Flood Risk Management Plan 2015

Neath Port Talbot County Borough Council

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1.0 Foreword

"This Flood Risk Management Plan is the further extension of the work previously undertaken by the authority in the production of its Preliminary Flood Risk Assessment and Local Flood Risk Management Strategy.

The FRMP gives a greater focus on the areas at risk of flooding and identifies measures to reduce that risk, and in so doing demonstrates the authority's commitment to long term sustainability and ensuring that Neath Port Talbot remains an attractive place to live, work and visit."

Ali Thomas – Leader of Neath Port Talbot County Borough Council

2.0 Introduction

This document is Neath Port Talbot County Borough Council's response, in its role as a Lead Local Flood Authority, to the duty placed upon the authority under The Flood Risk Regulations 2009 to produce a Flood Risk Management Plan by 22nd December 2015.

This Flood Risk Management Plan is the final process in a series laid out under the Flood Risk Regulations 2009 which required the preparation of:

- A Preliminary Flood Risk Assessment
- Flood Hazard and Flood Risk Maps
- A Flood Risk Management Plan

The above documents have been prepared for the first cycle of the regulations. Subsequent reviews of the documents are to be carried out at intervals no longer than six years.

The Plan links closely to Neath Port Talbot's Local Flood Risk Management Strategy, published during 2013 and available on the authority's website:

http://www.npt.gov.uk/pdf/LFRMS_NPT_Local_Flood_Risk_Management_Strategy.pdf

Objectives and measures identified within the strategy document have been extrapolated and included within this plan, along with the addition of new measures to ensure the objectives are accomplished. The authority's Drainage Engineers have reviewed the flood risks illustrated by the Flood Risk and Hazard Maps for each community within the borough and have proposed measures at a local level that will help to reduce flood risk in the most at risk locations. All measures included within this plan have been developed in line with the categories set out in the legislation:

- Preparing
- Preventing
- Protection
- Recovery and Review

This will ensure that NRW are able to publish the flood risk management plans prepared by the lead local flood authorities consistently with those prepared for each river basin district.

This Flood Risk Management Plan covers flooding from surface water, ordinary water courses, ground water and the interface with river flooding. Flooding from main rivers, reservoirs and the sea remains the responsibility of NRW and their proposals can be found within the Western Wales River Basin Flood Risk Management Plan.

The Authority appreciates that we cannot significantly reduce flood risk within the county borough in isolation from our flood risk partners. Therefore we will ensure a close working relationship with NRW and Dŵr Cymru Welsh Water to provide a collective response to flood risk within our communities.

3.0 Purpose of Flood Risk Management Plans in Managing Flood Risk

3.1 What is a Flood Risk Management Plan?

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 NPTCBC 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 Local Flood Risk Management Strategy (June 2013).

This FRMP also aims to achieve some of the objectives set out in the Welsh Government's National Flood and Coastal Erosion Risk Management Strategy[1] 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

3.2 What is included in this FRMP

The information included in this FRMP includes the components set out in the EU Flood Directive (see appendix 3). Most of this information has been gathered and updated through this first cycle, and has been drawn from the findings of the PFRA and the measures identified and set out in the Local Flood Risk Management Strategy (LFRMS)

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.

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

This FRMP highlights the areas most at risk of flooding from surface water and ordinary watercourses in NPTCBC; 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 cover all aspects of flood risk management, including raising awareness of flooding and better understanding of local flooding issues.

As previously identified in the introduction, all the measures identified in this plan have been classed into four categories:

- Prevention
- Protection
- Preparedness
- Recovery and Review

3.3 Legislative Context

3.3.1 Flood Risk Regulations 2009

Under the Flood Risk Regulations 2009, Lead Local Flood Authorities (LLFAs) are responsible for producing Flood Risk Management Plans (FRMPs) for Indicative Flood Risk Areas that were identified in the Preliminary Flood Risk Assessments (PFRAs)[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 three key outputs – See Figure 1.

[2] Indicative Flood Risk Areas are identified where more than 5,000 people are at risk of flooding.

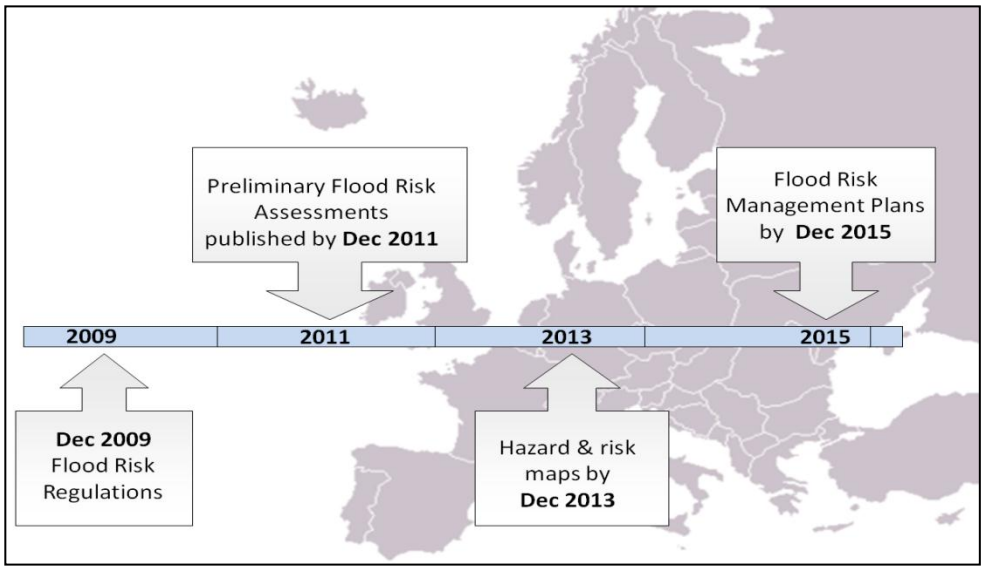


Figure 1: Flood Risk Regulations (2009) Timescale

3.3.2 Preliminary Flood Risk Assessment

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 4.3).

3.3.2 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 maps represent 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 maps also provide 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. The interactive map can be accessed from the following link:

http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?lang=_e&topic=floodmap&layer=default&scale=3&x=323998&y=279658#x=323998&y=279658&scale=3

3.3.3 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.

3.3.4 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 NPTCBC to produce a Local Flood Risk Management Strategy (LFRMS) which was completed in June 2013.

The LFRMS was created to define who the Risk Management Authorities are, what their function is and what their responsibilities are. The Strategy also had to be consistent with the National Strategy for Flood and Coastal Erosion Management. Prior to its publication, the LFRMS underwent a public consultation with all feedback being considered for inclusion.

3.3.5 Water Framework Directive

The Water Framework Directive 2000 is a European Union Directive which commits member states to achieve good qualitative and quantitative status of all water bodies by 2015.

One of the requirements of the WFD is that National Resources Wales and the Environment Agency must produce and update a River Basin Management Plan for each district. NPTCBC lies within the Western Wales River Basin District.

3.3.6 Objectives of the Directive

The Directive aims for 'good statuses for all rivers, lakes, ground and surface waters in the EU.

The ecological and chemical status of water bodies is assessed according to the following criteria:

Biological quality: (fish, benthic invertebrates, aquatic flora)

Hydro-morphological quality: such as river bank structure, river continuity or substrate of the river bed.

Physical-chemical quality: such as river temperature, oxygenation and nutrient conditions.

Chemical quality: that refers to environmental quality standards for the river basin specific pollutants. These standards specify maximum concentrations for specific water pollutants. If even one such concentration is exceeded the water body will not be classed as having a "good ecological status".

3.3.7 Environmental Considerations

Neath Port Talbot have a number of nationally designated environmental sites in addition to locally important ecological areas. Flood and coastal risk management have the potential to impact on these sites, therefore, all activities must take due consideration of the natural environment.

