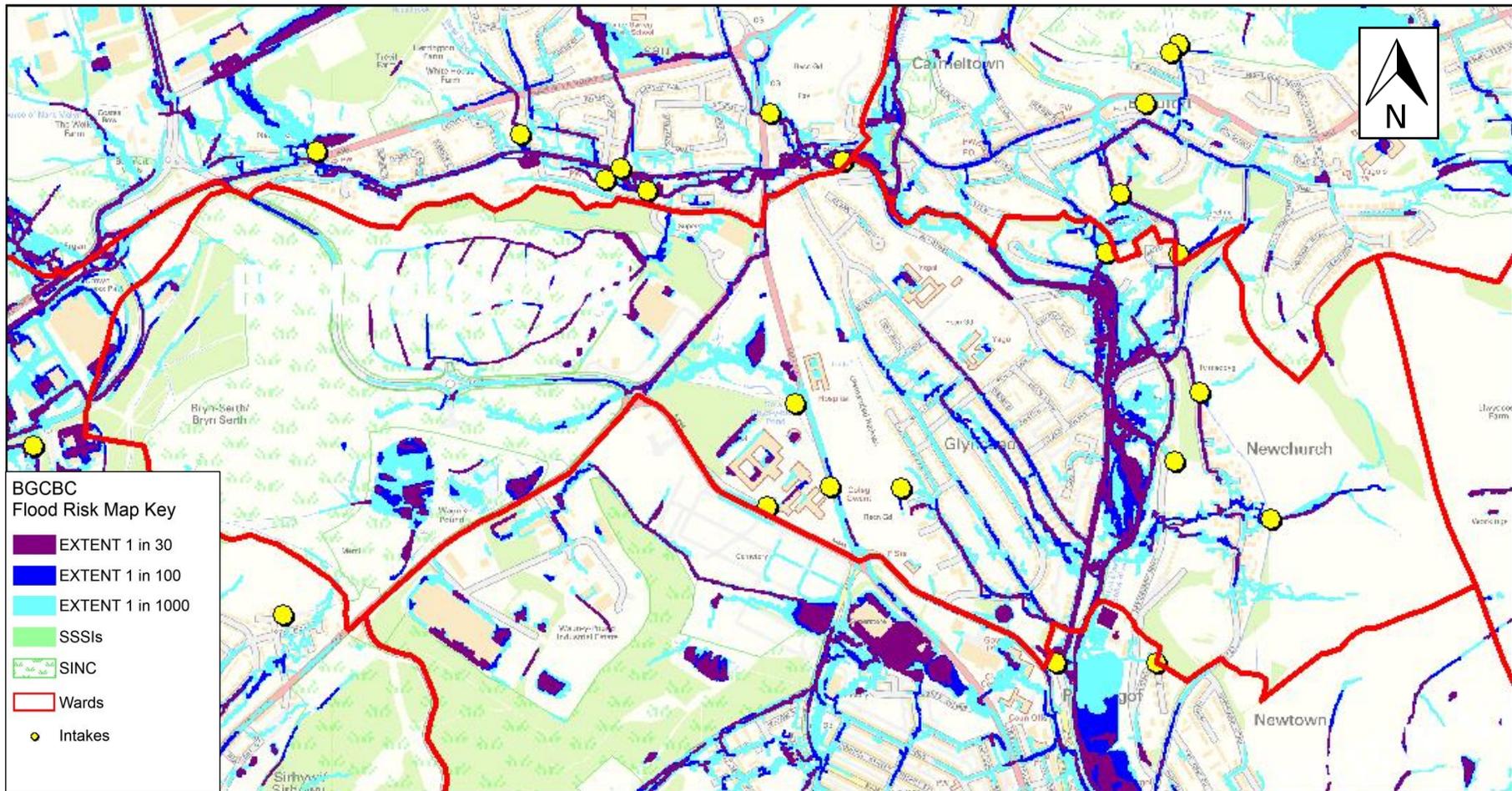
There are a number of unnamed watercourses on the eastern slopes of the community area, the largest of which discharges a catchment area of around 35 hectares into the River Ebbw, below Newchurch Road. Although there are a number of unnamed watercourses on the western side of the community area in a substantial catchment of some 90 hectares, the discharge points are directed to the community areas on the northern and southern boundaries and seem to pose little risk to the Badminton Community Area.

There are known to be 6 significant intakes in the area which are listed below, 1 of which is critical.

Table 11: Badminton – Significant Intakes

Grid Ref	Address
1729610689	Rear of 18 Pantyfforest
1712011000	Near Ty Meddyg Farm
1639410769	Car Park, Rhiw Wen (C)
1606010715	Opposite cemetery entrance, Nr. E.V. Comprehensive School
1621810771	College culvert Ebbw Vale
1689411336	Plas-y-Coed Home

Figure 9: Badminton – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Badminton indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 12: Badminton – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA Badminton				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	3,389	329	0	298
Residential Properties (n)	1,523	140	0	127
Services (n)	4	3	0	0
Risk to Economic Activity				
Non-Residential Properties (n)	126	7	3	7
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	2.6	0	0	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	1	0	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	0	0	0	0
Listed Buildings (n)	1	1	0	0
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	37.06	6.2	3.4	2.0

Table 13: Badminton - Measures to mitigate flood risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Glyncoed	Low to high	Residential properties Highways	BG03.4 Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Rhiw Wen	Low to high	Residential properties Highways	BG03.4 Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
		Residential properties Highways	BG09.2 Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Badminton Grove	Low to high	School Residential properties Highways	BG03.4 Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Glanyrafon	Low to high	Residential properties highways	BG03.4 Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Beaufort Road	Med to high	Highways	BG03.4 Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Newchurch / Pant-y-Fforest	Low to high	Residential properties Heritage assets	BG03.4 Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2 Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Cambridge Gardens	Low to high	Residential properties	BG03.4 Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2 Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



7.2 Beaufort Community Area

Overview

Beaufort Community Area is in the northern part of the Borough north east of Ebbw Vale in the central Ebbw Fawr Valley. It covers an area of 344 hectares, to the north there is open moorland containing reservoirs which slopes down to the Ebbw Fawr valley in a south westerly direction. The residential communities of Garnlydan and Beaufort are found in the east and south of the area. The River Ebbw runs in a southerly direction on the western edge of the community area.

The northern half of the ward is largely drained into the River Clydach, which runs from the overflow on Carno Reservoir. Garnlydan housing estate lays to the north west of the ward and is not at risk of any serious flooding due to its elevated position.

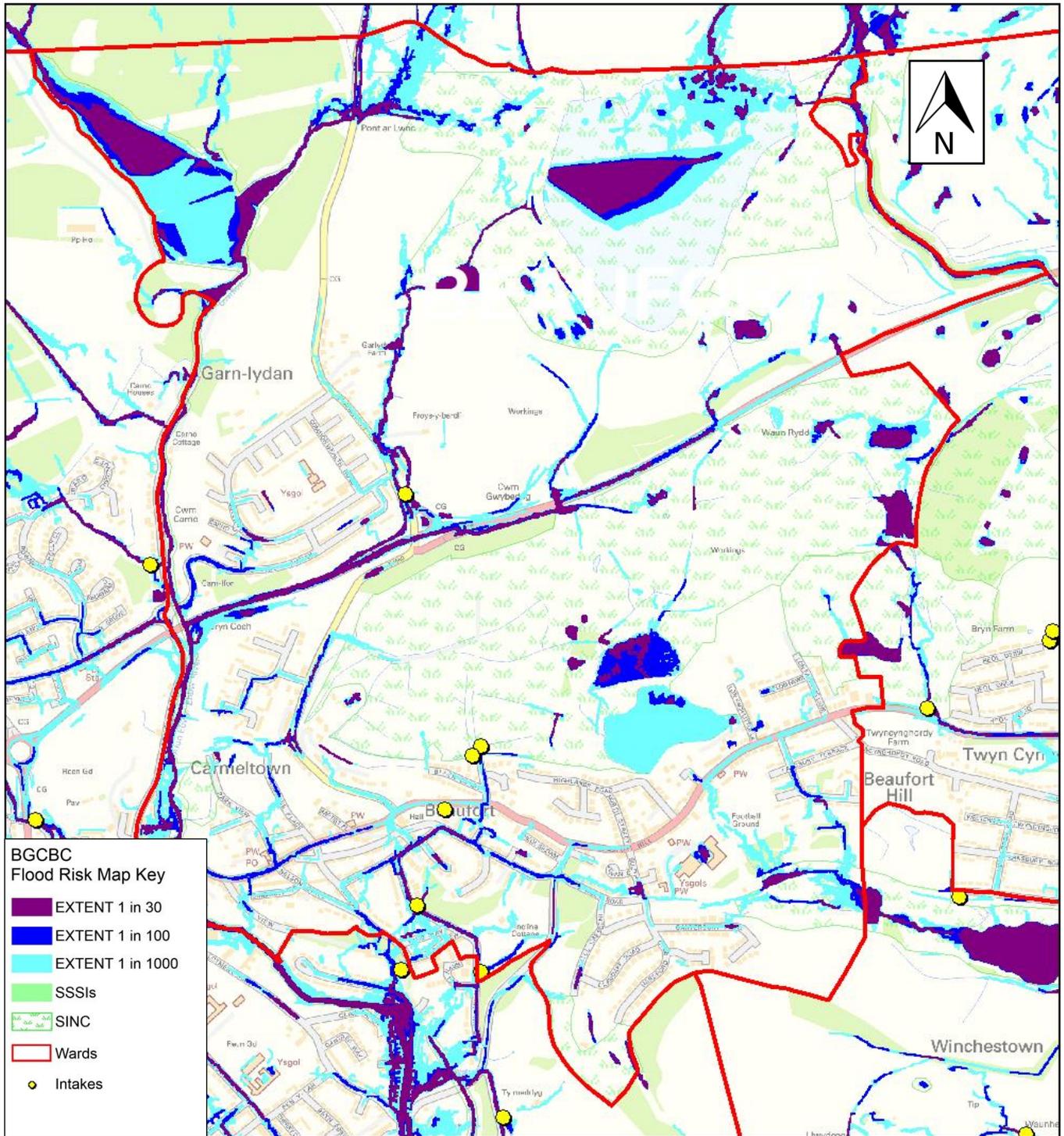
To the south of the A465 an area of 10 hectares drains to the River Ebbw via a series of open watercourses which become culverted to the east at Bryn Goch and to the south at Bryn Cendl.

There are known to be 6 significant intakes in the area which are listed below, 1 of which is critical.

Table 14: Beaufort – Significant Intakes

Grid Ref	Address
1707011330	Opposite Petrol Garage, Brynawelon
1692711481	Side of "Brookside", Hawthorn Road (C)
1698811698	Rear of Awelfryn Close Frost Road
1706811822	North of 20 Blaen Cendl
1705211819	North of 19 Blaen Cendl
1690212410	Near Bank House Nursing Home Garnlydan

Figure 10: Beaufort – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Beaufort indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 15: Beaufort – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Beaufort				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	4,037	392	110	66
Residential Properties (n)	1,822	167	51	28
Services (n)	7	2	0	0
Risk to Economic Activity				
Non-Residential Properties (n)	173	10	0	2
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	2	0	0	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	1	0	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	0	0	0	0
Listed Buildings (n)	0	0	0	0
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	116.08	1.8	0.530	0.40

Table 16: Beaufort - Measures to mitigate flood risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Beaufort Ballroom area to Bryn Kendall	Low to Med	Residential properties Businesses Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Football Ground to Lansbury Terrace	Low to Med	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



7.3 Ebbw Vale North Community Area

Overview

Ebbw Vale North Community Area is in the northern part of the Borough north of Ebbw Vale town centre in the central Ebbw Fawr Valley. It covers an area of 249 hectares consisting of a mix of steeply sloping hillside, open countryside, residential areas and an Industrial Estate. The River Ebbw Fawr runs in a southwards direction through the community area. To the east of the river are the settlements of Pontygof and Newtown and the steeply sloping hillside of Pant-y-Fforest. To the west of the river the land rises fairly steeply to the Sirhowy Ridge, the residential areas of Willoughton and Hilltop rise from the valley floor. The Waun-y-Pound Industrial Estate is located in the north west of the area at the head of the valley.

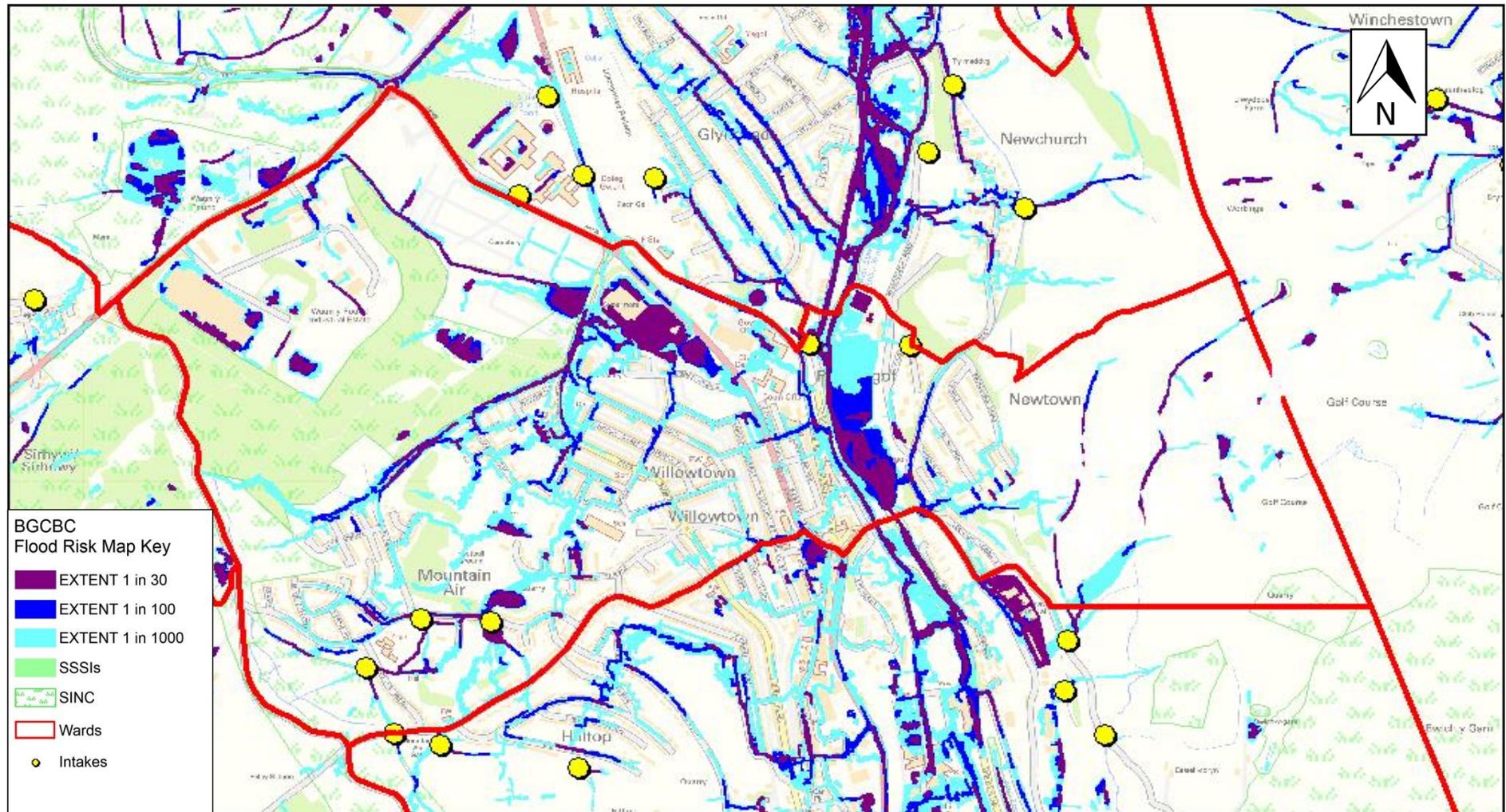
To the east of this community area 20 hectares of previously landscaped hillside behind the Newtown estate drains via open ditches into Ebbw Vale South before discharging into the River Ebbw. The north west of the community area receives the discharge from Badminton Community Area plus an extra 38 hectares of land at Waun-y-Pound area.

There are known to be 6 significant intakes in the area which are listed below, 3 of which are critical.