It has been determined by this Council, that the Flood Risk Management Plan falls within the scope of the SEA Directive and therefore, a Strategic Environmental Assessment (SEA) is required. SEA is a statutory requirement for plans and programmes that may have significant effects on the environment and, as such, Neath Port Talbot County Borough Council has decided to adopt the SEA undertaken for the Local Flood Risk Management Strategy for the Flood Risk Management Plan.

The Council, as competent authority under the Habitats Regulations, must also consider requirements of the Habitats Directive in exercising its functions. A Habitat Regulations Assessment was carried out for the Local Flood Risk Management Strategy and this has also been adopted for the Flood Risk Management Plan.

These environmental assessment processes will help to ensure that potential effects of the Plan on the environment are considered in its development, and that opportunities for environmental gains are maximised.

No physical construction work applies to this Flood Risk Management Plan. However investigative work highlighted by the measures may identify construction work that is necessary to relieve flood risk. Should that be the case a review of the Strategic Environmental Assessment will be carried out on a site by site basis.

3.3.8 Consultation

There is a requirement for consultation between NRW, the EA and the LLFAs as the Flood Risk Management Plans and the River Basin Management Plans are being developed. See Section 9.

4.0 Study Area

4.1 Administrative Area

Neath Port Talbot County Borough Council (NPTCBC) is a unitary authority situated on the South-West Wales coast and stretches north to the borders of the Brecon Beacons National Park. The County Borough covers an area of 44,217 hectares and is intersected by three main rivers, the Neath, the Tawe and the Afan. These three rivers are part of the nine river catchments within the Western Wales River Basin District. The majority of the county is upland or semi-upland in nature, with approximately 40% covered by forestry and private woodland. The low lying and flat land areas are predominantly situated close to the coastline around Port Talbot and the lower Neath and Swansea Valleys.

One of the world's largest dune systems spans the county's south-west coastline and much of it is located under the industrial heart of Margam and Port Talbot, as well as the extensive housing estate, The Sandfields. With a population of 137,400 (2007), Neath Port Talbot is the seventh largest unitary authority in Wales comprising of large urban areas of Port Talbot, Neath and Pontardawe situated at the coast and valley floors respectively. Inland, smaller urban areas can be found at Cwmavon, Cymmer, Glynneath, Ystalyfera and Brynamman.

The modern settlement patterns in the county reflect the industrial history of the area, with towns and villages lining the valleys where the coal industry had developed and at the confluences of the numerous river valleys.

The study area falls within the Western Wales River Basin District and is served by Dŵr Cymru Welsh Water (DCWW) as the regulated water and Sewerage Company. DCWW is a single purpose company privately owned by Glas Cymru, with no shareholders and run solely for the benefit of its customers. Neath Port Talbot CBC is within the National Resources Wales region and is served by a Regional Flood Defence Committee which became the Wales Flood and Coastal Committee in April 2011. Neath Port Talbot Council, City and County of Swansea and Bridgend County Borough Council have one Member jointly serving on this group, with the members serving in rotation on a three year basis.

Neath Port Talbot is bordered to the West by City and County of Swansea, to the East by Bridgend County Borough Council and Rhondda Cynon Taff County Borough Council, to the North by Powys County Council and Merthyr County Borough Council and to the South by the sea.

4.2 Flood Risk in NPTCBC

4.2.1 Summary of types of flooding present in NPTCBC

1. Surface Water Flooding

Surface water flooding occurs when heavy rainfall exceeds the capacity of local drainage networks and water flows across the ground. Information on surface water flooding incidents was obtained from a number of sources, key sources being the Council's own day to day records and Catchment Flood Management Plans (CFMPs), which are high-level strategic plans published by the Environment Agency that focus on flooding in major river catchments.

2. Groundwater Flooding

Groundwater flooding occurs as a result of water rising up from the underlying aquifer or from water flowing from abnormal springs. This tends to occur after long periods of sustained high rainfall, and the areas at most risk are often low-lying where the water table is more likely to be at shallow depth. Groundwater flooding is known to occur in areas underlain by major aquifers, although increasingly it is also being associated with more localised floodplain sands and gravels. There is however no specific areas of historical groundwater flooding recorded in the NPT area.

3. Sewer Flooding

Sewer flooding is often caused by excess surface water entering the drainage network. As part of the Preliminary Flood Risk Assessment, DG5 registers from DCWW were analysed to investigate the occurrence of sewer flooding incidents across the County Borough. It was found that there were a total of 430 sewer flooding events that have been recorded by the water companies, of which 355 were identified as being at high risk with 34 suffering from internal flooding. Once a property is identified on the water companies DG5 register, it typically means that the water company can put funding in place to mitigate the risk.

4. Canal and Ordinary Watercourse Flooding

Information was obtained from British Waterways which details the canal network through the NPT area at Pontardawe including the location of canals, weirs, sluices and locks. British Waterways also provided details of historic breaches or overtopping events that have occurred across the county. There are two other canals within the NPT area and enquiries were made to both the Neath Canal Company and the Tennant Canal Company although it is acknowledged that the topography of these latter two canals is vastly different from the Swansea Valley Canal at

Pontardawe. In this area the canal is perched above part of the town and could be viewed as a 'significant' flood risk to the area under certain circumstances.

5. Interaction with Main Rivers and the Sea

There is good anecdotal evidence to suggest that surface water flooding may be exacerbated in some areas such as the Neath Abbey / Milland Road areas during high tidal cycles when gravity drains and outfalls are blocked with high tidal waters. (Rivers Neath and Ffrwydwyllt)

4.3 Preliminary Flood Risk Assessment

The Preliminary Flood Risk Assessment was carried out in order to establish the level of flood risk across the LLFA. The process looked specifically at flooding from surface water, ground water, ordinary watercourses and the interface with flooding from main rivers. Main river flooding remains the province of NRW.

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

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

- A minimum of two hundred people affected
- A minimum of twenty businesses affected
- Two or more critical services

National Resources Wales identified 38 no. blue squares within the County Borough.

A cluster of blue squares indicated that the area encapsulated was much more likely to experience flooding events. Where four or more blue squares were found to be adjacent within a three kilometre by three kilometres square, the area was considered to form an Indicative Flood Risk Area.

The key flood risk indicator for establishing an indicative Flood Risk Area was set as the number of people at risk of being affected by flooding being greater than five thousand.

On the basis of the thirty-eight blue squares identified by NRW, and the methodology defined above, NRW identified an Indicative Flood Risk Area within Neath and Port Talbot of 60km^2.

The Key Flood Risk Indicators for NPTCBC were calculated by NRW; the following figures were determined:

Human Health consequences	-	12114
Number of People (2.35 multiplier)		
Other Human Health Consequences	-	57
Number of Critical Services Flooded		
Economic Consequences – Number	-	7154
of non-residential properties flooded		

As part of the Preliminary Flood Risk Assessment process significant past flooding events within the borough were also considered.