Table 17: Ebbw Vale North – Significant Intakes

Grid Ref	Address
1697510353	"Cedron" Newchurch Road
1706710838	Near Transport Deopt Newchurch Road
1676910345	Opposite Gospel Hall, Beaufort Road
1582409657	Side of 47 Darby Crescent, Hilltop (C)
1586709527	Rear of 33 Heol -Yr-Ysgol Hilltop (C)
1599309643	S/O 17 Darby Crescent (C)

Figure 11: Ebbw Vale North – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Ebbw Vale North indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 18: Ebbw Vale North – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Ebbw Vale North				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	5,068	667	200	102
Residential Properties (n)	2,318	284	85	43
Services (n)	2	1	0	0
Risk to Economic Activity				
Non-Residential Properties (n)	263	36	8	12
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	0.9	0	0	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	2	1	0	01
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	0	0	0	0
Listed Buildings (n)	4	1	0	1
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	44.12	3.5	2.8	2.0

Table 19: Ebbw Vale North – Measures to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Eugene Cross Park Playing Fields	Low to High	Residential properties Non-residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Newtown	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Between Tredegar Road and Darby Crescent	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Tesco and surrounding Area	Low to High	Non-residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Willowtown and lower Gwaun Helyg Area	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Derby Crescent to Upper Gwaun Helyg	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



7.4 Ebbw Vale South Community Area

Overview

Ebbw Vale South Community Area is in the northern part of the Borough in the central Ebbw Fawr Valley. It covers an area of 661 hectares which stretches from the Sirhowy Ridge to the west down to the River Ebbw Fawr in the valley floor back up to the ridge between the Ebbw Fawr and Fach. The town centre of Ebbw Vale and the residential areas of Briery Hill, Ty Llwyn and Garden City are located on the steeply sloping hillsides. A large mixed use development, known as 'The Works', consisting of a hospital, learning zone, leisure centre, playing pitches, family history and genealogy visitor centre, are located on the valley floor. There are further plans for the area including residential development and a business hub. The River Ebbw runs in a southerly direction through the centre of the area.

The catchment area for this ward is mainly situated on steep sided hillsides on both the east and west. The community area also takes the run off from neighbouring areas on route to the final discharge point at the River Ebbw. The eastern side of the valley has numerous unnamed open water courses which become culverted under the built up area further down the slopes.

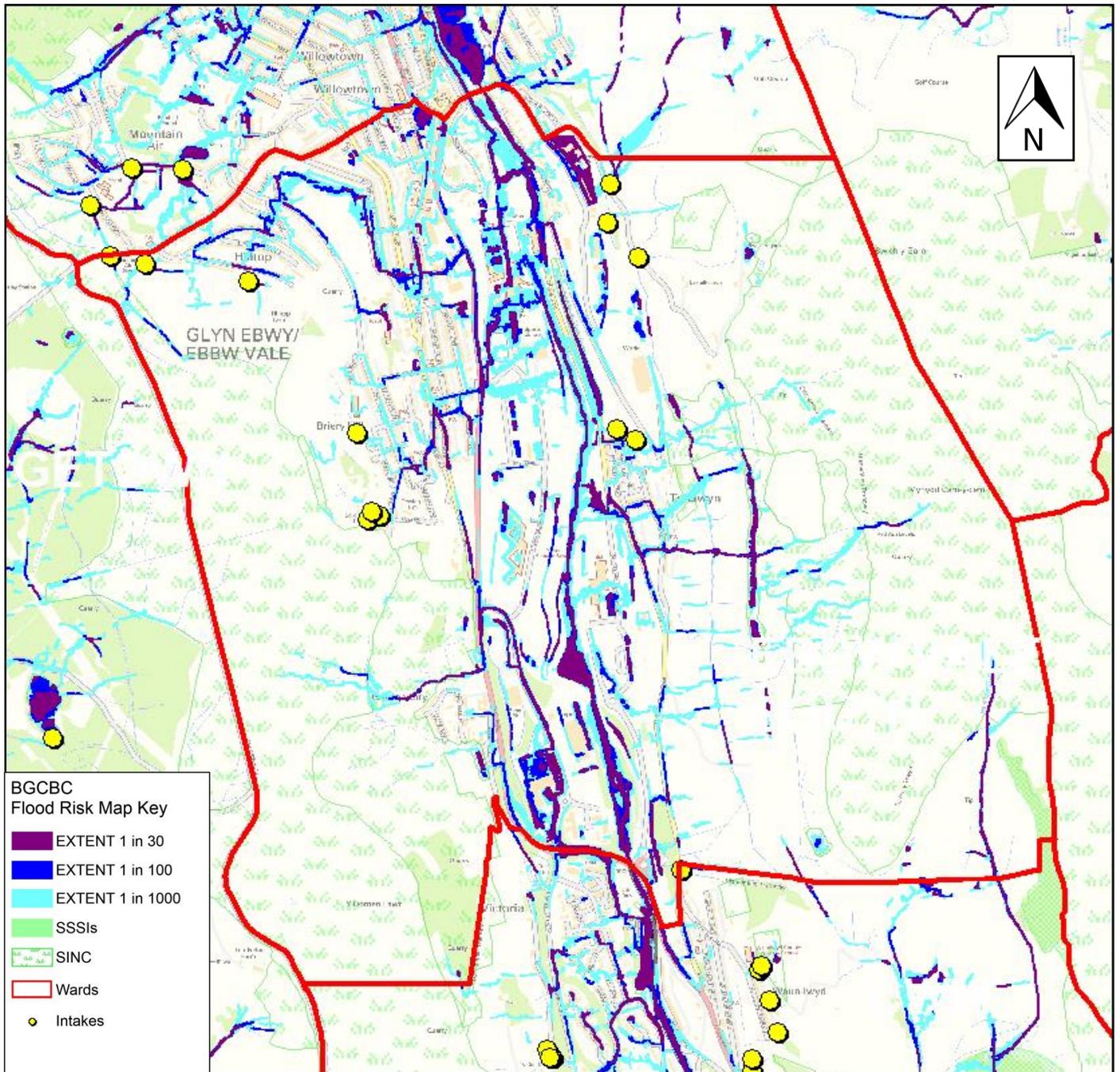
The Western slopes in the north of the ward discharge into bordering areas and will not affect properties within this area.

There are known to be 13 significant intakes in the area which are listed below, 4 of which are critical.

Table 20: Ebbw Vale South – Significant Intakes

Grid Ref	Address
1746808758	Rear Lane, Oakfield Tce, Tyllwyn
1741908756	Rear of, 9 Hill Street, Tyllwyn
1748709356	Morning Star Roads Bottom of Hill
1739209470	Outlet to Pond, Cwmdraw Ind Est (C)
1739909594	Stilling Basin, Morning Star Road (C)
1575709360	Side of 2 Mountain Air Cottages, Hilltop
1761308388	Rear of Y Nyth And & 37 Eastville Road
1620709276	Rear of 51 Moorland Road, Hilltop (C)
1587009332	Rear of 125 Moorland Road Hilltop (C)
1659008479	Coronation Park, High Street (1)
1658408517	Coronation Park, High Street (2)
1663908502	Coronation Park, Manhole on Culvert
1656508772	Briery Hill Primary School.

Figure 12: Ebbw Vale South – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Ebbw Vale South indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 21: Ebbw Vale South – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Ebbw Vale South				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	5,045	740	181	212
Residential Properties (n)	2,417	315	77	90
Services (n)	6	3	1	0
Risk to Economic Activity				
Non-Residential Properties (n)	511	65	11	31
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	3	1	0	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	2	1	1	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	
Sites of Special Scientific Interest (SSSI) (ha)	1.5	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	1	1	0	0
Listed Buildings (n)	6	3	1	1
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	283.55	3.5	2.1	2.0

Table 22: Ebbw Vale South – Measures to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Cwm Draw Ind. Est.	High	Non-residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
The Dingle to junction with Heol Cae Ffwrnais	Low to High	Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Lime Avenue	Low to High	Non-residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Moorland Road to Pennant Street	Low to Med	Residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Tyllwyn	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Briery Hill	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Park Road to Festival Drive	Low to High	Non-residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Lower Festival Drive	Low to high risk	Non-residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



7.5 Georgetown Community Area

Overview

Georgetown Community Area is in the northern western part of the Borough in the Sirhowy Valley, south east of Tredegar Town Centre. It covers an area of 408 hectares and consists of the valley side to the east of the Sirhowy River which rises to the top of the mountain ridge between Tredegar and Ebbw Vale. The residential community of Georgetown runs along the eastern bank of the Sirhowy River.

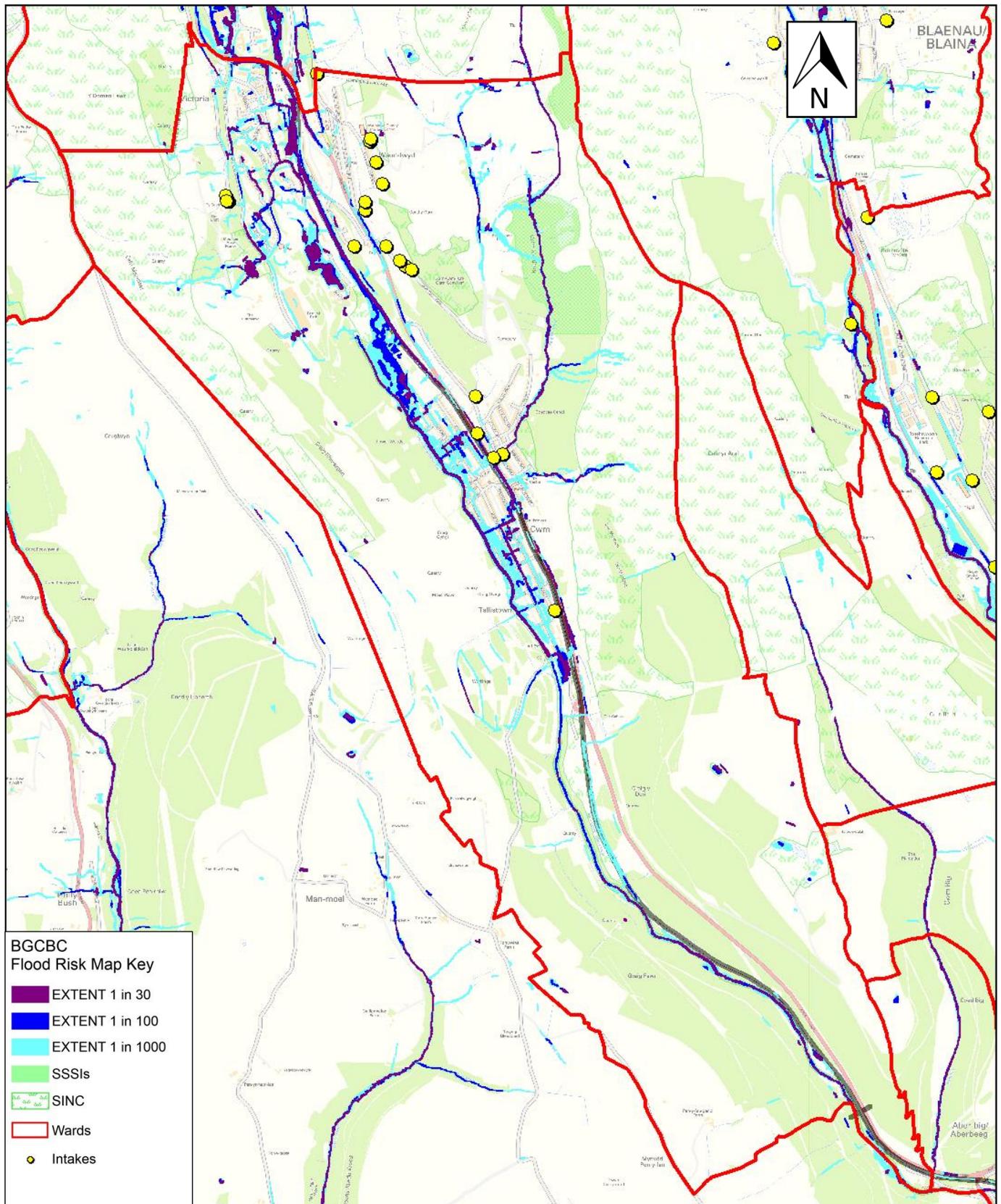
The steep sided slope to the east of Georgetown accounts for the flood risk in this community area with around 420 hectares having to pass through the various built up areas via a small number of outlets into the River Sirhowy via a combination of ditches and culverted sections under the built up area.

There are known to be 6 significant intakes in the area which are listed below, 4 of which are critical.

Table 23: Georgetown – Significant Intakes

Grid Ref	Address
1549207249	Road Leading to Troedrhiwgwair (C)
1542807394	Near 52 Peacehaven (C)
1524507691	Near The Rhyd (C)
1483208748	Georgetown Hill Below Rock House
1490708801	Georgetown Hill on horseshoe bend
1479008140	"The Glen" Popular Rd (C)

Figure 13: Georgetown – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Georgetown indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 24: Georgetown – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Georgetown				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	4,094	1199	503	315
Residential Properties (n)	1,740	510	214	134
Services (n)	4	0	0	0
Risk to Economic Activity				
Non-Residential Properties (n)	173	7	1	6
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	1	1	0	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	0	0	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	0	0	0	0
Listed Buildings (n)	2	0	0	0
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	26.46	2.3	1.5	0.5

Table 25: Georgetown – Measures to Mitigate Flood Risks

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Sirhowy Hill Ind. Est. to St James Way	Low to Med	Residential Non-residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Between Mafeking Terrace and Park Place	Low to Med		BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Whitworth Terrace & Woodfield Road to Vale Terrace	Med to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
St. James Park to Rhyd Terrace	Low	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Southend to Peacehaven	Med to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Sirhowy Valley to Bedwellty Pits	Low to Med	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



7.6 Rassau Community Area

Overview

Rassau Community Area is in the northern part of the Borough north of Ebbw Vale. It covers an area of 482 hectares consisting of a mixture of open moorland in the north and the urban area of Rassau Industrial Estate and Rassau residential area in the southern half. The proposed Circuit of Wales is to be constructed on the open moorland north of the Rassau Industrial Estate.

The greater proportion of the catchment area for this ward is from the northern area and is the source of the River Ebbw. This catchment consists mainly of boggy moorland behind Rassau Industrial Estate including 375ha of land which is outside the ward and which flows into the Llangynidr reservoir before out flowing through Carno reservoir then into the valley below forming the early stages of the River Ebbw.

The northern end of Rassau Industrial Estate is protected by a substantial concrete lined ditch which intercepts additional runoff from approximately 117ha at the north western edge of the ward and which discharges at the following three points:

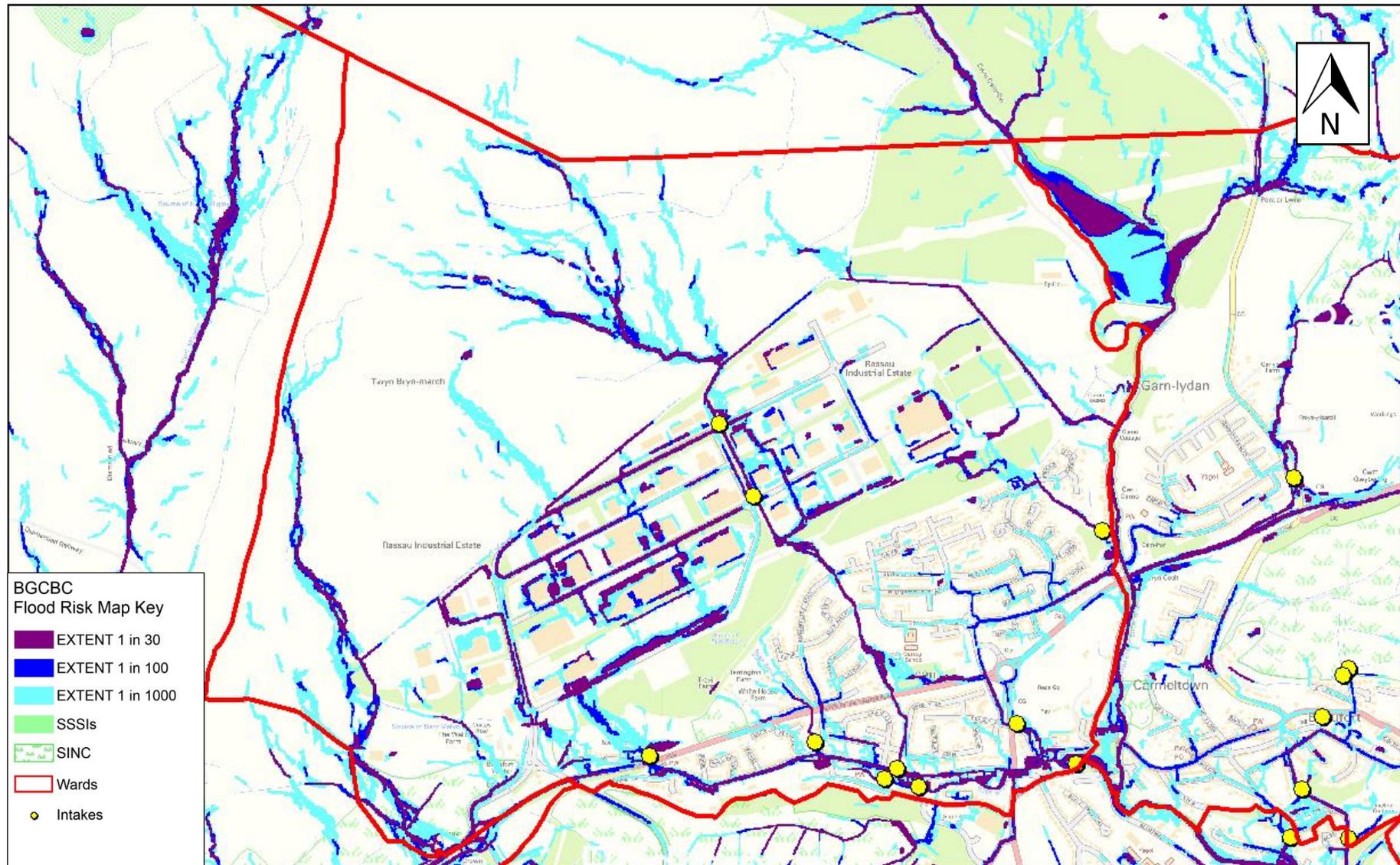
One to the west, which discharges through the western tip of the Rassau Industrial Estate (known as Nant Melyn) before discharging into the River Sirhowy in a neighbouring community area. One to the south, through the Rassau Industrial Estate and Old Rassau residential area into the Cwm Nant Melyn and the Nant Melyn. This discharges into the Rassau Brook on the southern boundary of the community area before flowing into the River Ebbw in the Badminton Community Area. The final discharge point for the Northern Rassau Catchment is to the eastern boundary, which outfalls into the River Ebbw at Reservoir Rd, just south of the Carno reservoir.