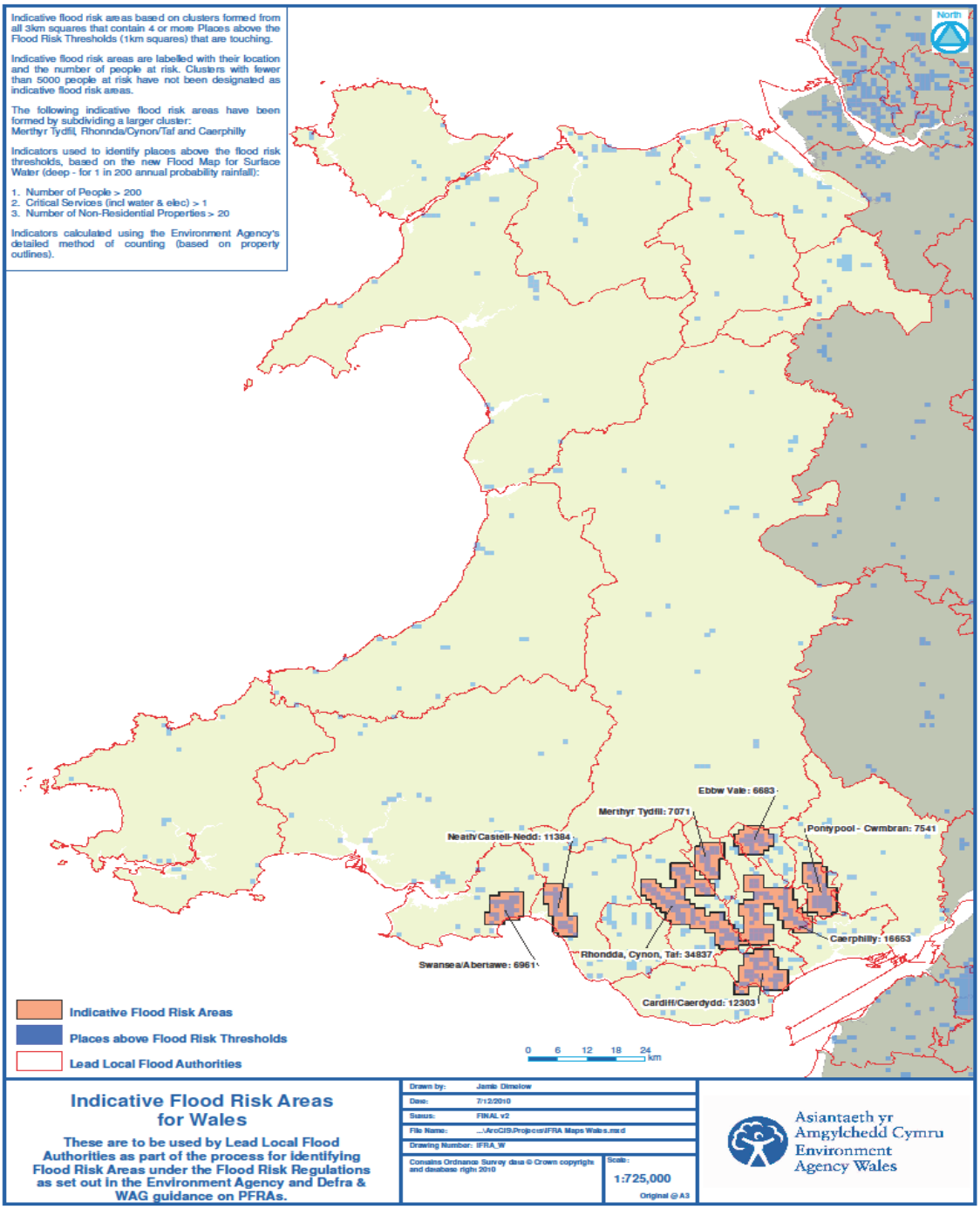


Figure 2: Indicative Flood Risk Areas - Wales

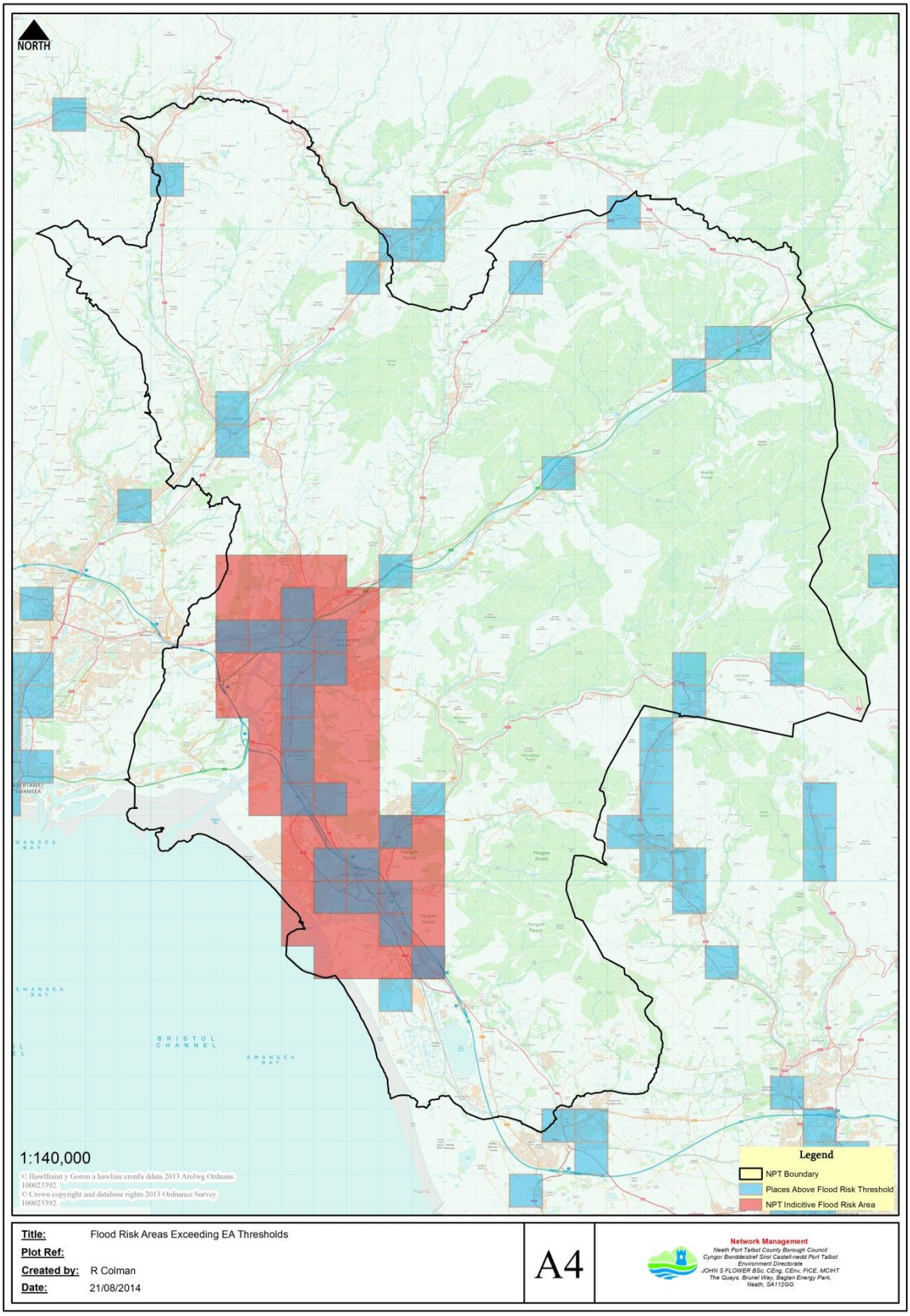


Figure 3: Indicative Flood Risk Areas within Neath and Port Talbot County Borough

4.4 Top communities at risk from surface water flooding in Neath Port Talbot

Table 1a and Table 1b list all of the communities in Neath Port Talbot, and are ordered alphabetically.

The communities listed in Table 1a, are ones that fall - to any extent - within the Indicative Flood Risk Area.

Table 1a: Communities at Risk – Indicative Flood Risk Area

Community	Percentage of Properties at Risk of Flooding	Number of Properties at Risk of Flooding	Population	Number of People at Risk of Being Flooded
ABERAVON	42.05%	1092	6103	2566
ABERDULAIS	0.71%	18	2305	16
BAGLAN	6.47%	853	7231	468
BRITON FERRY E	9.01%	232	3520	317
BRITON FERRY W	10.77%	172	3076	331
BRYN & CWMAVON	3.40%	101	6975	237
BRYNCOCH NORTH	1.78%	17	5264	40
BRYNCOCH SOUTH	3.77%	97	6049	228
CADOXTON	2.20%	17	1814	40
CIMLA	0.72%	12	3943	28
COEDFFRANC C	1.50%	27	4242	63
COEDFFRANC N	5.28%	54	2404	127
COEDFFRANC W	1.63%	19	2735	45
DYFFRYN	3.17%	46	3405	108
MARGAM	2.64%	34	3029	80
NEATH EAST	27.12%	879	7616	2066
NEATH NORTH	10.84%	226	4897	531
NEATH SOUTH	0.95%	20	4973	47
PORT TALBOT	2.85%	74	6105	174
SANDFIELDS EAST	1.70%	54	7447	127
SANDFIELDS WEST	0.37%	11	6970	26
TAIBACH	9.30%	208	5254	489
TONNA	6.36%	66	2437	155

The percentage of properties at risk, along with the number of people at risk of flooding within each community has been calculated based on the Updated Flood Map for Surface Water. For more information on the detail of these calculations, please refer to Appendix 2 – Analysing the Data. The percentage of properties at risk of flooding gives a good indication of flood risk within an area; hence the measures proposed within this plan will be delivered in those areas at highest risk first.

The communities listed in Table 1b, are those that fall outside of the Indicative Flood Risk Area.

Table 2b: Communities at Risk

Community	Percentage of Properties at Risk of Flooding	No. of Properties at Risk of Flooding	Population	Number of People at Risk of Being Flooded
ALLTWEN	0.41%	4	2308	9
BLAENGWRACH	16.35%	144	2070	338
CRYNANT	2.40%	21	2054	49
CWMLLYNFELL	1.30%	7	1269	16
CYMMER	5.53%	70	2973	165
GLYNCORRWG	18.74%	95	1191	223
GLYNNEATH	33.15%	538	3814	1264
GODREGRAIG	1.63%	12	1725	28
GWAUN-CAE-GURWEN	3.79%	51	3165	120
GWYNFI	1.04%	7	1589	16
LOWER BRYNAMMAN	2.76%	17	1448	40
ONLLWYN	3.14%	17	1271	40
PELENNA	1.49%	8	1260	19
PONTARDAWE	2.36%	58	5779	136
RESOLVEN	5.14%	75	3429	176
RHOS	3.32%	36	2547	85
SEVEN SISTERS	2.99%	28	2202	66
TREBANOS	2.38%	15	1483	35
YSTALYFERA	6.79%	101	3497	237

Under the Flood Risk Regulations 2009, a Flood Risk Management Plan need only be prepared for an Indicative Flood Risk Area. There is no requirement of the authority to report to Europe on the measures it is proposing to undertake for any communities that fall outside of this area (Table 1b).

For the purpose of reporting to Europe on the measures we plan to deliver over the coming years, the communities within Table 1b have to be excluded. However officers are aware that flood risk is not limited to the Indicative Flood Risk Area and have therefore analysed the level of flood risk for all of the Borough's community areas. Local measures have been proposed for each area to reduce the risk of flooding, ensuring a fair and equal approach to flood risk management across the borough. To understand further how the measures have been selected and prioritised, please refer to section 7.4 - Summary of the Process for Selecting and Prioritising Measures to Achieve Objectives.

4.5 Conclusions on a Borough Wide Level

The flood extent maps, when viewed at a county scale, provide a good indication of where flooding is known to be a problem, together with where it is likely to be a problem in severe conditions. It is evident from these maps that the hills and valleys of our county create natural channels and barriers; protecting some areas and threatening others. Unfortunately, our largest communities and areas favoured for habitation and development often lie within these areas of potential risk, for example: low lying coastal areas, and along the flood plains of river valleys.

It is also noted that while approximately half of the communities in the county lie within Indicative Flood Risk Areas, less than ten per cent of the county by area is classed as such.

5.0 How we currently manage flood risk in Neath Port Talbot

In 1989, the National Rivers Authority was set up, a national body that took over the roles and responsibilities for flood risk management, drainage and water quality throughout the country. In 1991, several pieces of legislation were enacted to consolidate the existing laws into more easily followed Acts; The Land Drainage Act and the Water Resources Act being the two that are pertinent to this document.

The Land Drainage Act outlines the responsibilities and identifies those responsible for the management of land drainage for a number of bodies including Internal Drainage Boards and Local Authorities. District Councils were originally responsible for sewerage before being passed to the water companies, while councils continue to manage a number of ordinary watercourses and highway drainage.

The Water Resources Act outlines the roles and responsibilities of the National Rivers Authorities. In 1995, the Environment Act was established and from this, the Environment Agency took over the roles and responsibilities of the National Rivers Authorities, along with the duties for issuing flood warnings.

Existing flood risk management practices include:

The regular maintenance of existing structures, watercourses, drainage systems and other related infrastructure, to ensure the systems already in place work as efficiently as possible.

Advance warning of significant rainfall events is provided by a subscription service forecast provided by Meteogroup.

A Geographical Information System dataset is in continual development - mapping existing infrastructure, logging repairs, flooding incidents, recording any new systems or infrastructure as they become active.

Reactive maintenance and or cleansing, including responding to reported problems or incidents.

5.1 How we prioritise our work

Neath Port Talbot County Borough Council undertakes a number of different Flood Risk Management activities. These range from larger capital flood alleviation schemes to smaller day to day drainage repairs. Statutory duties such as those placed upon the authority by the Flood and Water Management Act 2010 and the Flood Risk Regulations 2009 are given high priority. Drainage asset maintenance consists of gully, culvert inlet and ditch cleansing on a cyclic programme. Assets located within areas that have historically experienced flooding are given high priority along with those that drainage officers have

identified through experience such as those listed in Table 4, contained within Section 8 of this plan.

The authority's prioritisation of potential flood alleviation schemes is largely based on the summation of a Rating and an Adjustment Factor, taking into consideration the following aspects:-

The type and location of the incident;

the frequency with which they occur.

Table 3: Prioritising Flood Risk

Rating	Description
1	Flooding Inside Buildings and jointly Highway Safety
2	Flooding outside but adjacent to buildings
3	Flooding of Highways and footways / culvert problems
4	Maintenance costs
5	Watercourse Bank Stability
6	Flooding of Garden Areas / Wet Gardens
7	Flooding of Communal Areas
8	Flooding of Fields
9	Landscaping Improvement
Adjustment Factor	Description
0	Problem has been reported more than once in the last twelve months
1	Problem has been reported once in the last twelve months
2	Problem has been reported once in the last two years
3	No problems reported within the last two years
4	Problem being monitored

5.2 Procedures, Measures and Powers

Flood risk in Neath Port Talbot is managed through:-

Operational procedures, developed over years through good working practice, together with new methods enabled by modern technology.

Measures which were included in the Local Flood Risk Management Strategy.

Powers given to all LLFAs through the Flood and Water Management Act 2010 and the Land Drainage Act 1991.

As NPTCBC is also the Highways Authority for the area: Powers under the Highways Act 1980.

5.2.1 Operational Procedures

The main operational procedures used to manage flood risk in NPTCBC include, but are not limited to:

Emergency cleaning of culvert debris screens which have been reported by members of the public.

Collection and maintenance of an inventory database relating to the highway drainage infrastructure.

Meeting relevant requirements under the Highways Act 1980

Responding to public correspondence and enquiries

Meeting relevant requirements under the Land Drainage Act 1991

Meeting relevant requirements under the Coast Protection Act 1946

Meeting relevant requirements under the Flood and Water Management Act 2010 and the Flood Risk Regulations 2009.

Cleaning drainage channels and gullies

Cleansing of debris screens and maintaining culverts in Council ownership

Monitoring and maintaining culverts

Designing out flooding problems

Coastal Management

Flood response during the day and out of hours

Providing a drainage assessment service for Highways Development Control

Undertaking capital and revenue works for drainage improvements and for the repair and improvement of highways and associated assets and for other civil engineering works as in-house contractor when requested

5.2.2 Measures contained within the Local Flood Risk Management Strategy

Measures that are contained in Neath Port Talbot's Local Flood Risk Management Strategy which are currently being utilised to manage and reduce flood risk are listed below. Only 'Local' level measures have been included as 'High' level measures are not implemented by Neath Port Talbot County Borough Council in its capacity as Lead Local Flood Authority.