There are known to be 9 significant intakes in the area which are listed below, 4 of which are critical.

Table 26: Rassau – Significant Intakes

Grid Ref	Address
1632912252	Rear of "Gernant", Reservoir Road
1624611553	Near Carmel Chapel Carmeltown (C)
1607111678	Near Pant Gwyrdd, School Road, Rassau
1577611489	Ty Bryn Club, Outfall east of Car Park (C)
1567111510	Rear of Ty Bryn Club
1570611543	Opposite Ty Bryn Club (C)
1496211580	Near Subway, Nantycroft Rassau
1546311621	Side of Hollybush Row, Rassau Road
1517312568	Near Unit 44 Rassau Ind Estate (C)

Figure 14: Rassau – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Rassau indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 27: Rassau – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Rassau				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	3,476	399	42	108
Residential Properties (n)	1,704	170	18	46
Services (n)	2	1	0	0
Risk to Economic Activity				
Non-Residential Properties (n)	283	21	6	13
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	3.1	0.59	0.48	0.50
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	3	0	1	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	6.23	0.03	0	0
Scheduled Ancient Monuments (ha)	1	0	1	0
Listed Buildings (n)	1	0	1	0
Licensed Abstractions (LA) (n)	1	0	0	1
Sites of Interest for Nature Conservation (SINC) (ha)	10.04	3.2	2.1	0.9

Table 28: Rassau – Measures to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Rassau Ind. Est.	Low to High	Non-residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Land between Rassau Ind. Est. and Nant y Croft	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Land between existing and proposed A465, Rassau	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
South of existing A465, Rassau	Low to High	Residential properties Non-residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



7.7 Sirhowy Community Area

Overview

Sirhowy Community Area is in the north western part of the Borough north of Tredegar town centre. It covers an area of 1650 hectares consisting of a mixture of open moorland in the north leading down into the head of the Sirhowy Valley. The northern area consists mainly of open countryside but does contain the village of Trefil and Trefil quarry. The southern part of the area is more urban and includes the Tafarnaubach Industrial Estate and the residential areas of Tafarnaubach, Dukestown and Sirhowy.

The vast majority of the Sirhowy catchment area lays in a chiefly uninhabited area to the north of the A464 covering an area of approximately 13,365 ha and is on a gently sloping valley which eventually contributes to the River Sirhowy. The catchment area is increased by the inclusion of a further 238 hectares to the north of the community boundary.

The catchment to the north east of the community area is collected via a network of unnamed streams on the upper slopes which converge into the Nant Milatw before joining the River Sirhowy to the south of the Shon Sheffrey reservoir. A number of minor streams on the lower slopes discharge directly into the Nant Trefil to the north of the community area.

The north west of the ward is chiefly served by the Nant-y-Llechau and the River Sirhowy, (which are sourced on these upper slopes) before they converge and discharge into Shon Sheffrey reservoir. There is also a network of smaller streams on the lower western slopes which also discharge into the reservoir.

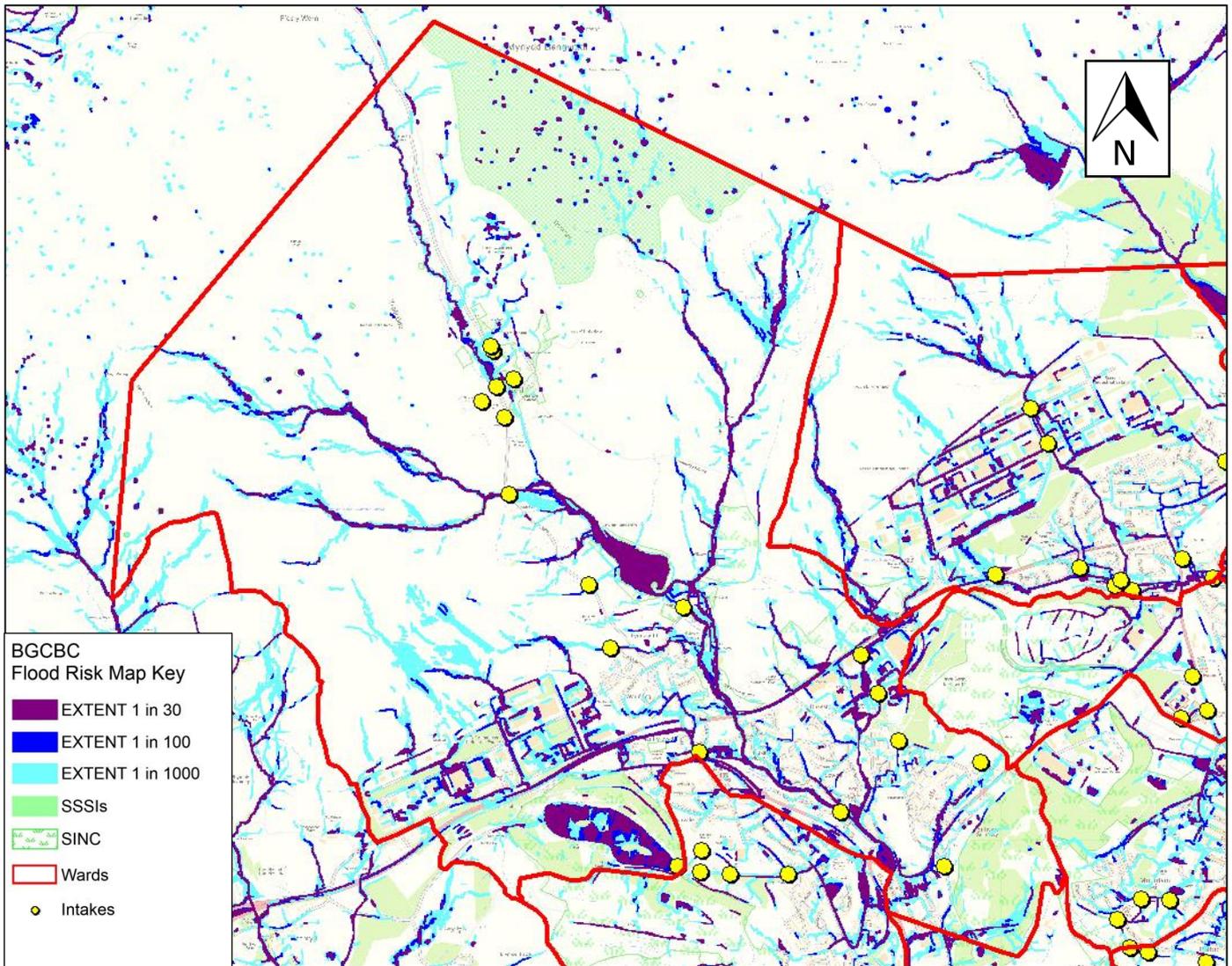
There are known to be 15 significant intakes in the area which are listed below, 7 of which are critical.

Table 29: Sirhowy – Significant Intakes

Grid Ref	Address
1482908914	Open Land Opp. 1 Thomas Ellis Way
1321910525	St Luke's Road opp. Crown Inn (C)
1312711385	Waterworks Lane
1268411141	Nr "Dorian House", Ty-Newydd
1256711514	Trefil Road, North of Penrhyn Farm
1209612054	Trefil Rd South of Cattle Grid (C)
1205112577	Car park Trefil RFC
1202412714	River Culvert North of Giles Row (C)
1200612915	Land Opp "Tafarn Ty Uchaf" (Quarryman's Arms)
1417211103	Crow Business Park (C)
1439410575	Land Nr 43 Shepherds Close
1488210459	Rear of Garages, Bryn Pica, Sirhowy (C)

0212512740	On Hill Leading From Trfil Rd to Railway Tce (C)
1287911990	Opposite Tafarn Ty Uchaf Trefil
1308809842	Bryn Bach (C)

Figure 15: Sirhowy – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Sirhowy indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 30: Sirhowy – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Sirhowy				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35)	6,096	924	228	369
Residential Properties (n)	3,004	393	97	157
Services (n)	6	2	1	0
Risk to Economic Activity				
Non-Residential Properties (n)	549	21	6	27
Airports (n)	0	0	0	
Primary/Trunk Roads (km)	4.5	2.1	2.0	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	5	2	0	1
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	127.7	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	2	2	0	0
Listed Buildings (n)	6	2	1	1
Licensed Abstractions (LA) (n)	2	1	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	141.51	6.2	4.6	4.1

Table 31: Sirhowy – Measures and Objectives to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
South of Trefil Quarry	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
South of Shon Sheffrey Reservoir	Low to Med	Non-residential	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Waundeg	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Tafanaubach Ind. Est.	Low to High	Non-residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Crown Avenue Area	Low to High	Non-Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Dukes Meadow Area	Low to Med	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



7.8 Tredegar Central and West Community Area

Overview

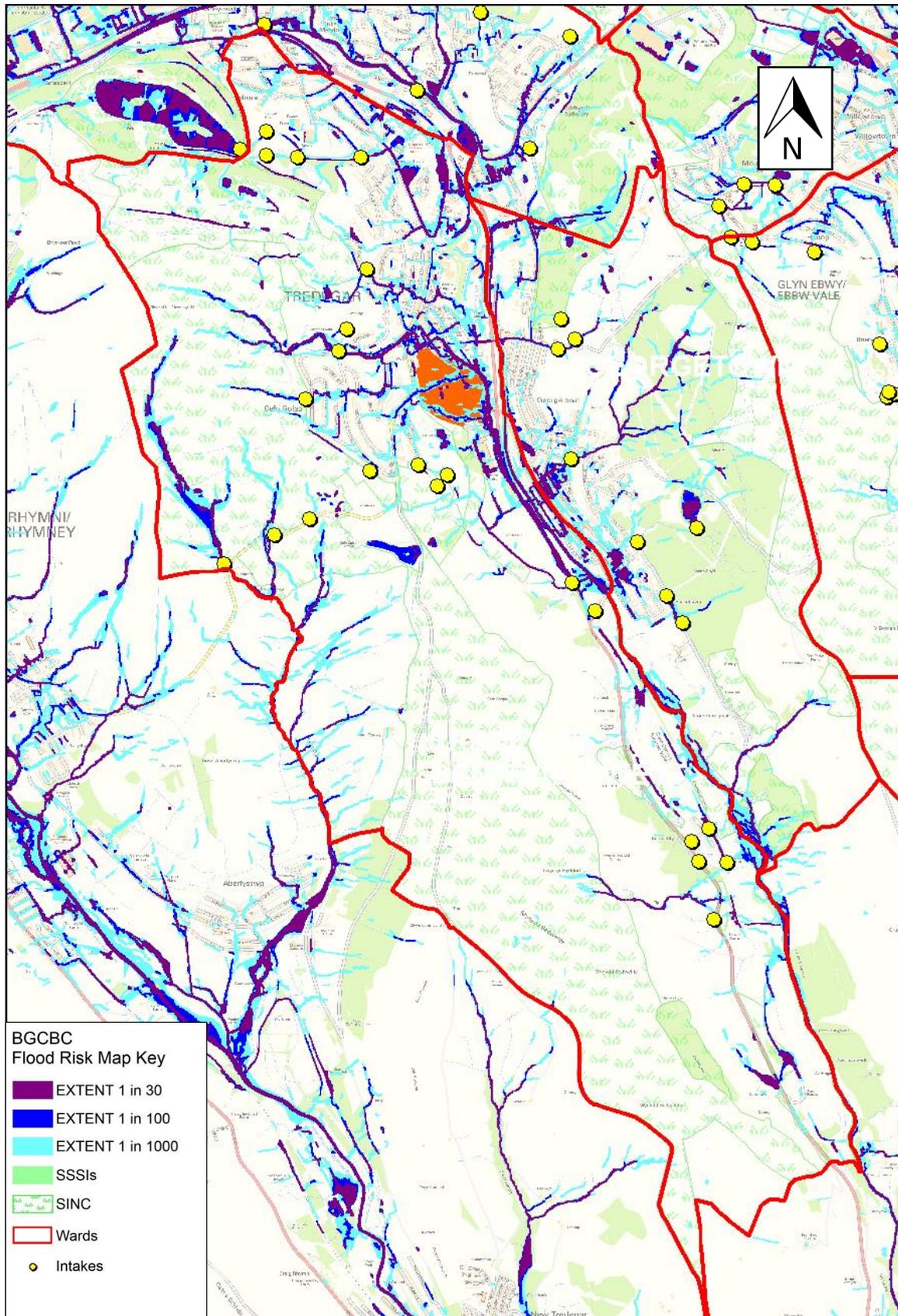
Tredegar Central and West Community Area is in the north western part of the Borough in the Sirhowy Valley. It covers an area of 1,106 hectares from the River Sirhowy to the top of the mountain ridge between Tredegar and Rhymney. The north east of the area consists of the town centre of Tredegar, the residential areas of Cefn Golau and Ashvale and the Tredegar Business Park. To the west of this the land rises gradually to Rhymney Hill. The southern half of this area consists of a steeply sloping mountainside rising to the open moorland of Mynydd Bedwellty which slopes down towards the Rhymney Valley. The ward is largely situated on the western side of the River Sirhowy, and is drained in the north by a number of watercourses which are diverted around to the north and south of the Cefn Golau and Park Hill residential areas. The steeper valley slopes to the south of the ward are drained by a number of open ditches and streams which gradually merge into fewer but larger watercourses before discharging into the river Sirhowy.

There are known to be 19 significant intakes in the area which are listed below, 7 of which are critical.