1. Development of a toolkit by the LLFA to assist in raising community awareness and preparation for flood and coastal erosion risk.

2. The delivery of the appropriate implications of the 2nd round of SMP with proportionate implementation over the life of the Strategy.

3. Development of Local Flood Risk Management Strategies.

4. Implementation of the statutory responsibilities including those set out within the Flood and Water Management Act 2010 and the Flood Risk Regulations. To be achieved by the end of 2013 with the majority of strategies to be implemented by 2017.

5. The provision of mapping of all sources of flooding.

6. Proportionate implementation of the CFMPs over the life of the Strategy.

7. Development of Local Development Plans that include adequate provisions in respect of flood and coastal erosion risk.

8. Compliance to the requirements of Planning Policy Wales and relevant Technical Advice Notes. This is an on-going action to be carried out by the Local Planning Authorities.

9. Provision of appropriate advice on local flood and coastal erosion risk in relation to planning applications.

10. Appropriate undertaking of Strategic Flood Consequence Assessments and their use to inform Local Development Plans. This is an on-going process carried out by the Local Planning Authority.

11. Approval and implementation of SuDS drainage systems by the SuDS Approving and Adopting Body. This action will be carried out from 2014. (Not yet instigated at this time).

12. Provision of advice and guidance on appropriate land use management.

13. Development of a register and designation of natural and manmade structures/features that are likely to have an effect on flood risk by 2014. This is on-going and is to be carried out by the LLFA.

14. Review the programme of regular and appropriate maintenance for flood and coastal flood risk management assets to be implemented by the Risk Management Authorities.

15. Programme of community based awareness and engagement activities utilising the Flood Risk Management Engagement Toolkit. To be undertaken from 2012 and delivered by Natural Resources Wales and the LLFA.

16. Affected groups and vulnerable individuals to be identified within the flood affected area by 2017 by the LLFA.

17. Ensure property level flood resilience measures and the requirements for SuDS are incorporated into Building Regulations.

18. Enhanced awareness of property level resilience measures and guidance on their use.

19. Development of a sustainable methodology for funding individual property level resilience measures.

20. Provision of appropriate warnings in relation to all sources of flooding.

21. Complete emergency plans for all significant sources of flood risk.

22. Development of local level emergency plans with Community/Town Councils.

23. Pan-Wales emergency exercises to test response and recovery arrangements by 2016.

24. Local level emergency exercises to test response and recovery arrangements over the life of the Strategy.

25. Early and appropriate response to emergency events.

26. Development and implementation of effective evacuation protocols for emergency events.

27. Development of mutual aid protocols for resources, equipment and respite for emergency events.

28. Respite accommodation is to be identified and provided throughout the life of the Strategy by the Local Authority.

29. Development of procedures by the LLFA for the effective clearance of debris.

30. Development of repair schedules including provision for the installation of resilience measures by the LLFA.

31. Ensure procedures are in place to investigate, where warranted, the cause of flooding within one month of the occurrence of a flooding event by the LLFA.

5.2.3 Additional Powers given to NPTCBC 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 that include the following:-

A duty to investigate all flooding within its area, provided the LLFA deems it necessary and appropriate. (*Section 19)*

A duty to maintain a register of structures and features likely to affect flood risk. (*Section 21*)

A duty to contribute to sustainable development, e.g. SuDS. (*Section 32 of Schedule 3*)

Consenting on Ordinary Watercourses. (*Section 29 of Schedule 2*)

5.3 Who we work with to manage flood risk in Neath Port Talbot

Neath Port Talbot work with a number of organisations to manage flood risk within the County, in addition to the ones detailed below the Authority also work closely with the other LLFAs across South Wales, sharing information, expertise and resources on any cross county initiatives. See the Local Flood Risk Management Strategy document for more information on who we work with.

Table 4: Organisations that Work with NPT

Organisation	**Area of Responsibility**	**Responsibility**
National Resources Wales	Wales	Main Rivers, Coastal Flooding, Reservoirs
Neath Port Talbot County Borough Council	County	Ordinary Watercourses, Surface Water, Groundwater, Urban Road Flooding. Neath Canal from Resolven to Glynneath, Swansea Canal from Ynysmeudwy to Godre'r-Graig
Welsh Government - South Wales Trunk Road Agent	South & West Wales	Motorway and Trunk Road Flooding
Dŵr Cymru - Welsh Water	Most of Wales	Burst water mains, main sewer flooding

Neath Canal Navigation Company Ltd	Neath Canal	Canal related flooding
The Canal and River Trust	Swansea Canal	Canal related flooding
Tennant Canal Company	Tennant Canal	Canal related flooding

5.4 How this FRMP has been Co-ordinated

Co-ordination and development of this FRMP has been achieved through regular meetings of the various groups as listed below:

1. South and West Wales Flood Risk Management Group attended by Bridgend, Neath Port Talbot, Swansea, Carmarthenshire, Pembrokeshire, and Ceredigion; along with representatives from NRW, WLGA and DC/WW.

2. Flood Risk Management Plans Working Group attended by Cardiff, Swansea, Neath Port Talbot, Rhondda Cynon Taff, Merthyr, Torfaen, Blaenau-Gwent and Caerphilly, together with WG, NRW and WLGA.

3. Flood Risk Management Plan Task and Finish Group attended by CCS, NPTCBC, RCTCBC and MTCBC.

Frequent meetings have taken place with WLGA. Meetings have also taken place with Dŵr Cymru Welsh Water; internal collaboration has also been achieved through regular meetings of the Flood Risk Management Team.

5.5 Measures Already Underway in NPTCBC to Manage Flood Risk

Details of the measures along with the operational procedures that are currently implemented are listed under clause 4.2.

There is a requirement that the measures should address the four categories of Prevention, Protection, Preparedness and Recovery and Review. Details of the type of measures for each category are given as follows:

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

Measure 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 Flood Defence Consents, Comment on Flood Consequence Assessment, Update and improve the accuracy of flood risk mapping, better understand local flood risk.

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.

Recovery and Review

M51: Individual and societal recovery

Clean up and restoration activities (buildings, infrastructure, etc.) Health and mental health supporting actions, including managing stress, disaster financial assistance (grants, tax), 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 measure listed in the FRMS and used in this report has been placed into one of these categories as noted within each measure.

The measures ascribed to each of the Communities in Chapter 7 are referenced by these same M prefixed number defined above.

6.0 Co-ordination with the Western Wales River Basin

Under the Water Framework Directive the Environment Agency and National Resources Wales have a duty to prepare a River Basin Management Plan for each River Basin District. The Welsh Districts are as shown:

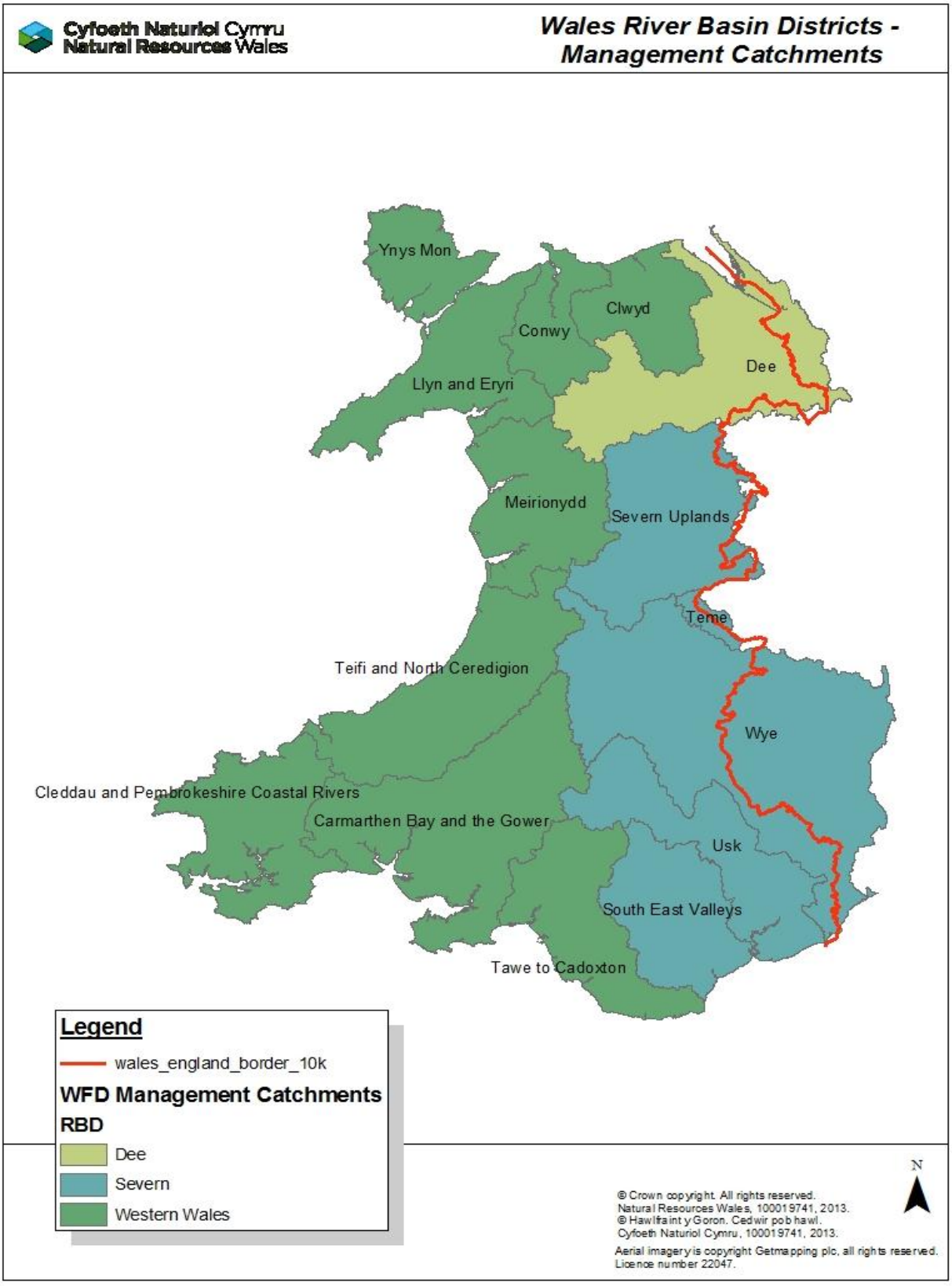


Figure 4: Wales River Basin Management Catchments

6.1 Western Wales River Basin District Overview

The Western Wales River Basin District covers an area of 16,653 square kilometres. It extends across the entire western half of Wales, from the Vale of Glamorgan in the south to Denbighshire in the north.

The main centres of population are restricted to the coastal strip and the westernmost part of the South Wales valleys. The main urban centres are Swansea, Llanelli, Bridgend and Neath in the south, Aberystwyth in the centre on the coast and Bangor in the north. The river basin district is primarily rural, with land mainly used for agriculture and forestry. Thriving marine, oil and gas industries are critical economic activities, along with heavy industry such as the steel works at Port Talbot and commercial fisheries and tourism around the Welsh coastline.

The lakes, rivers and coastal waters of the district are renowned for their fishing. Seventy per cent of the District's coastline is designated (under European Union Directives and UK law) for its environmental quality, including many world class bathing beaches and internationally important conservation sites.

There are large and valuable cockle beds at Traeth Lavan in the north and The Burry inlet in the south. Mussels are harvested from natural beds in the Conwy and Dyfi and farmed in the Menai Strait on some of the most productive mussel beds in Europe. Much of the upland is given over to livestock farming and forestry. Dairy farming is dominant in the lowlands, particularly in Pembrokeshire and Carmarthenshire. The milder climate of South Pembrokeshire also allows for significant arable production.

The dramatic coast and the proximity of significant population also helps explain the importance of the coastal tourism industry which contributes over £350 million each year to the Welsh economy.

The district is divided into nine catchment areas. Neath Port Talbot is a part of the Tawe to Cadoxton.

6.2 Co-ordination with the Western Wales River Basin Management Plan

The draft Western Wales River Basin Management Plan (RBMP) was prepared by National Resources Wales as a requirement of the Water Framework Directive and was published on the NRW website in October 2014.

As part of the development of the RBMP a consultation process began on its draft release. The website offers a questionnaire so that feedback could be used to inform the generation of the next draft.

NPTCBC has examined the objectives and measures that are proposed within the RBMP and have ensured that the measures selected within this Flood Risk

Management Plan have regard to, and do not conflict with those contained within the RBMP. A number of the measures contained within section 8.1.3 County Wide Measures to Mitigate Flood Risk, have been directly linked to measures and actions contained within the Western Wales River Basin Management Plan. NPT will aim to identify any possible opportunities to help deliver the RBMP objectives while undertaking the Flood Risk Management measures identified within this plan.

The current draft of the Western Wales River Basin Management Plan can be found at:

http://webarchive.nationalarchives.gov.uk/20140328084622/http://cdn.environment-agency.gov.uk/gewa0910bswp-e-e.pdf

6.3 Co-ordination with the Western Wales River Basin Flood Risk Management Plan

The draft Western Wales River Basin Flood Risk Management Plan (RBFRMP) was prepared by National Resources Wales as a requirement of the Flood Risk Regulations 2009 and was published on the NRW website in October 2014.

As part of the development of the RBFRMP a consultation process began on its draft release. The website offers a questionnaire so that feedback could be used to inform the generation of the next draft.

NPTCBC has examined the objectives and measures that are proposed within the RBFRMP and have ensured that the measures selected within this Flood Risk Management Plan have regard to, and do not conflict with those contained within the RBFRMP.

The Consultation can be found at:

http://naturalresources.wales/about-us/consultations/our-own-consultations-closed/consultation-on-the-proposed-update-to-wales-river-basin-management-plans/?lang=en

7.0 Neath Port Talbot Flood Risk Management Plan Objectives

The Welsh Government requested the development of a Local Strategy for the Management of Flood Risk in the Borough. The Local Strategy was prepared, approved and published by May 2013.

A list of objectives and measures were derived and agreed upon. The objectives included within the Local Flood Risk Strategy have been adopted as the Objectives of this Flood Risk Management Plan. They have been included below.

7.1 Summary of Welsh Government National Flood and Coastal Erosion Risk Management Strategy

In the Welsh Governments strategy document, "National Strategy for Flood and Coastal Erosion Risk Management in Wales", four over-arching objectives were established for the management of flood and coastal erosion risk in Wales:-

1. **Reducing the Consequences** for individuals, communities, businesses and the environment from flood and coastal erosions.
2. **Raising Awareness** of and engaging people in the response to flood and coastal erosion risk.
3. **Provide an effective and sustained response** to flood and coastal erosion risk management.
4. **Prioritising Investment** in the most at risk communities.

The National Strategy explains that the implementation of these objectives will be the responsibility of everyone involved in or affected by flood and coastal erosion risk management from the Welsh Government to the Welsh Flood Risk Management Authorities and the people of Wales themselves.

7.2 NPTCBC's Objectives Extracted from the Local Flood Risk Management Strategy

The strategy document further identifies a number of sub-objectives supporting each over-arching objective as follows:

1.0 **Reducing the consequences** for individuals, communities, businesses and the environment from flooding and coastal erosion.