Table 32: Tredegar Central and West – Significant Intakes

Grid Ref	Address
1563005858	A4048 South of access Rrad to Bedwellty Pits (C)
1554206050	Access Road to Bedwellty Pits
1563306121	Land in front of 15 Bedwellty Pits
1571305935	Land in front of 6 Railway Houses (Bedwellty Pits)
1346507814	Tredegar/Rhymney Mountain Road 200m Past Cattle Grid
1330717739	As above but 350m past Cattle Grid
1300307572	Tredegar/Rhymney Mountain Road Near Heathcock Farm
1378708085	Rear of 25/27 Attlee Way, Cefn Golau
1344408476	Rear of Car Park Between 91/93 Gainsborough Road
1362408735	Access Road To Jesmond Dene Stadium (C)
1377609183	Opp Ashford Bungalow, West Hill
1323109940	S/O Ashvale Football Ground o'flow from Bryn Bach Pond (C)
1374509795	Bottom of Refuse Tip Road (C)
1314209793	Refuse Tip Road
1322909810	Refuse Tip Road
1321910525	N. of Heathfield r/about adj to A4048
15660563	Adjacent to A 4048 Near The Lower Farm (C)
1421708059	Tredegar Recreation (C)
1416508070	Land above Tredegar Recreation (1) (C)

Figure 16: Tredegar Central & West – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Tredegar Central and West indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 33: Tredegar Central and West – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA Tredegar Central				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	7,421	1391	498	21
Residential Properties (n)	3,545	592	212	9
Services (n)	6	6	1	0
Risk to Economic Activity				
Non-Residential Properties (n)	549	48	13	25
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	5.3	0	0	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	0	0	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	10.28	1	1	?
Scheduled Ancient Monuments (ha)	0	0	0	0
Listed Buildings (n)	15	6	1	0
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	554.52	15.9	10.3	9.2

Table 34: Tredegar Central and West – Measures and Objectives to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Gwent Way to St Matthew Close	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Gwent Way to Cefn Golau to the Promenade	Low to High	Residential properties Highways Listed Buildings	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Stable Lane to Pochin Crescent	Low to High	Service Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



8.0 HOW WE WILL MANAGE FLOOD RISK IN OTHER AREAS OF THE BOROUGH

8.1 Abertillery Community Area

Overview

Abertillery Community Area is in the southern part of the Borough and includes the town centre of Abertillery. It covers an area of 460 hectares and runs across the Ebbw Fach valley with the River Ebbw Fawr running through the centre of the area. To the west of the river is the steeply sloping mountainside of Cefn Bach. To the east of the river is a steeply sloping mountainside leading up to Twyn Du. The town centre and residential area of Abertillery nestles mainly on the eastern side of the river along the valley side.

There are a number of unnamed watercourses on the eastern slopes of the community area in the Duffryn Road / Cefn Crescent / Roch Street area which discharges a catchment area of around 13 hectares ultimately into the Tillery River and thence to the Ebbw Fach River.

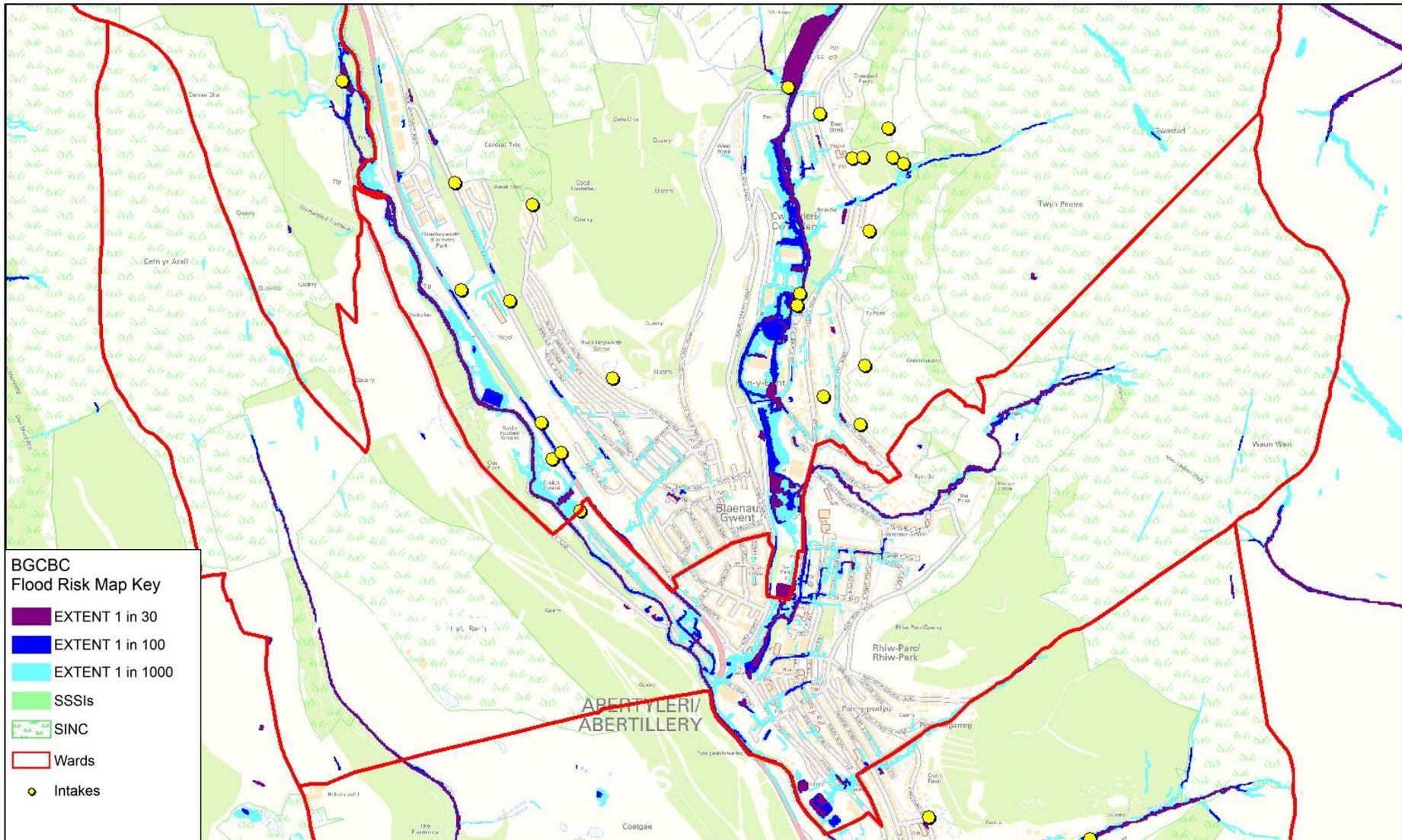
A watercourse known as Nant Big rises in the south-western corner of the community area in a catchment area of around 42 hectares and flows in a south-easterly direction for a distance of some 400 metres into the community area on the southern boundary.

There is known to be 1 significant intake in the area which is listed below, this is not critical.

Table 35: Abertillery – Significant Intakes

Grid Ref	Address
2103404626	Entrance to car park, Abertillery Park

Figure 17: Abertillery – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Abertillery indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 36: Abertillery – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Abertillery				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	5,231	608	143	49
Residential Properties (n)	2,466	259	61	21
Services (n)	7	3	0	0
Risk to Economic Activity				
Non-Residential Properties (n)	360	21	10	11
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	0.9	0	0	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	1	1	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	0	0	0	0
Listed Buildings (n)	1	0	0	0
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	246.47	15.3	10.8	5.3

Table 37: Abertillery – Measures to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Station Hill	Low to High	Non-residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Glebelands	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Vivian Street	Low to Med	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



8.2 Blaina Community Area

Overview

Blaina Community Area is in the central part of the Borough in the eastern Ebbw Fach Valley. It covers an area of 794 hectares and runs across the Ebbw Fach valley from Mynydd Carn-y-cefn in the west down to the river Ebbw Fach in the valley floor and rising again to the top of Mynydd James in the east. The district town of Blaina and the residential areas of Blaina and West Side can be found in the valley floor where as the residential area of Cwm Celyn clings to the valley side on the eastern side of the river. Part of the Rising Sun Industrial Estate and the whole of the Blaina Enterprise Centre are within this area.

Several unnamed watercourses converge in the north-east of the community area on Mynydd James at Bryn-maen to form Nant Ystruth which flows in a southerly direction to Cwmcelyn and Glanystroth picking up a multitude of tributaries along the way which discharges a catchment area of 110 hectares. Immediately to the west of the main catchment area is a smaller catchment area of some 10 hectares where water emerges from the ground immediately to the north of Cwmcelyn Newydd before being culverted underneath the housing estate. To the south-east of this several unnamed watercourses discharge a further catchment area of some 18 hectares which is immediately to the east of the new Tanglewood housing development.

In the south-east of the community area are several unnamed watercourses and issues on Mynydd James to the south of East Pentwyn which discharge a catchment area of some 12 hectares. A little further south several issues emanate from Mynydd James which converge and flow in a northerly direction towards Maeshafod. There is also an unnamed watercourse in this area which flows from a small pond to the north-eastern corner of Blaina cemetery, a combined catchment area of around 5 hectares.

South of this are a series of drains on the mountainside only one of which discharges towards the built environment into a culvert to the rear of the civic amenity site in Bournville which is situated in the neighbouring community area of Cwmtillery. In this vicinity are also several issues which converge and flow in an unnamed watercourse to the storm water system in the rear lane at the north-east of Glanrafon Terrace which again lies just inside the Cwmtillery Community Area. A combined catchment area of 35 hectares.

There are a number of unnamed watercourses on the north-western slopes of the ward on Mynydd Carn-y-Cefn which discharge a catchment area of some 44 hectares into two culverts near Llanerch-y-Pant farm. Just south of this is a significant catchment area of around 100 hectares where several unnamed

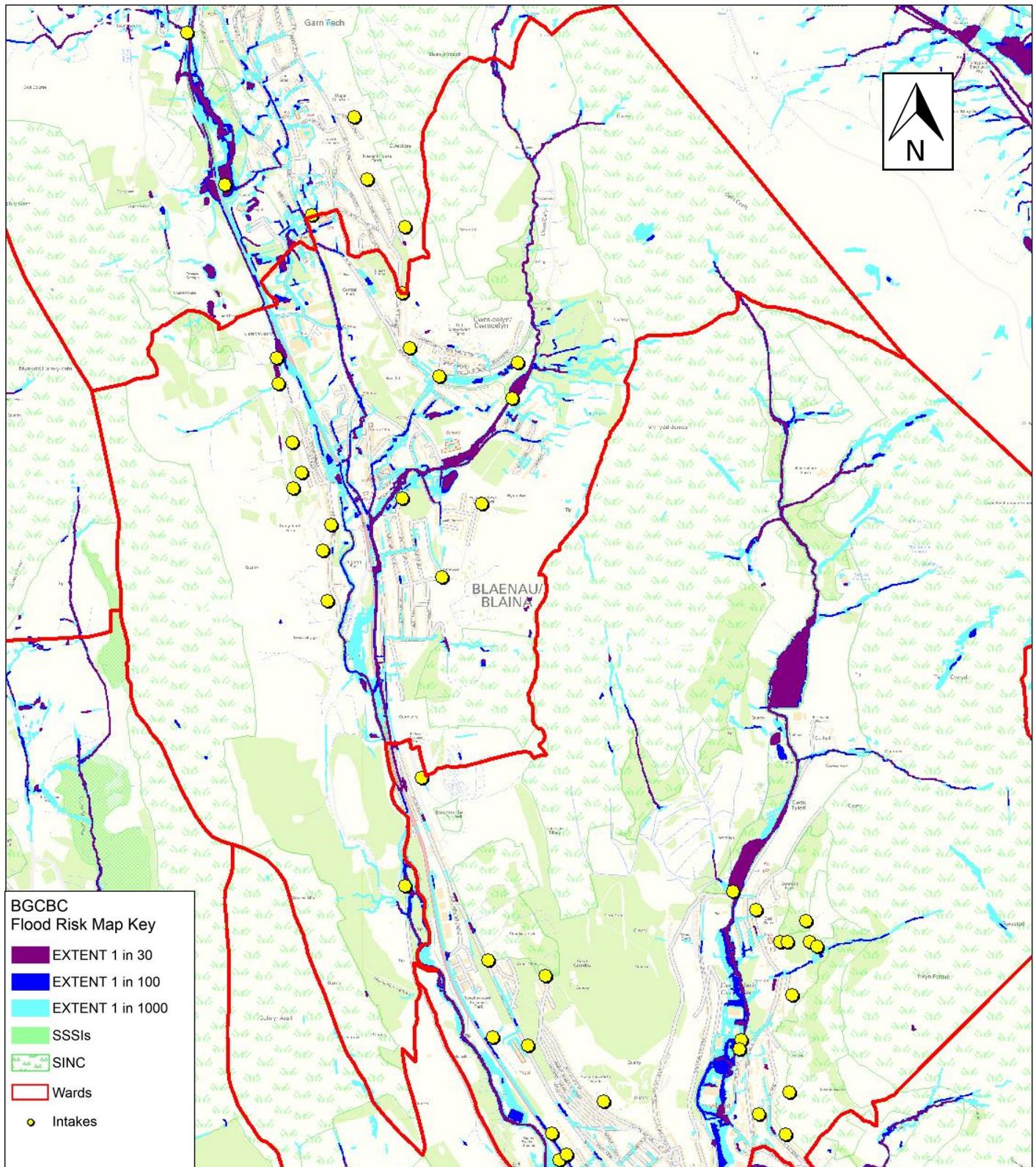
watercourses discharge into the River Ebbw Fach via a number of culverts at West Side.

There are known to be 18 significant intakes in the area which are listed below, 3 of which are critical.

Table 38: Blaina – Significant Intakes

Grid Ref	Address
2019208949	Caddicks Row
2071208446	Club Row, Glanstruth (C)
1985407842	S/O 30 Victoria St, Blaina (C)
1981607720	R/O 51 Victoria St, Blaina (C)
1920008023	Pond R/O 7 Parsons Row
1962308526	Headwall adj. to track leading to Llanerch-Y-Pant
1958908606	Pond Adj. to track leading to Llanerch-Y-Pant
1966508233	R/O 17 Mount Pleasant Row
1970308098	R/O 15 Parsons Row
2038607589	Near Maeshafod Bungalows
2018907966	Bennett Street near old Bake House
2020606111	Old Blaina Road
182610965	Adjacent to access road - Ty Pwcca
2073708618	Cwmcelyn Pond overflow (A)
2036708545	Cwmcelyn Pond overflow (B)
2022508683	R/O 25 Surgery Road, Cwmcelyn
1983407478	Rear garden of 32 Glan Ebbw, Blaina
2057007955	Land north of 29 East Pentwyn

Figure 18: Blaina – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Blaina indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 39: Blaina – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Blaina				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	5,377	371	291	153
Residential Properties (n)	2,521	158	124	65
Services (n)	8	2	0	1
Risk to Economic Activity				
Non-Residential Properties (n)	376	14	2	3
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	2.2	1	0	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	2	1	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	0	0	0	0
Listed Buildings (n)	2	1	1	0
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	291.78	14.9	10.8	5.6

Table 40: Blaina - Measures to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
A467 Brynmawr to West Side, Blaina	Low to Med	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Queen Street / High Street	Low to Med	Residential properties Non-Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
East of Pentwyn to High Street	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



8.3 Brynmawr Community Area

Overview

Brynmawr Community Area is in the northern part of the Borough at the head of the Ebbw Fach valley and contains the district town centre of Brynmawr. It covers an area of 582 hectares consisting of a mix of open moorland in the northern half and an open valley head to the south. The southern part is mainly urban containing the district town centre of Brynmawr the residential area of Brynmawr and the Noble Square Industrial Estate.