1.1 Provide strategic leadership and direction at a national level.

1.2 Provide strategic leadership and direction at a local level.

1.3 Develop policies for effective land use management and enhanced development control procedures where appropriate.

1.4 Establish regular maintenance schedules for flood and coastal erosion risk management.

2.0 **Raising Awareness** of and engaging people in the response to flood and coastal risk.

2.1 Ensure that by 2026 everyone who lives in a flood risk area understands the flood risk they are subject to, the consequences of this risk and how to live with that risk.

2.2 Enhance property and community resilience.

3.0 **Providing an effective and sustained response** to flood and coastal erosion events.

3.1 Ensure the preparation and testing of Emergency Plans.

3.2 Respond to events in a timely and appropriate manner.

3.3 Facilitate recovery from flooding within the shortest possible timescales.

4.0 **Prioritising investment** in the most at risk communities.

4.1 Develop a national programme of investment for flood and coastal erosion risk management.

4.2 Increase the use of alternative sources of funding for flood and coastal erosion management.

7.3 Delivery Themes Identified Within the National Flood and Coastal Erosion Risk Management Strategy

The National Strategy document requested Lead Local Flood Authorities to consider local measures under the following high level themes:-

- Development planning and adaptation (encompassing both new and adaptations to existing developments/landscapes);
- Flood forecasting, warning and response;
- Land, cultural and environmental management;
- Asset management and maintenance;
- Studies, assessments and plans;
- High level awareness and engagement (to increase individual and community resilience); and
- Monitoring (of the flood risk issues).

Please refer to NPTCBC's Strategy Document which identifies how each local measure considered by the strategy and brought forward into this FRMP are encompassed by the above delivery themes.

7.4 Summary of the Process for Selecting and Prioritising Measures to Achieve Objectives

The measures identified within this plan have been selected to achieve the objectives contained within Section 7.2. The principal result that is hoped to be achieved through implementing these measures is a reduction in flood risk across the borough.

All of the measures have been selected to achieve the principal result of reducing the risk of flooding to our communities, the environment and the economy. The measures have been selected to ensure:

- Our communities are prepared for potential flood events;
- prevention and protection measures are in place to reduce the associated risks and hazards, and
- a recovery and review process is established to aid those in need and help the authority and communities to learn from their experiences.

Prioritising the delivery of the measures that have been proposed is essential to ensure the effective delivery of this Flood Risk Management Plan. As identified within Table 1a and 1b, the percentage of people and properties at risk within an area gives a good indication of the level of flood risk. However it is important to note that the percentage of people and properties at risk of flooding is not the only measure of flood risk. Infrastructure, the natural and historic environment, and the economy can also be at risk of flooding.

Priorities are ever changing within the drainage section and there are many ways in which we prioritise the various functions that the section undertakes. For the purpose of delivering this FRMP, resources will be focused in those areas at highest risk of flooding, taking into account the risk posed to human health, the environment, cultural heritage and economic activity. It cannot be ignored that the regulations only require measures to be implemented for an Indicative Flood Risk area; however the authority understands that flooding can be experienced by all communities within the borough.

Measures that produce the greatest reduction of flood risk are those that will be implemented first. Those that satisfy multiple objectives will be given a higher priority than those that only satisfy one. Additionally any measures which have beneficial environmental impacts such as those that fulfil Water Framework Directive objectives and link with the measures contained within the Western Wales River Basin Management Plan will also be given priority.

The measures that have been identified for action within Section 8 and Appendix 1 of this plan generally fulfil more than one objective. In delivering the measures, officers will explore delivery approaches that will achieve

multiple benefits in line with the Well-being of Future Generations Goals set out in the Well-being of Future Generations (Wales) Act 2015.

As identified throughout this document, the measures selected to achieve the objectives are categorised into Preparedness, Prevention, Protection and Recovery and Review.

8.0 How We Will Manage Flood Risk at a Local Level

8.1 NPTCBC – Flood Risk Area

8.1.1 Overview

Neath Port Talbot County Borough Council is a unitary authority situated on the South-West Wales Coast between Swansea and Bridgend. The borough has a mix of urban and rural communities situated along the steep hillsides and river valleys. The urban communities are located along the coast including Neath and Port Talbot town centres, Margam and the Sandfields housing estate. Pontardawe is also a main urban centre located in the Swansea Valley. The Neath, Afan and Swansea Valleys are dotted with rural communities and are drained by the three main rivers located in the Borough.

Surface water from the upper reaches of the Afan Valley including the communities of Cymmer, Abergwynfi, Glyncorrwg, Croeserw and Cwmavon is drained by the River Afan together with the communities of Pontrhydyfen and Tonmawr via the River Pellena while the communities of Bryn and Goytre are drained by the Ffrwd Wyllt.

The majority of the communities situated within the Neath Valley are drained directly by the River Neath, which has a number of major tributaries including the River Dulais and the River Clydach. The communities that fall within this catchment include Skewen, Bryncoch, Cimla, Tonna, Resolven, Cwmgwrach, Crynant, Severn Sisters and Glynneath.

Surface water from the communities situated in the Swansea Valley is drained by the River Tawe. These communities include Ystalyfera, Godre'r Graig, Ynysmeudwy, Pontardawe, Alltwen and Trebanos. There are a number of tributaries to the Tawe including the Upper Clydach River which drains the community of Rhydyfro. The communities of Gwaun Cae Gurwen, Lower Brynamman and Tairgwaith situated in the North West of the Borough drain to the River Amman.

Each community within the borough is drained via numerous watercourses, culverts and surface water drainage networks. Surface water enters these drainage systems through road gullies, surface runoff and through various other intake features. The authority has approximately thirty thousand road gullies of various types and one thousand two hundred and forty one culvert inlets and outlets known to date, which it maintains to ensure the passage of water into these local drainage systems and ultimately to the closest watercourse.

These drainage assets are recorded by the authority and displayed via a Geographical Information System. Additional assets are continuously being identified and surveyed to meet the requirements of the Flood and Water

Management Act along with the Measures identified in the LFRMS and those proposed within this FRMP.

NPTCBC's officers realise through years of experience that the most likely source of flooding within the authority is from blocked culvert grids and intakes. Therefore, considerable emphasis has been placed on this aspect throughout this section of the document. The following table lists the critical intakes located throughout the county borough.

Table 5: Critical Intakes

OBJECT ID	LOCATION	WARD	GRADE
CUL_0009	SPARSHOP	Baglan	Critical
CUL_0012	ARNALLT BROOK/BEECH WOOD	Taibach	Critical
CUL_0013	TORONTO AVENUE	Taibach	Critical
CUL_0014	YNYSYMAERDY ROAD	Briton Ferry East	Critical
CUL_0015	YNYSYMAERDY ROAD	Briton Ferry East	Critical
CUL_0016	YNYSYMAERDY ROAD	Briton Ferry East	Critical
CUL_0017	CRYDDAN BROOK	Neath East	Critical
CUL_0019	GRANDISON BROOK	Neath East	Critical
CUL_0030	CHAIN ROAD	Glynneath	Critical
CUL_0031	GLYNNEATH WORKSHOPS	Glynneath	Critical
CUL_0033	NO 18 LLYGAD YR HAUL	Glynneath	Critical
CUL_0035	STANLEY PLACE	Cadoxton	Critical
CUL_0036	DŴR Y FELIN OVERFLOW	Bryncoch South	Critical
CUL_0037	DAYS ROUNDABOUT	Dyffryn	Critical
CUL_0038	CAENANT TERRACE	Coedffranc Central	Critical
CUL_0050	GRAIG NEWYDD	Godregraig	Critical
CUL_0052	OLD ROAD, NEATH ABBEY	Dyffryn	Critical
CUL_0055	CANAL	Pontardawe	Critical
CUL_0061	TROTTING TRACK	Lower Brynamman	Critical
CUL_0062	TROTTING TRACK	Lower Brynamman	Critical
CUL_0079	HIGHWAY CROSSINGS	Glyncorrwg	Critical
CUL_0083	HIGHWAY CROSSINGS	Glyncorrwg	Critical
CUL_0084	HIGHWAY CROSSINGS	Glyncorrwg	Critical
CUL_0085	HIGHWAY CROSSINGS	Glyncorrwg	Critical
CUL_0088	HIGHWAY CROSSINGS	Glyncorrwg	Critical
CUL_0091	HIGHWAY CROSSINGS	Glyncorrwg	Critical
CUL_0092	HIGHWAY CROSSINGS	Glyncorrwg	Critical
CUL_0093	HIGHWAY CROSSINGS	Glyncorrwg	Critical
CUL_0181	JERSEY PARK	Briton Ferry East	Critical