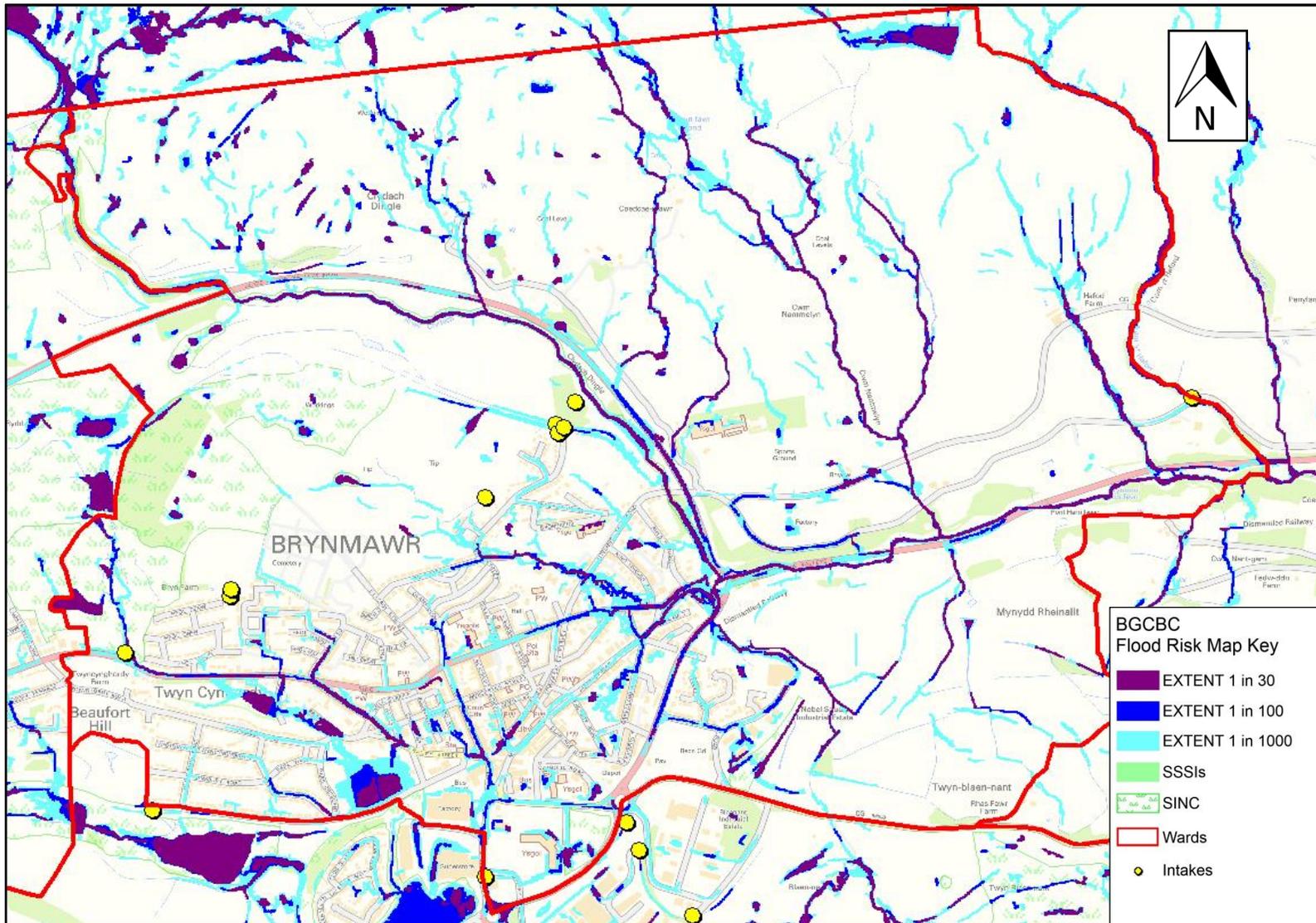
There are a number of unnamed watercourses on open moorland to the north, north-east and east of the urban area of Brynmawr which discharge a significant catchment area of some 438ha into the River Clydach, all flowing away from the built environment so as to pose little risk to residential and commercial properties. The remainder of the ward discharges surface water into a number of ponds some within the ward boundary on moorland to the north and west of the Bryn Farm Estate and also to the pond immediately south of Warwick Road and to the Machine Pond both of which are situated within the neighbouring Community Area of Nantyglo.

There are known to be 13 significant intakes in the area which are listed below, 5 of which are critical.

Table 41: Brynmawr – Significant Intakes

Grid Ref	Address
0807211928	King Street near Bryn Farm (C)
1902412350	Near garages Aneurin Place
1922012529	Aneurin Place open land (North)
1921312551	Aneurin Place open land (North)
1921912553	Aneurin Place open land (North)
2089112622	Pontgam Black Rock
1959111225	Opposite "Varichem" Blaenant Ind Est
1942911393	Adj. access road Bleanant/ Cwmcracken Site
1639611468	Adj Brynmawr bypass by roundabout to Bleanavon (C)
1902411322	Adj to Petrol Station, Blaina Rd (C)
1814111503	Rear Garages opp 69 Warwick Rd
1834912080	East of 40 Heol Drew above car park (C)
1836912110	North East Of 40 Hoel Drew in open land above car park (C)

Figure 19: Brynmawr – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Brynmawr indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 42: Brynmawr – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Brynmawr				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	6,418	987	338	146
Residential Properties (n)	3,037	420	144	62
Services (n)	10	6	0	0
Risk to Economic Activity				
Non-Residential Properties (n)	417	14	3	10
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	3.9	0	0	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	1	0	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0.63	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (n)	2	0	0	0
Listed Buildings (n)	3	0	0	2
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	32.55	7.8	4.6	2.8

Table 43: Brynmawr – Measures to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Clydach Street and land below	Low to Med	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
King Street below Heol Helig	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Land between Greenland Road and Alma Street	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Shoemaker Close Area	Low to Med	Non-Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



8.4 Cwm Community Area

Overview

Cwm Community Area is in the centre of the Borough in the central Ebbw Fawr Valley, south of Ebbw Vale. It covers an area of 978 hectares which stretches from the Sirhowy Ridge to the west down to the River Ebbw Fawr in the valley floor and back up to the ridge between the Ebbw Fawr and Fach. It covers the southern half of the River Ebbw Fawr before it joins the River Ebbw Fach at Aberbeeg to form the River Ebbw. The valley is steeply sided with the settlement of Cwm in the centre and residential areas of Waun Llwyd and Garden Festival to the north. It also contains the Garden Festival Retail Outlet.

To the north of the ward there are several unnamed watercourses on the western and eastern slopes of the valley in the Victoria, Garden Festival and Waunlwyd areas which discharge a combined catchment area of around 110 hectares via a number of culverts into the River Ebbw Fawr which is itself culverted for the most part beneath the Garden Festival residential development.

In the north-east of the ward lies Silent Valley, a catchment area of 73 hectares where several unnamed watercourses from both sides of the valley form Nant Merddog which flows down through Cwm Merddog Nature Reserve into the main valley where it is culverted beneath the built-up area before discharging into the River Ebbw Fawr.

Further south as the valley narrows there are two main land drains on the western side of the valley discharging a combined catchment area of 24 hectares into the River Ebbw Fawr at Duffryn Road and Rhiw Road, and on the eastern side of the valley at Waterloo Terrace are several unnamed watercourses discharging a catchment area of 4 hectares that are culverted beneath the A4046 into the River Ebbw Fawr.

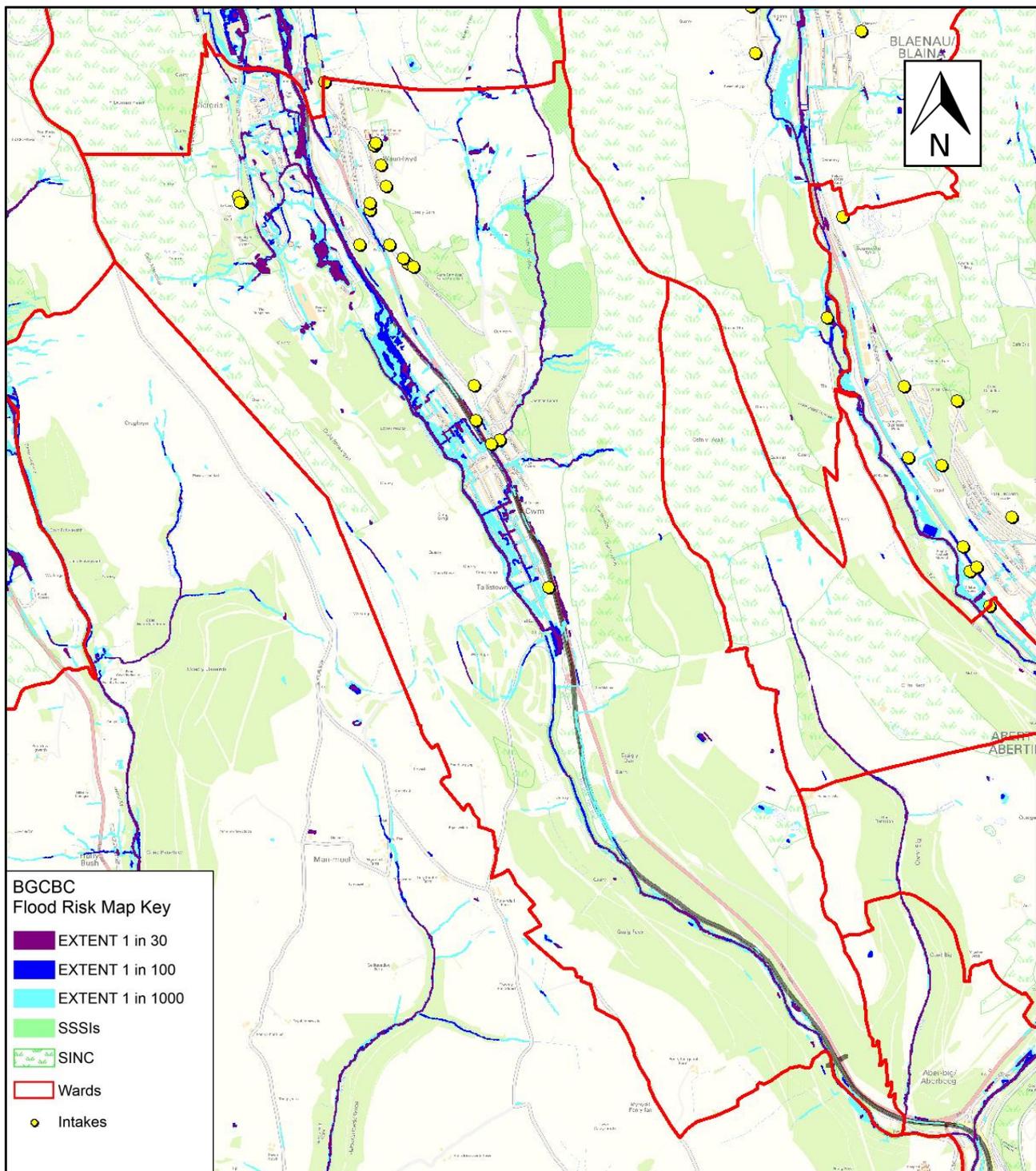
There are known to be 15 significant intakes in the area which are listed below, 5 of which are critical.

Table 44: Cwm – Significant Intakes

Grid Ref:	Address
1877804721	Opp. 3 King St, Cwm (by garages)
1852705481	Brighton Tce. (C)
1839005605	Side of Railway Lane north of Cwm Rhydderch (C)
1838705758	Side of Saint Pauls Church, Cwm Road (C)
1793106513	Bottom Cemetery Road, Waunlwyd, (Refuse Tip Road) (C)
1802506414	West of pylon, Refuse Tip Road Waunlwyd
1781106490	Rear of 20 Coed-Y-Garn, Waunlwyd
1885606681	Rear of 1 Cwm Road Waunlwyd
1885006700	Rear of 75 Excelsior Street, Waunlwyd (C)

1794906792	Rear of 40 Hillside Tce Waunlwyd
1791906898	Rear of 20, Hillside Tce, Waunlwyd
1788707001	Rear of 1, Hillside Tce, Waunlwyd
1789307010	Rear of Waunlywd School
1719406727	South of Meas-y-Parc, Victoria A
1720806711	South of Meas-y-Parc, Victoria B

Figure 20: Cwm – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Cwm indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 45: Cwm – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Cwm				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35)	4,651	1161	303	150
Residential Properties (n)	2,365	494	129	64
Services (n)	5	1	0	0
Risk to Economic Activity				
Non-Residential Properties (n)	376	29	5	10
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	6	0	0	0
Main Line Railways (km)	6.4	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	0	0	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	23.39			0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	2	0	0	0
Listed Buildings (n)	1	0	0	0
Licensed Abstractions (LA) (n)	1	1	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	203.04	6.5	4.5	2.6

Table 46: Cwm – Measures to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Beech Grove to Victoria Avenue	Low to High	Residential properties Non-Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



8.5 Cwmtillery Community Area

Overview

Cwmtillery Community Area is in the eastern Ebbw Fach valley north of Abertillery. It covers an area of 988 hectares and consists of the valley side to the east of the Ebbw Fach River. This area consists of a tributary valley rising in the east to the Coity Mountain ridge and to the west to Mynydd James. The residential community of Cwmtillery and the Cwmtillery Industrial Estate are nestled along the valley floor. Further west adjacent to the River Ebbw Fach is the Roseheyworth residential area and Business Park.

To the north of the ward several unnamed watercourses predominantly on the eastern side of the valley on Coity Mountain discharge a catchment area of some 111 hectares into the Tillery River which rises at the northernmost boundary of the community area flowing down into Cwmtillery Reservoir.

South of the reservoir numerous unnamed watercourses predominantly on the western side of the valley on Mynydd James discharge a catchment area of 94 hectares into the Tillery River and Cwmtillery Lakes.

In the western part of the ward there are numerous drains, issues and unnamed watercourses on the western slopes of Coedcae Tyle to the east of Bournville and north of Roseheyworth discharging a combined catchment area of some 39 hectares via a number of culverts into the River Ebbw Fach.

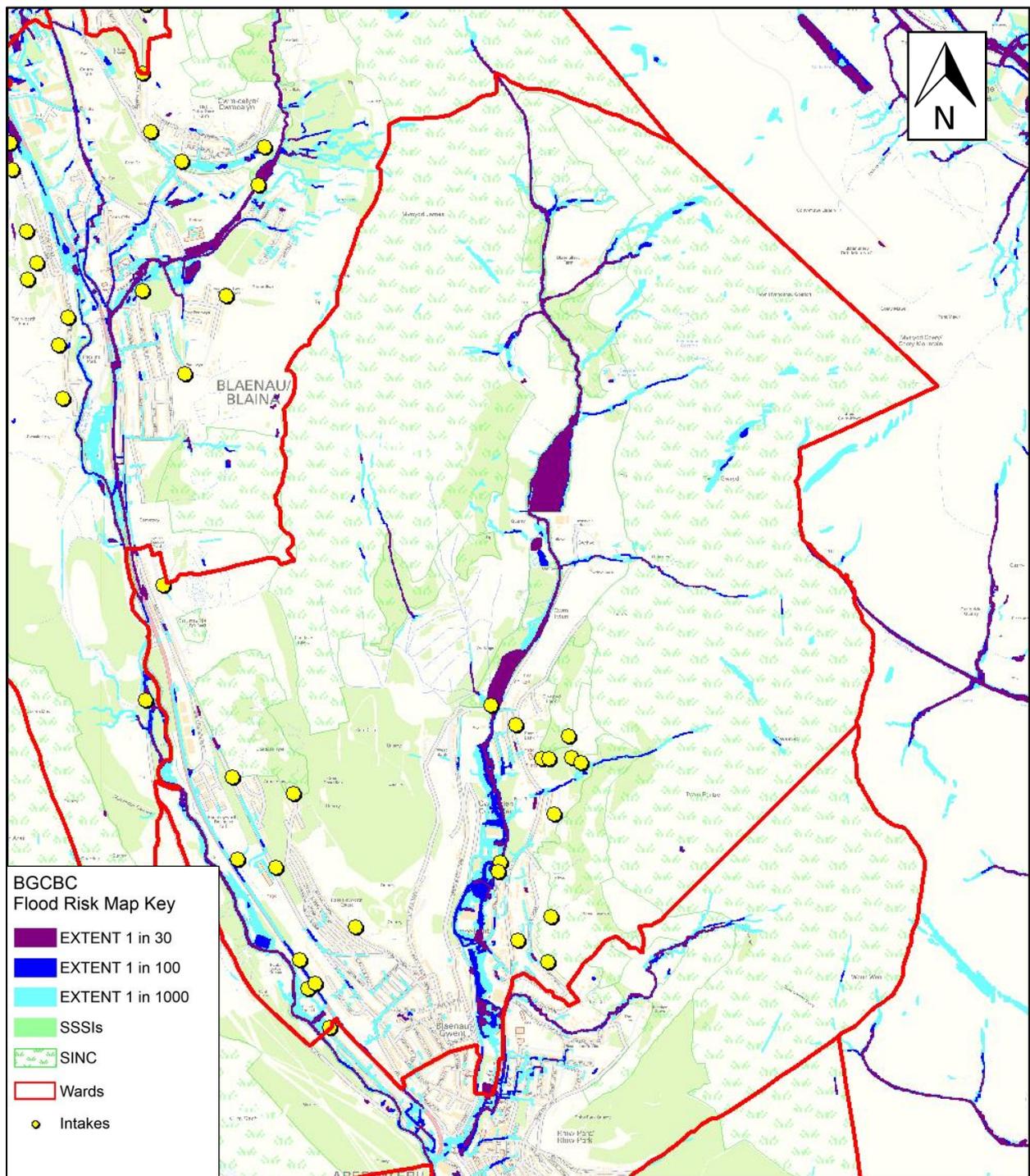
There are known to be 21 significant intakes in the area which are listed below, 7 of which are critical.

Table 47: Cwmtillery – Significant Intakes

Grid Ref:	Address
2059605757	S/O 35 Arael View/Roseheyworth Rd (C)
2078905351	Roseheyworth Rd Nr top entry gates to Rugby Ground
2187305997	S/O Bryn Tce Cwmtillery
2198105852	Rear of Blaentillery Infants School
2208505937	R/O Blaentillery School - on mountain Upper Culvert
2202505834	R/O Blaentillery School on mountain (C)
2204405602	R/O 29 Upper Gwastod Terrace
2023606772	R/O Civic Amenities Site, Bournville (C)
2093614810	R/O Bowls Pavilion, Abertillery Park
2061805390	South end of Roseheyworth Ind Est
2090004932	Adj. to A467 opp. Grandstand Abertillery Park
2212805824	R/O Blaentillery School - mountain lower culvert 1 (C)
2216705818	R/O Blaentillery School - mountain lower culvert 2 (C)
2179905376	Opp. Unit 9 Cwmtillery Ind Est.
2178705340	Opp. Unit 6 Cwmtillery Ind Est
2089905705	R/O 79 Areal View

2114705085	R/O 24 Attlee Avenue Roseheyworth (C)
2202505130	R/O 42 Hillcrest View
2201104925	R/O 37 Valley View
2176006055	Cwmtillery Lakes (C)
2188205024	R/O 83 Tillery Road

Figure 21: Cwmtillery – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Cwmtillery indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 48: Cwmtillery – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Cwmtillery				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	5,107	376	45	33
Residential Properties (n)	2,430	160	19	14
Services (n)	3	1	1	1
Risk to Economic Activity				
Non-Residential Properties (n)	292	9	5	12
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	2.3	0	1	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	0	0	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	0	0	0	0
Listed Buildings (n)	0	0	0	0
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	616.08	15.9	5.6	4.2

Table 49: Cwmtillery – Measures to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Valley floor from south end of the lower lake to the southern edge of the ward boundary	Low to High	Residential properties Services Non-Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Mountainside above Lower Gwastad	Med	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Ty Dan y Wal to Abertillery Comp. School	Med to High	Residential properties Services Non-Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



8.6 Llanhilleth Community Area

Overview

Llanhilleth Community Area is in the most southerly part of the Borough south of Abertillery and north of Crumlin. It covers an area of 741 hectares broadly to the east of the River Ebbw. The land rises from the valley floor steeply to Mynydd Llanhilleth and St Illtyd. The residential areas of Aberbeeg, Brynithel, Llanhilleth and Swffryd cling to the steeply sloping mountainside. There are also two Industrial Estates one at Llanhilleth and one at Glyndwr which run along the valley floor.

In the far north-west of the ward Nant Big flows down through the Cwm Big valley which has a catchment area within the community area boundary of 23 hectares, although there would appear to be no tributaries. Nant Big is culverted beneath the A4046 just west of the Aberbeeg roundabout and discharges into the Ebbw Fawr river.

Also in the north-west of the ward the rivers Ebbw Fawr and Ebbw Fach combine to form the River Ebbw which flows south along the wards western boundary.

In the north of the ward several unnamed watercourses discharge a catchment area of 33 hectares east of Brynithel into Nant Cyffin at the horseshoe bend junction of Blaencyffin Road and Troy Road which is then culverted beneath the built-up area of Llanhilleth before discharging into the River Ebbw some 800 metres to the south-west.

In the eastern part of the ward on Mynydd Llanhilleth are several unnamed watercourses discharging a catchment area of some 29 hectares into Nant y Cnyw, which is then culverted beneath the built-up area at the horseshoe bend on Regent Street to presumably discharge into the River Ebbw some 800 metres to the south-west.

In the south-west of the ward are several issues and drains which discharge a catchment area of around 13 hectares into an unnamed watercourse which flows steeply downhill before being culverted beneath the B4471 between the former pithead baths and Andrews Terrace before discharging into the River Ebbw.

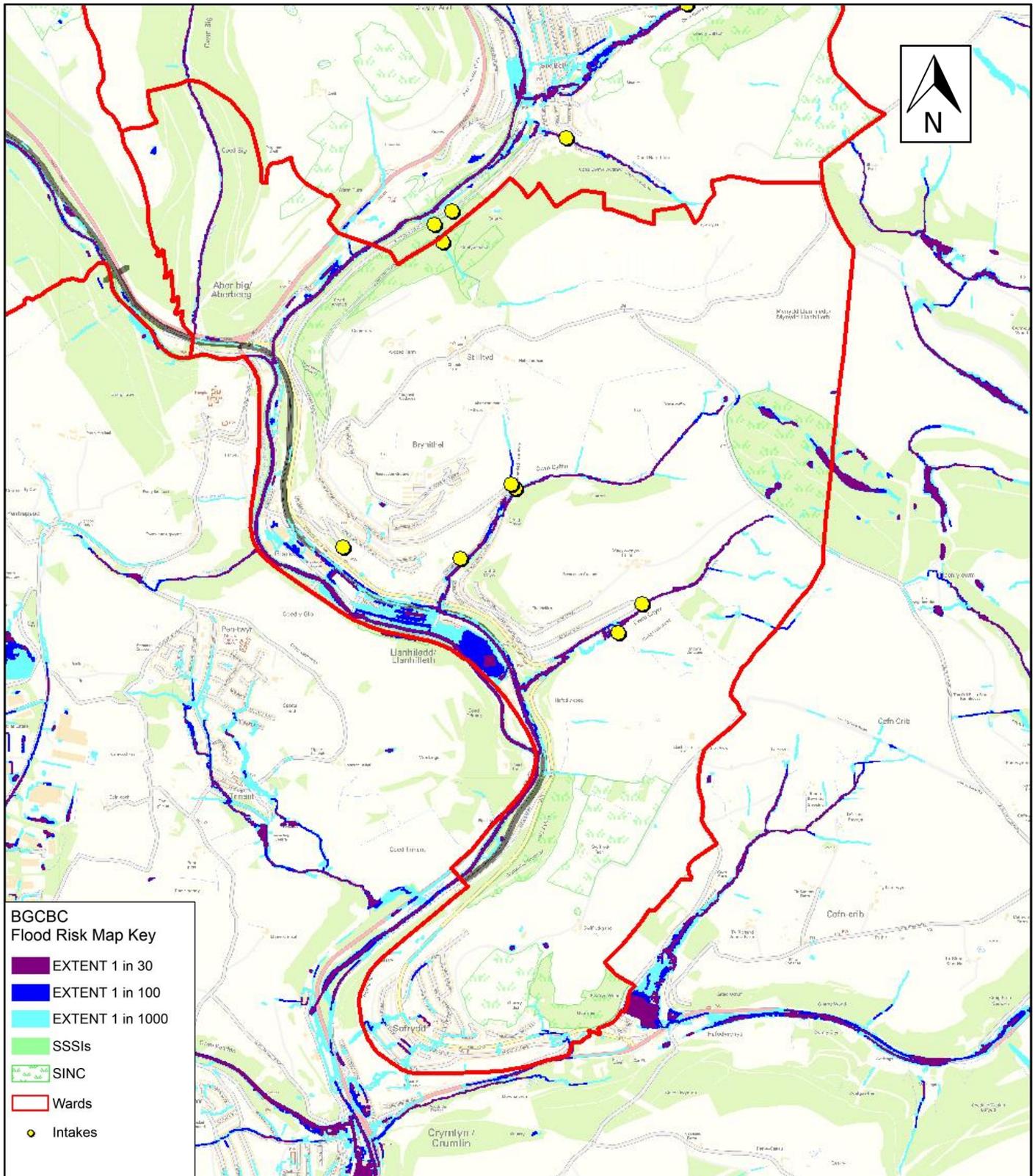
There are known to be 6 significant intakes in the area which are listed below, 4 of which are critical.

Table 50: Llanhilleth – Significant Intakes

Grid Ref:	Address
2171792423	Cemetery Road Brynithel (C)
2126901041	S/O 1 Graig View, Brynithel (C)
2204501305	Top culvert Blaencuffin Rd, Llanhilleth (C)
2204501305	Bottom culvert Blaecuffin Rd, Llanhilleth (C)

2179600987	Open land near 1 Victoria Tce, Llanhilleth
2260800783	Oxford Place, Llanhilleth

Figure 22: Llanhilleth – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Llanhilleth indicates that indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 51: Llanhilleth – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Llanhilleth				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	4,771	529	475	317
Residential Properties (n)	2,617	225	202	135
Services (n)	4	2	0	2
Risk to Economic Activity				
Non-Residential Properties (n)	317	11	1	17
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	4	1	0	0
Main Line Railways (km)	3.5	0	0	1
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	1	1	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (n)	1	1	0	0
Listed Buildings (n)	7	2	0	0
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	43.56	7.5	4.6	3.7

Table 52: Llanhilleth – Measures to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Swffryd	Low to Med	Residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



8.7 Nantyglo Community Area

Overview

Nantyglo Community Area is in the north eastern part of the Borough south of Brynmawr near the top of the Ebbw Fach valley. It covers an area of 735 hectares and stretches across the whole of the valley from the mountain top of Mynydd Carn-y-cefn down to the Ebbw Fach River and up to Twyn Carncanddo. The settlements of Nantyglo, Winchestown and Coedcae run in a south eastwards direction along the valley floor. The area also contains a number of Industrial Estates (Pond Road, Blaenant, Barleyfields, Cwmcrachen) and a retail park.

In the north-west of the ward are a number of ponds including the large Machine Pond into which run a number of unnamed watercourses from within and outside the community area boundary. The watercourses within the Nantyglo Community Area discharge a catchment area of around 25 hectares into these ponds.

In the west of the ward on the eastern slopes of Bwlch y Garn and Mynydd Carn-y-Cefn are numerous unnamed watercourses and drainage channels discharging a significant catchment area of some 145 hectares via several culverts into the River Ebbw Fach which is itself culverted beneath much of the community area.

In the centre of the community area on the western slopes of Twyn Carncanddo from the northern ward boundary to the southern ward boundary are numerous unnamed watercourses discharging another significant catchment area of some 125 hectares via several culverts into the River Ebbw Fach.

In the north-east of the ward are a number of unnamed watercourses and springs on the north-eastern slopes of Twyn Carncanddo discharging a catchment area of 62 hectares into a number of ponds both within and outside the ward boundary.

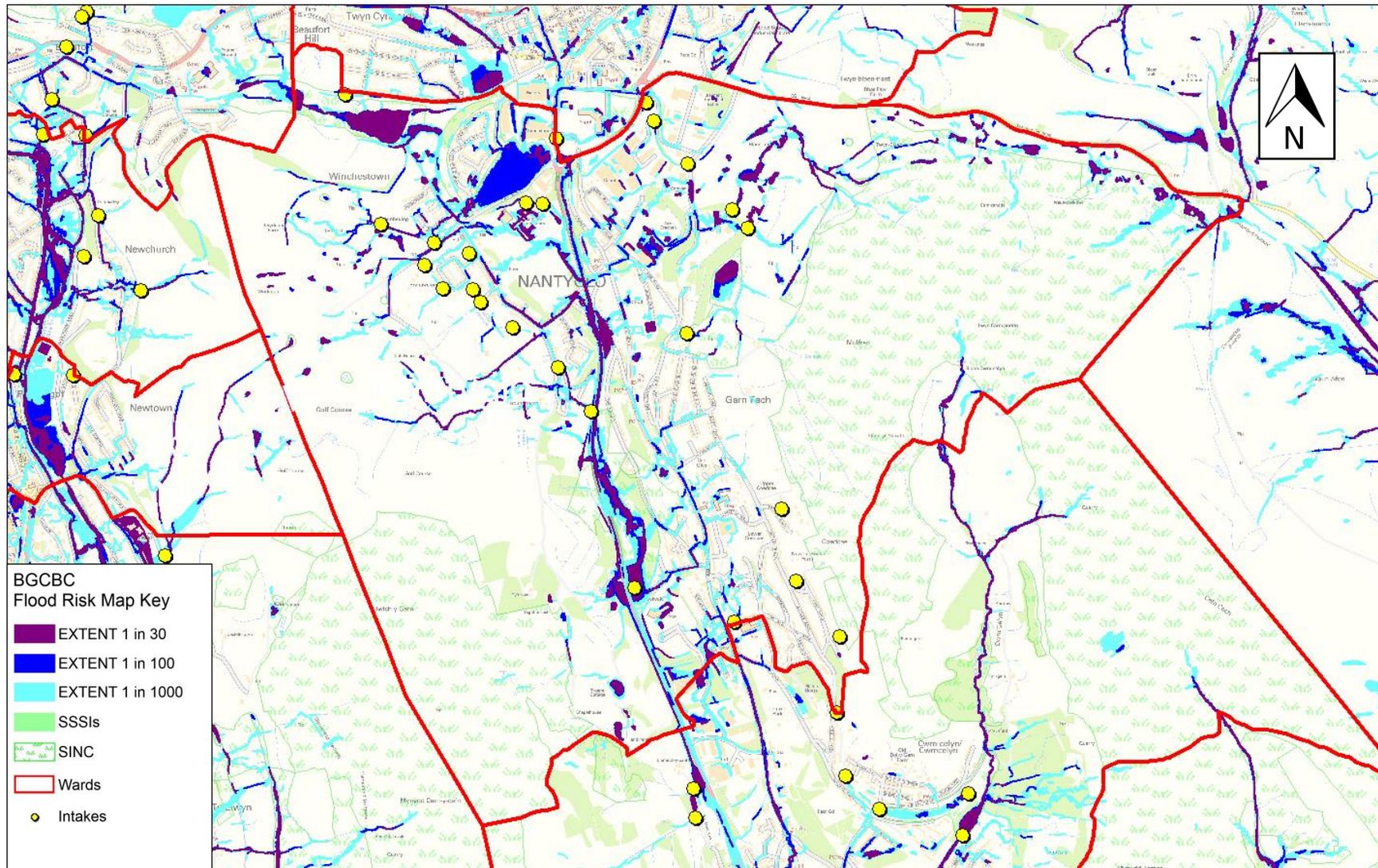
There are known to be 17 significant intakes in the area which are listed below, 3 of which are critical.

Table 53: Nantyglo – Significant Intakes

Grid Ref	Address
1851710888	Golf Club Road Nantyglo
1868210694	R/O 7 Waun Fawr (OAP Bungalows)
1871110646	Near 13 Waun Fawr (OAP Bungalows)
1902510383	O/S 4 Waun Fawr Rd Nantyglo
1917310192	Woodland Tce (Adj. To A467)
1934809464	Coalbrookvale (C)
1976409324	Parrot Row (C)
1982010955	Rear of concrete product factory Cwmcracken Ind Est
1975511024	Open land, Cwmcracken Ind Est
1848410784	R/O 36 Brynawelon, Nantyglo
1956510516	R/O 5 Twyn Derwyn Nantyglo

1996109793	R/O Verwy Road Coedcae
2002309490	R/O 1 Pant View Coedcae
1855910690	R/O 20 Brynawelon, Nantyglo
1890011053	Nantyglo Comp School R/O Bungalow
1896711049	R/O Unit 29 Pond Road Workshops (C)
2020409259	R/O 87 Pant View Coedcae

Figure 23: Nantyglo – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Nantyglo indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 54: Nantyglo – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Nantyglo				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	5,168	656	141	165
Residential Properties (n)	2,395	279	60	70
Services (n)	1	1	0	0
Risk to Economic Activity				
Non-Residential Properties (n)	447	7	2	11
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	3	0	1	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	2	0	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	0	0	0	0
Listed Buildings (n)	6	0	0	0
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	278.46	14.8	12.0	4.8

Table 55: Nantyglo – Measures to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Waenheulog	Low to High	Residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Brynawelon	Low to Med	Residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Waun Ebbw Road	Low to Med	Residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Blaenant Ind. Est. to Wesley Buildings	Low to High	Residential properties Non-Residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Milfern Avenue to Garn Cross	Low to Med	Residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Open land to the west of Colebrook Vale	Low to High	Residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed

			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015- 2021	Not started proposed
Ysgol Gymraeg Brohelyg	Low to High	Service	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015- 2021	Not started proposed
Gwaun Delyn Close to The Crescent	Low to Med	Residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015- 2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



8.7 Six Bells Community Area

Overview

The Six Bells Community Area is in the south of the Borough in the Ebbw Fach Valley south of Abertillery. It covers an area of 426 hectares and stretches across the Ebbw Fach valley. It includes the mountain top at Cefn Bach and the tributary valley of Cwm Big to the west and the tributary valley of Cwm Nant-y-groes to the east. The mountain slopes rise steeply from the valley floor. The settlement of Six Bells nestles in the valley floor and clings to the valley sides as it rises steeply.

In the east of the ward the watercourse known as Nant-y-Groes flows down the tributary valley of Cwm Nant-y-Groes discharging a catchment area of 12 hectares before being culverted beneath the built-up area into the River Ebbw Fach approximately 800 metres to the west. On the hillside east of Cwm Farm Road a series of issues discharge a small catchment area of 1 hectare presumably into the storm water system and then to the River Ebbw Fach.

In the south-east of the ward is another tributary valley, Cwm Llwydrew down through which flows the watercourse known as Nant Cwmlwydrew discharging a catchment area of 7 hectares via a culvert on Graig Road into the River Ebbw Fach some 250 metres to the west, the river itself being culverted beneath the built-up area in this vicinity for a length of approximately 200 metres. At the southern ward boundary are three culverts discharging water from a catchment area within the Llanhilleth Community Area beneath Cemetery Road and Victoria Road into the River Ebbw Fach. Also on the southern community boundary a land drain discharges water from the area to the east of Squire Cars into a trapezoidal drainage channel which flows steeply downhill to discharge into the River Ebbw Fach, again within the Llanhilleth Community Area to the south.

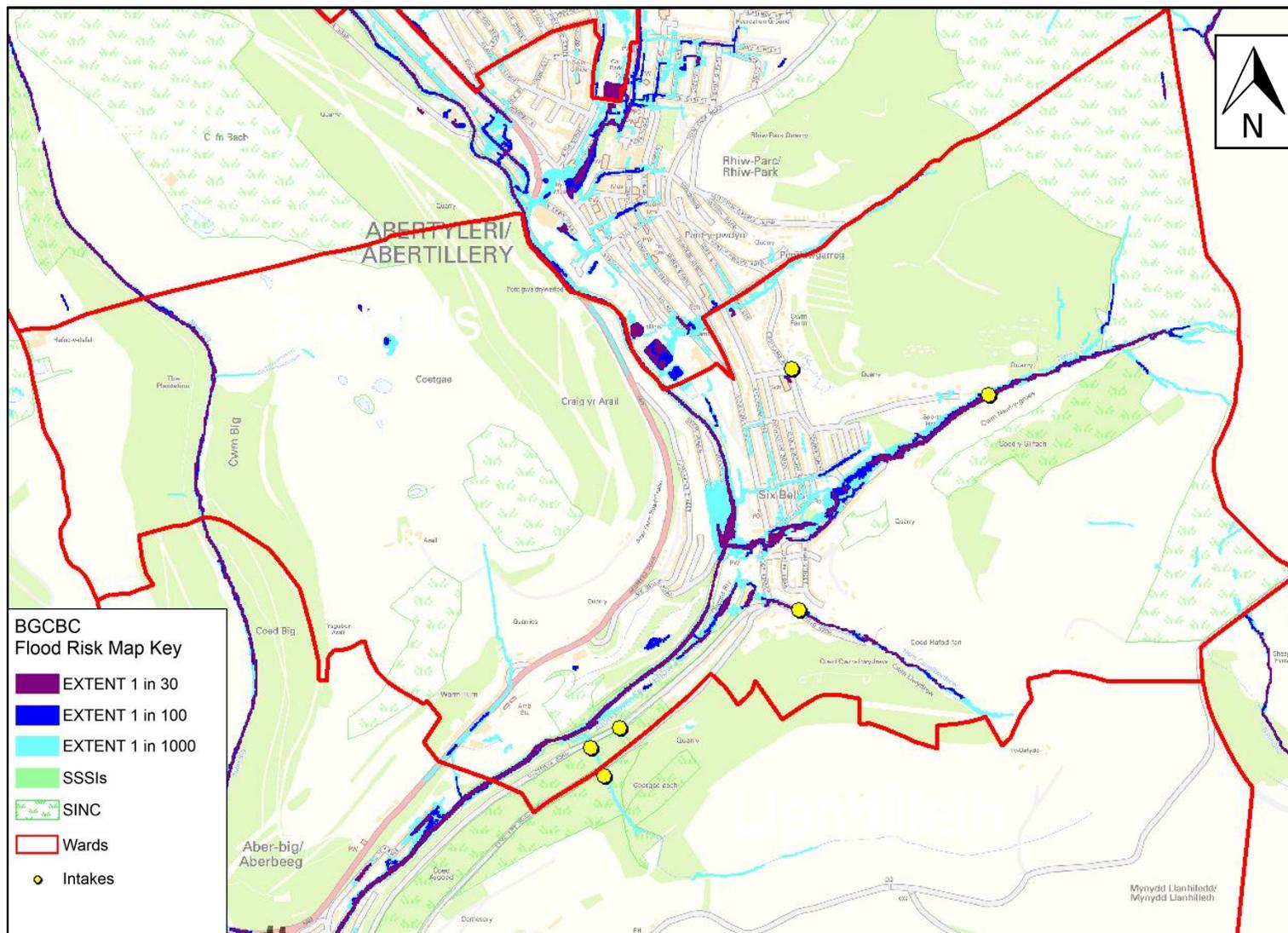
In the west of the community area is another tributary valley, Cwm Big through which flows Nant Big, discharging a catchment area of some 22 hectares within the ward boundary before entering the River Ebbw Fach further south in the Llanhilleth community area.

There are known to be 4 significant intakes in the area which are listed below, 2 of which are critical.

Table 56: Six Bells – Significant Intakes

Grid Ref:	Address
2281003493	Opp. allotments Cwmnantygroes
2260902886	Graig Road, Six Bells
2167202514	Victoria Rd/cemetery - watercourse (C)
2176102556	Victoria Rd - masonry wall (C)

Figure 24: Six Bells – Flood Risk Map



Conclusions from the Flood Risk Maps

The Flood Risk Map for Six Bells indicates that the main cause of flood risk for the area relates to ordinary watercourses and the intakes to existing surface water culverts. Generally this correlated with local knowledge although it is believed that the flood risk is overstated as the full capacity of the existing culverts was not included in the modelling process when the maps were prepared.

Table 57: Six Bells – Counts for Various Risks

COUNTS FOR FLOOD RISK AREA				
Six Bells				
	Total in defined area	Risk Counts		
		LOW	MED	HIGH
Risk to People and Property				
People (n) (multiplier 2.35 average household size)	2,855	275	12	110
Residential Properties (n)	1,342	117	5	51
Services (n)	2	0	0	0
Risk to Economic Activity				
Non-Residential Properties (n)	174	2	2	3
Airports (n)	0	0	0	0
Primary/Trunk Roads (km)	1.6	1	0	0
Main Line Railways (km)	0	0	0	0
Agricultural Land – Grades 1, 2 and 3 (ha)	0	0	0	0
Risk to Natural and Historic Environment				
Bathing Waters (n)	0	0	0	0
Environmental Permitting Regulations (EPR) Installations (n)	0	0	0	0
Special Areas of Conservation (SAC) (ha)	0	0	0	0
Special Protection Areas (SPA) (ha)	0	0	0	0
Ramsar Sites (ha)	0	0	0	0
World Heritage Sites (ha)	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	0	0	0	0
Parks and Gardens (ha)	0	0	0	0
Scheduled Ancient Monuments (ha)	0	0	0	0
Listed Buildings (n)	0	0	0	0
Licensed Abstractions (LA) (n)	0	0	0	0
Sites of Interest for Nature Conservation (SINC) (ha)	36.88	2.1	0.9	0.4

Table 58: Six Bells – Measures and Objectives to Mitigate Flood Risk

Location	Risk Level	Risk to:	Measure	Measure Type	Link to FRMP Obj.	Timing	Measure Status
Windsor Road	Low to High	Playing fields and playgrounds	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Bottom of Windsor Road to Alexandra Road	Low to High	Residential properties Highways	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed
Arial Street and Upper Gridding Street to Chapel Road	Low to High	Residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
Bottom of Graig Road to Llys Cwm Llwydrhew	Low to High	Residential properties	BG03.4: Carry out a risk assessment and prepare an action plan	Prevention M24	Ec2	2015-2021	Not started proposed
			BG09.2: Ensure wider awareness to individual risk to increase level of preparedness	Preparedness M43	S1, S3, Ec1	2015-2021	Not started proposed

See also measures for whole of the Borough as detailed in Table 10 in section 6.

Number of Measures in each category:



9. IMPLEMENTATION MONITORING AND REVIEW

9.1 Funding

For the FRMP to be implemented fully it is essential that funding continues to be made available from Welsh Government as existing revenue funding is not sufficient.

In order to fund work identified as a result of the proposed investigations Blaenau Gwent will seek funding from the Welsh Government Capital Grant programme and the following sources:

Funding through European Union

The new Structural Fund Programme in Wales 2014-2020 for West Wales and the Valleys identifies funding for prioritised local infrastructure under ERDF Priority 4: Connectivity. Information from investigations identified in this report will be used to inform future funding bids.

Private Funding

Section 106 of the Town and Country Planning Act 1990 allows a local planning authority to enter into an agreement with a landowner or developer in association with the granting of planning permission. This funding would only be available if the required works were directly related to the proposed scheme.

Water Company Funding

Water companies invest money in flood alleviation schemes as part of their duties to remove properties from the sewer flooding (DG5) register. Sometimes the most cost effective way to do this is to work in partnership with risk management authorities on flood alleviation schemes in other areas which can help reduce surface water pressure downstream.

Local Fundraising

It may be possible that some funding will be made available from the local communities and businesses that stand to benefit from the proposed flood scheme.

9.2 Monitoring

This Plan sets out on-going, agreed and proposed measures to manage flood risk within Blaenau Gwent. Implementing the measures set out will take place over the 2015-2021 planning cycle.

Blaenau Gwent will report on progress as these measures are implemented and completed.

Following publication of the final Plan in December 2015 we will monitor progress annually and every 6 years review the Plan, as required by the Flood Risk Regulations.

10. PUBLIC CONSULTATION

Consultation is an important step in shaping the management of flood risk and gives organisations and communities the chance to influence the approach and contribute ideas.

Public consultation was undertaken for a six week period from the 11th of June to 23rd July 2015. The Council prepared a press release which was sent to local newspapers. The Plan was placed on the Council's consultation portal along with a survey to prompt and assist involvement (see below). This was advertised by way of facebook and twitter.

1.	Do you understand the purpose of this Flood Risk Management Plan? (See section 1.1).
2.	Do you understand that this plan only addresses local (surface water) flooding? (See section 1.2)
3.	Do you agree with the types of flooding identified? (See section 2.2)
4.	<p>What do you consider to be the greatest cause of local flooding in Blaenau Gwent?</p> <ul style="list-style-type: none"> • Ordinary watercourse flooding (not rivers) • Surface water runoff • Groundwater flooding • Drainage channels • Combined sewers • Other (please state)
5.	<p>What do you consider to be the highest priorities for managing flood risk in Blaenau Gwent?</p> <ul style="list-style-type: none"> • Avoiding inappropriate development in flood risk areas • Incorporating greater resilience in new developments • Maintenance regimes for culverts and drains • Improving monitoring and data of flooding • Greater use of the natural environment in flood prevention • Utilisation of the natural environment for reducing runoff • Using sustainable drainage systems for new and existing developments • Identifying areas suitable for inundation and storage of water to prevent flooding elsewhere • Enabling those at risk of flooding to play a proactive role • Improving the response to flooding incidents by the emergency response organisations • Ensuring effective recovery arrangements are in place • Develop better flood forecasting and warning systems • Improve communication and support to residents and businesses <p>Identify your top 3</p>
6.	Do you agree with the proposed Borough measures? If not why? (See section 6, Table 10)
7	Do you agree with the proposed local measures identified for the 'Community Areas'? If not why? (See Sections 7 and 8)

8.	Do you have any other comments to make?
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The Council also sent letters and emails to its Risk Partners making them aware of the consultation process and their opportunity to comment. In all over 70 letters and emails were distributed.

Seven organisations / individuals responded to the consultation and a total of 53 comments were received. Four of the respondents completed the questionnaire.

In terms of question 1 and 2, all 4 understood the purpose of the Flood Risk Management Plan and what was meant by local flooding. All 4 also agreed with the types of flooding identified in the report (question 3). When asked what was considered to be the greatest cause of flooding, ordinary watercourses received two votes and drainage channels and surface water runoff one each. Groundwater and combined sewers were not identified. There was a varied response to question 5 and what were considered to be the highest priorities for managing flood risk in Blaenau Gwent. The only two areas which received more than one vote were avoiding inappropriate development in flood risk areas and maintenance regimes for culverts and drains. Most other areas received one vote. When asked if they agreed with the proposed measures one had some suggestions for improvements, two agreed and one neither agreed nor disagreed. When asked if they agreed with the proposed local measures identified for the 'Community Areas' no one disagreed. The final question gave the opportunity for further comment.

All other comments received have been considered and response provided. A small number of changes were made to the Plan as a result of the comments received, these changes have added clarity. No significant changes were required.

A report of the consultation, including the Council's feedback to the responses is available on the Blaenau Gwent website <http://www.blaenau-gwent.gov.uk/environment/22421.asp>

The plan has also been subject to scrutiny by the Council before it was formally approved.

11. STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

To meet strategic environmental assessment (SEA) requirements we are relying on the SEA work undertaken on the Flood Risk Management Strategy. We do not believe there are any significant changes that require us to update the [SEA](#). This Plan does not identify any new measures it simply identifies the areas where existing measures will be applied.

In all cases the exact works required is still unknown and therefore the Council will in line with the current SEA ensure that the following mitigation actions will be taken into account in order to reduce the potential for projects to have significant effect on site features, namely:

- Ensure that an EIA/HRA is undertaken at the project level;
- Time works to minimise disturbance to features of the sites e.g. hibernating bats;
- Access to/from roost entrances should be unobstructed and large enough for bats to fly through unimpeded;
- No artificial lights shining on access or associated flight paths;
- Appropriate levels of vegetation should be maintained close to entrance (s) but not obstructing it (them);
- Any works should ensure there is no net loss of suitable woodland, scrub and hedgerows in the areas used by bats and any vegetation clearance should not create any major gaps in the continuity of these habitats;
- Use of materials that are appropriate for use in/near water, taking account of relevant advice from NRW in relation to these matters;
- Seek opportunities to improve the condition of the natural environment, where practical;
- Standard Operating Procedures and Emergency Procedures should be reviewed to ensure bio-security issues are included and addressed and clearance of areas with invasive species should be carried out in accordance with best practice and advice from NRW. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG;
- Changes to SPG or other guidance should take account of potential impacts to protected habitats and aim to contribute to maintaining and expanding protected habitats in line with HAPs and EU protected site management plans.

12. REFERENCES

National strategy for flood and coastal erosion risk management:

<http://wales.gov.uk/topics/environmentcountryside/epq/flooding/nationalstrategy/strategy/?lang=en>

Blaenau Gwent Preliminary Flood Risk Assessment (PRFA):

http://www.blaenau-gwent.gov.uk/documents/Documents_Environment/PFRA_June_2011.pdf

National Strategy for Flood and Coastal Erosion Risk Management in Wales

<http://wales.gov.uk/docs/desh/publications/111114floodingstrategyen.pdf>

Local strategy for flood risk management:

<http://www.blaenau-gwent.gov.uk/environment/21512.asp>

Local biodiversity action plan:

<http://www.blaenau-gwent.gov.uk/7682.asp>

EU Floods Directive:

http://ec.europa.eu/environment/water/flood_risk/

Severn River Basin Management Plan:

<https://www.gov.uk/government/publications/river-basin-management-plan-severn-river-basin-district>

Flood Risk Regulations 2009:

<http://webarchive.nationalarchives.gov.uk/20140328084622/http://www.legislation.gov.uk/uksi/2009/3042/contents/made>

Flood and Water management Act 2010:

<http://www.legislation.gov.uk/ukpga/2010/29/contents>

Water Framework Directive:

http://ec.europa.eu/environment/water/water-framework/index_en.html

13. LINKS TO OTHER PLANS

The Blaenau Gwent Flood Risk Management Plan has been written in conjunction with the Severn River Basin District Flood Risk Management Plan and the Severn River Basin Management Plan. This plan also builds upon existing plans which can be a useful source of information.

Below is a list of other relevant plans and who to contact for further information:

Plan or Strategy	Purpose and scope of plan or strategy	Drivers	Lead authority
River Basin Flood Risk Management Plans	To manage flooding from the sea, rivers and reservoirs.	Statutory Requirement under the European Floods Directive; implemented by the Flood Risk Regulations 2009	Environment Agency and Natural Resources Wales
River Basin Management Plans (RBMPs)	Establish a framework to deliver an integrated approach for the protection and sustainable use of the water environment.	Statutory Requirement under the Water Framework Directive.	Environment Agency and Natural Resources Wales
Catchment Flood Management Plans (CFMPs)	Current and future inland flood risk management across all catchments. These plans set out preferred policies for river flooding in Wales.	Voluntary plans.	Natural Resources Wales.
Local Flood Risk Management Strategy	Sets out responsibilities for managing flooding in each Lead Local Flood Authority, objectives and measures for the management of local flood risk (i.e. from surface water, groundwater and ordinary watercourses).	Statutory requirement under the Flood and Water Management Act 2010.	All Lead Local Flood Authorities must prepare a Local Flood Risk Management Strategy.
Reservoir Flood Plans in Wales	These include on-site and off-site flood plans that set out procedures for the management of flood risk in the event of an emergency. On-site plans deal with the management of the on-site risk and off-site plans deal with the risk in areas adjacent to the	Voluntary plans.	On-site Flood Plans are developed by the owners of the reservoir. Off-site Flood Plans are developed by the Local Resilience Forums.

	reservoir.		
System Management Plans	Asset Plans that set out the maintenance regime for the asset systems.	Voluntary plans.	Owners and operators of assets.

Appendices

Appendix 1: Components of the FRMP as detailed in the Flood Risk Regulations 2009 – Part 4

1. Each Lead Local Flood Authority (LLFA) has a duty to prepare a Flood Risk Management Plan (FRMP) in relation to each relevant Flood Risk Area (FRA).
 2. Natural Resources Wales must review the FRMP and may recommend modifications.
 3. Each FRMP must include the following:
 - a. Objectives for the purpose of managing flood risk.
 - b. Measures for achieving the objectives.
 - c. Objectives must be set to reduce the adverse consequences of flooding for
 - i) human health,
 - ii) economic activity or
 - iii) the environment (including cultural heritage) and reducing the likelihood of flooding, whether by exercising powers to carry out structural work or otherwise.
 - d. Measures must include measures for
 - i) prevention of flooding,
 - ii) protection of individuals, communities and the environment against the consequences of flooding and
 - iii) arrangements for forecasting and warning.
 - e. Measures
 - i) the cost and benefits of different methods of managing flood risk
 - ii) the information included in the flood hazard maps and the flood risk maps
 - iii) the river basin management plan for the area
 - iv) the effect of floodplains that retain flood water
 - v) the environmental objectives
 - vi) the likely effect of a flood, and of different methods of managing a flood, on the local area and the environment.
 - f. The FRMP must include
 - i) a map showing the boundaries of the flood risk area
 - ii) a summary of the conclusions drawn from the flood hazard maps and flood risk maps
 - iii) a description of the proposed timing and manner of implementing the measures, including details of the bodies responsible for implementation
 - iv) a description of the way in which implementation of the measures will be monitored
 - v) a report of the consultation; and
 - vi) details of the co-ordination between the measures in the FRMP and the
 4. Blaenau Gwent must consult with the following about the proposed content of the FRMP:-
 - a. The following authorities
 - i) other LLFAs
 - ii) the highways authorities,
-

- ii) Dwr Cymru / Welsh Water
 - iii) the reservoir undertaker
 - iv) CADW
 - v) NRW
 - vi) The Welsh Ministers
 - b. The public
5. LLFAs must have regard to any guidance issued by NRW about the form of the FRMP.
6. LLFAs must complete a review of their FRMP
- a. First review by 22nd June 2021
 - b. Subsequent reviews must be carried out at intervals of no more than 6 years
 - c. Following a review LLFAs must prepare a revised FRMP which must
 - i) take account of the likely impact of climate change on the occurrence of floods
 - ii) include an assessment include an assessment of the progress made towards implementing the measures
 - iii) if ant measures included in the previous FRMP have not been implemented, include a statement of the reasons why those measures have not been implemented.

Appendix 2 – Risk Management Authority and Partner Contact Details

Flood Risk Management Authorities in Blaenau Gwent

Risk Management Authority	Contact Details
<p>Natural Resources Wales</p>	<p>Head Office Tŷ Cambria House 29 Newport Road Cardiff CF24 0TP</p> <p>South East Area Office Rivers House St Mellons Business Park Cardiff CF3 0EY</p> <p>Phone Number: 08708 506506 Email: Rachel.Sion@naturalresourceswales.gov.uk Website: www.naturalresourceswales.gov.uk</p> <p>Floodline Phone Number: 0845 988 1188 (24 hour service) Type Talk: 0845 602 6340</p>
<p>Lead Local Flood Authority Blaenau Gwent County Borough Council</p>	<p>Blaenau Gwent County Borough Council Civic Centre Ebbw Vale Blaenau Gwent NP23 6XB</p> <p>Phone Number: 01495 311556 Email: info@blaenau-gwent.gov.uk Web: www.blaenau-gwent.gov.uk</p> <p>Technical Services Blaenau Gwent County Borough Council Baldwin House, Victoria Business Park Ebbw Vale, NP23 8ED Telephone Number: 01495 355510 Email: planning@blaenau-gwent.gov.uk</p>
<p>Welsh Government</p>	<p>Contact: Richard Williams Email: Richard.Williams2@wales.gsi.gov.uk</p>
<p>Water Company</p>	<p>Dwr Cymru – Welsh Water Pentwyn Road</p>

	<p>Nelson Treharris CF46 6LY Head Office Phone Number: 01443 452300 Customer Services: 0800 052 0140 Web: www.dwrcymru.co.uk</p>
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Flood Risk Partners in Blaenau Gwent

Partner	Contact Details
<p>Development Services Blaenau Gwent County Borough Council</p>	<p>Blaina District Office, High St, Blaina NP13 3XD Telephone Number: 01495 355510 Email: planning@blaenau-gwent.gov.uk</p>
<p>Civil Contingency Blaenau Gwent County Borough Council</p>	<p>Civic Centre, Ebbw Vale, Blaenau Gwent NP23 6XB Telephone Number: 01495 355568 Email: civil.contingencies@blaenau-gwent.gov.uk</p>
<p>Environmental Health Blaenau Gwent County Borough Council</p>	<p>Civic Centre, Ebbw Vale, Blaenau Gwent, NP23 6XB Telephone Number: 01495 355581 Email: environmental.health@blaenau-gwent.gov.uk</p>
<p>Finance Blaenau Gwent County Borough Council</p>	<p>Civic Centre, Ebbw Vale, Blaenau Gwent NP23 6XB Telephone Number: 01495 355131 Email: angela.chard@blaenau-gwent.gov.uk Email: gina.taylor@blaenau-gwent.gov.uk</p>
Partner	Contact
<p>Emergency Services:</p>	<p>Police Gwent Police Headquarters Croesyceiliog Cwmbrân NP44 2XJ Ebbw Vale Station, Bethcar Street, Ebbw Vale, NP23 6UY Telephone Number: 01633 838 111 Welsh Ambulance Service NHS Trust South East Region Vantage Point House, Vantage Point Business Park, Ty Coch Way, Cwmbran, NP44 7HF Tel: 01633 626262</p>

Partner	Contact Details
	<p>Fire South Wales Fire & Rescue Service Forest View Business Park Llantrisant CF72 8LX</p> <p>Local Ebbw Vale Cemetery Road, Ebbw Vale, NP23 6LE Brynmawr Bailey Street, Brynmawr Tredegar Spencer Square, Tredegar NP22 3RJ</p> <p>In emergency 999</p>
National Flood Forum:	<p>Paul Cobbing Old Snuff Mill Warehouse, Park Lane, Bewdley, Worcestershire, DY12 2EL. Telephone Number: 07773 355181 Email: Paul.cobbing@floodforum.org.uk</p>
National Farmers Union:	<p>Head Office Agricultural House, Stoneleigh Park, Stoneleigh, Warwickshire, CV8 2TZ Telephone Number: 02476 58500</p> <p>Welsh Office of NFU Dafed Jarret Telephone Number: 01982 554222 Email: dafed.jarret@nfu.org.uk</p>
Local Partnerships, forums, and community groups:	<p>Gwent Association of Voluntary Organisations Huw Lewis Telephone Number: 01633 241564 Email: huw.lewis@gavowales.org.uk</p> <p>Co-operative Group Ltd Rhys Burton Telephone 01633 241564 Email: rhys.burton@co-operative.coop</p>
Royal Society for the Protection of Birds:	<p>RSPB - Sutherland House, Cowbridge Road East, Cardiff, CF11 9AB Telephone Number: 029 2035 3000 Email: cymru@rspb.org.uk</p>

Partner	Contact Details
National Parks Authorities:	<p>Brecon Beacon national Park Plas y Flynnon, Cambrian Way, Brecon, Powys, LD3 7HP Telephone Number: 01874 624437 Email: planning.enquiries@breconbeacons.org</p>
Network Rail:	<p>Western House, 1 Holbrook Way, Swindon, SA1 1B Telephone Number: 08457 11 41 41</p>
Parish and Town Councils:	<p>Abertillery & Llanhilleth Community Council, Council Offices, Mitre Street, Abertillery, NP13 1AE Telephone Number: 01495 217323</p> <p>Nantyglo & Blaina Town Council, New Town Council Offices, (former Blaina Infants School), High Street, Blaina Telephone Number: 01495 292817</p> <p>Brynmawr Town Council Town Council Office, Orchard Street, Brynmawr Telephone Number: 01495 312205</p> <p>Tredegar Town Council, Bedwellty House, Tredegar Telephone Number: 01495 722352</p>
Local Resilience Forum:	<p>Local Resilience Forum Coordinator Gwent Police Headquarters Croesyceiliog Cwmbrân NP44 2XJ Email: GLRF.coordinator@gwent.pnn.police.uk</p>
Association of Drainage Authorities (ADA):	<p>6 Electric Parade, Surbiton, Surrey, KT6 5NT Telephone Number: 020 8399 7350 Email: admin@ada.org.uk</p>
Country Land and Business Association (CLA):	<p>Unit 8, Broadaxe Business Park, Presteigne, Powys, LD8 2LAQ Telephone Number: 01547 317085 Email: info.wales@cla.org.uk</p>
SWTRA – South Wales Trunk Road Agency:	<p>12A Llandarcy House, The Courtyard, Llandarcy, Neath, SA10 6EJ Telephone Number: 01792 325963 Email: k.price@southwales-tra.gov.uk</p>

Partner	Contact Details
CADW:	Unit 5-7 Cefn Coed Nantgarw Cardiff Telephone Number: 01443 336000 Email: Suzanne.whiting@wales.gsi.gov.uk
Housing Associations:	<p>Tai Calon Solis One, Rising Sun Industrial Estate, Blaina NP13 3JW Telephone: 0300 303 1717 Email: info@taicalon.org</p> <p>Melin Homes Ty'r Efail, Lower Field, Pontypool, NP4 OXJ Telephone: 0845 310 1102 Email: enquiries@melinhomes.co.uk</p> <p>Linc Cymru, 387 Newport Road, Cardiff, South Glamorgan CF24 1GG Email: james.eades@linc-cymru.co.uk</p> <p>United Welsh Y Borth, 13 Beddau Way, Caerphilly, CF83 2AX Telephone Number: 0800 294 1095 Email: tellmemore@unitedwelsh.com</p>

Appendix 3: Glossary and Abbreviations

Term	Description
Act	A Bill approved by both the House of Commons and the House of Lords and formally agreed to by the reigning monarch (known as Royal Assent).
Bill	A proposal for a new law, or a proposal to change an existing law that is presented for debate before Parliament.
Catchment	An area that serves a river with rainwater that is every part of land where the rainfall drains to a single watercourse is in the same catchment.
CFMP	Catchment Flood Management Plans – plans that provide an overview of the flood risk across each river catchment and estuary. They recommend ways of managing those risks now and over the next 50 – 100 years.
Climate Change	Change in average conditions of the atmosphere near the earth's surface over a long period of time.
Critical Intake	An intake to the drainage system that is classed as at high risk of blockage or having severe consequences such as internal flooding or major disruption of traffic if they became blocked.
Culvert	A covered structure under road, embankment etc, to direct the flow of water.
Defences	A structure that is used to reduce the probability of floodwater or coastal erosion affecting a particular area.
Drainage Authorities	Organisations involved in water level management, including IDBs, the Environment Agency and RFCCs
EA	Environment Agency a Government sponsored Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs.
FCERM	Flood and Coastal Erosion Risk Management.
Flood	Any case where land not normally covered with water becomes covered by water.
Flood and Water Management Act 2010	An Act of Parliament updating and amending legislation to address the threat of flooding and water scarcity, both of which are predicted to increase with climate change.
Flood Risk Management	The activity of understanding the probability and consequences of flooding, and seeking to modify these factors to reduce flood risk to people, property and the environment. This should take account of other water level management and environmental requirements, and opportunities and constraints.
Flood Risk Regulations 2009	Regulations which transpose the EC Floods Directive (Directive 2007/60/EC on the assessment and management of flood risks) into domestic law and to implement its provisions.
Groundwater	Water held underground in the soil or in pores and crevices in rock.
Groundwater Flooding	Occurs when water levels in the ground rise above the natural surface. Low lying areas underlain by permeable strata are particularly susceptible.
Habitats Regulation Assessment (HRA)	The Conservation of Habitats and Species Regulations (SI 490, 2010), Termed the 'Habitats Regulations', implements the EU 'Habitats Directive' (Directive 92/43/EEC) on the Conservation of natural habitats and of wild flora and fauna) and certain elements of the 'Birds

	Directive' – (2009/147/EC). This legislation provides the legal framework for the protection of habitats and species of European importance in Wales.
IDB – Internal Drainage Board	Independent statutory bodies responsible for land drainage in areas of special drainage need in Wales and England. They are long established bodies operating predominantly under the Land Drainage Act 1991 and have permissive powers to undertake work to secure drainage and water level management of their districts.
LLFA – Lead Local Flood Authority	(Local Authority) the County Council or the County Borough Council for the area.
Local Flood Risk	Defined within the Flood and Water Management Act 2010 as including surface runoff, groundwater and ordinary watercourses.
Main River	A watercourse shown as such on the Main River Map, and for which the Environment Agency has responsibilities and powers.
Main River Map –	The definitive map showing which watercourses have been classified as a Main River.
National Strategy	The “National Strategy for Flood and Coastal Erosion Risk Management: Wales” produced by the Welsh Government in response to the requirement under Section 8 of the Flood and Water Management Act.
Ordinary Watercourse	All watercourses that are not designated Main River, and which are the responsibility of Local Authorities or, where they exist, Internal Drainage Boards.
PRFA	Preliminary Flood Risk Assessment as required by the Flood Risk Regulations 2009.
Reservoir	An artificial lake where water is collected and stored until needed. Reservoirs can be used for irrigation, recreation, providing water for municipal needs, hydroelectric power or controlling water flow.
Resilience	The ability of the community, services, area or infrastructure to avoid being flooded, lost to erosion or to withstand the consequences of flooding or erosion taking place.
Risk	Measures the significance of a potential event in terms of likelihood and impact.
Risk Assessment	A structured and auditable process of identifying potential significant events, assessing their likelihood and impacts and then combining these to provide an overall assessment of risk to inform further decisions and actions.
Risk Management	Anything done for the purpose of analysing, assessing and reducing a risk.
Risk Management Authority	A Welsh risk management authority is defined in Section 6 of the Flood and Water Management Act 2010 as the Environment Agency, a lead local flood authority, a district council for an area for which there is no unitary authority, an IDB for an internal drainage district that is wholly or mainly in Wales and a water company that exercises functions in relation to an area in Wales.
SEA - Strategic Environmental Assessment	A legal requirement in the UK for certain plans and programmes stipulated by the SEA Directive (2001/42/EC), to undergo Strategic Environmental Assessment (SEA). The SEA Directive is implemented in Wales by the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004 (SI 2004No. 1656, W170). The purpose of SEA is to provide for a high level of protection of the environment, to ensure the integration of environmental considerations into the preparation and adoption of plans and programmes, and to contribute

	to the promotion of sustainable development and environmental protection.
Sewer	An artificial conduit, usually underground, for carrying off sewage (a foul sewer) or rainwater (a storm sewer) or both (a combined sewer).
SMPs – Shoreline Management Plans	A large-scale assessment of the risks associated with coastal processes and helps reduce these risks to people and the developed, historic and natural environments.
Significant Intake	An intake to the drainage system that is classed as significant is where there is very little chance of blockage due to its construction or its location is such that if it did block it would only cause low level disruption to traffic.
Surface Water Flooding	In the urban context, usually means that surface water runoff rates exceed the capacity of drainage systems to remove it. In the rural context, it is where surface water runoff floods something or someone.
Surface water runoff	This occurs when the rate of rainfall exceeds the rate that water can infiltrate the ground or soil.
Sustainable Drainage systems (SuDS)	Helps to deal with excesses of water by mimicking natural drainage patterns.
Watercourse	A channel natural or otherwise along which water flows.
Water company	A company which hold an appointment under Chapter 1 of Part 2 of the Water Industry Act 1991 or a licence under Chapter 1A of Part 2 of that Act.
Welsh Local Government Association (WLGA)	Represents the interests of Local Authorities in Wales. The three fire and rescue authorities, four police authorities and three national park authorities are associate members.
WFD	Water Framework Directive