CUL_0215	HEOL CAMLAS	Bryn & Cwmavon	Critical
CUL_0493	INTERCEPTOR	Neath North	Critical
CUL_0925	TROTTING TRACK	Lower Brynamman	Critical
CUL_1058	EAGLEBUSH/ CRYDDAN BROOK	Neath South	Critical
CUL_1414	FFRWYDWYLLT	Margam	Critical

Further to the above list of critical intakes, drainage officers have identified a number of intakes which they have classed as high priority. A list of these intakes has been inserted into the Appendix 2 of this plan. The list of critical and high priority intakes is continuously being reviewed to ensure resources are focused in the most at risk areas.

8.1.2 Conclusions from the flood risk maps

The flood risk map, when viewed at a county scale, provides a good indication of where flooding is known to be a problem, together with where it is likely to be a problem in severe conditions. It is evident from these maps that the hills and valleys of our county create natural channels and barriers; protecting some areas and threatening others.

The map indicates that the main areas of flood risk throughout the authority are situated near to ordinary water courses and at the point at which water enters an intake into a surface water culvert. This generally correlates with the knowledge that NPT's Drainage Officers have gained through investigations and years of experience. However it is believed that this risk is overstated as the capacity of the authority's surface water culverts was not incorporated into the flood modelling process prior to the preparation of the Updated Flood Map for Surface Water. Officers have identified the locations on the Updated Flood Map for Surface Water that is believed to have an over exaggerated flood risk. These locations are identified throughout this section of the report under each individual community and measures have been applied to improve understanding of the flood risk.

There are 149845 people occupying 63764 residential properties, with 132 services in Neath Port Talbot. Of these, 83693 people and 57 services are in a flood risk area.

There are significant areas of environmental designations in Neath Port Talbot; Special Areas of Conservation (SACs), Sites of Special Scientific Interest (SSSI), Areas of Scheduled Ancient Monuments, and parks and gardens. There is one bathing area on the coast that might be adversely affected by heavy rainfall. Over half of the Listed Buildings – 178 of the 388 - within the

County are within Flood Risk Areas. Five of the sixteen EPR Installations are also potentially at risk. Fortunately only a very small percentage of the extensive Sites of Special Scientific Interest are at risk: 3 of the 937 Hectares; Similarly, only 18 of the 123 Scheduled Ancient Monuments within the Borough are deemed at risk.

Out of the 16741 non-residential properties in the County Borough, 7154 are sited within Flood Risk Areas. There is a total of 951 hectares of agricultural land in the County. 214 hectares of this has a 1 in 100 (1%) or greater chance of flooding in any given year.

Significant lengths of road and railway infrastructure are also at risk; Fifty percent of the trunk roads through the County are shown to be at some degree of risk. While 35km of Mainline Railways, of the total 86km throughout the County, are similarly shown to be at risk.

Table 6: Whole County Property Count

Type of Risk	Totals For NPTCBC	Totals For Flood Risk Area
Risk to People		
Residential Properties		
~~Properties	63764	35614
~~People (multiplier 2.35)	149845	83693
Services	132	57
Risk to Economic Activity		
Non-Residential Properties	16471	7154
Airports	0	0
Motorway/Trunk Roads *km*	105	50
Mainline Railways *km*	86	35
Agricultural Land - Grades 1, 2 & 3 *ha*	951.00	214.00
Risk to Natural & Historic Environment		
Bathing Waters	2	1
Environmental Permitting Regulations (EPR) Installations	16	5
Special Areas of Conservation (SAC) *ha*	161.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00
Ramsar Sites *ha*	103.00	0.00
World Heritage Sites *ha*	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	937.00	3.00
Parks and Gardens *ha*	450.00	80.00
Scheduled Ancient Monuments *ha*	123.00	18.00
Listed Buildings	388	178
Licenced Abstractions (LA)	50	14

The counts representing flood risk from surface water in NPTCBC may be overstated as they also include properties, infrastructure and land at risk from river flooding.

8.1.3 County Wide Measures to Mitigate Flood Risk

The measures contained within Table 6, below, have been selected to reduce flood risk throughout the authority and in line with the four measure types identified by NRW of preparedness, prevention, protection and recovery and review. These measures have been applied to the forty two community areas within Neath Port Talbot, including those that fall outside of the indicative flood risk area. The authority understands that flood risk is not restricted just to the indicative flood risk area and has therefore evaluated the flood risk, and applied measures to all of its communities, ensuring a fair and equal approach to flood risk management throughout the authority.

Additional funding is required by the authority to allow for sufficient resources to fulfil legislative requirements and achieve the measures outlined below. If this funding is not forthcoming the authority is unlikely to be able to wholly fulfil the measures and communities will be at greater risk.

The time scales for implementing the measures below have been identified as either on-going and to continue until 2021, or for the life of this plan which is 2016-2021. The authority will strive to action all of the measures identified within the community areas over the life of this plan; however this will only be possible if sufficient resources are made available.

Table 7: County Wide Measures to Mitigate Flood Risk

Measure Code	**NPT01**
Measure Name	**Flood Warning Service**
Measure Description	Investigate how a flood warning service can be developed, employed, implemented. A feasibility study to establish whether the service can be linked into social media and if it is viable for flood risk warnings, severe weather warnings, etc.
Measure Type	**M41 - Flood forecasting and warning**; Measures to establish or enhance a flood forecasting or warning system **M43 - Public awareness and preparedness**; Measure to establish the public awareness or preparedness for flood events.
Measure Location	Any area within NPTCBC where there is a significant flood risk and people would benefit from having more information, earlier warning.
Objectives	1.0, 1.2, 2.0, 2.1, 2.2, 3.0, 3.2
Responsible Authority	NPTCBC
Time Scale	2016-2021

Progress of Implementation	Not started
Cost	Cost of NPTCBC staff time to carry out a feasibility study to establish where the service is required and how it can be communicated to those at risk.
Effect on Flood Risk	Residents will be informed prior to a flood event that there is potential for flooding of their properties. This would allow for them to prepare for the flood risk or even evacuate depending on the severity of the risk posed. Additionally the system would alert officers of potential flood events. It is difficult to give an exact figure for number of properties or infrastructure that would be at less a risk from flooding for this measure.
Measure Code	**NPT02**
Measure Name	**Survey Work** *This measure links to the Western Wales River Basin Management Plan local action – Tackle misconnections and urban diffuse pollution*
Measure Description	Locate, record and map every part of the county's drainage infrastructure. Identify how it combines with Dŵr Cymru Welsh Water systems and riparian systems. Record the physical details and condition of each component. Continuously update and maintain the Authority's Geographical Information System and Asset Records.
Measure Type	**M44 - Other preparedness**; Other measures to establish or enhance preparedness for flood events to reduce adverse consequences.
Measure Location	Borough Wide.
Objectives	1.0, 1.4, 2.0, 2.1, 2.2, 3.0, 3.3, 4.0, 4.1, 4.2
Responsible Authority	NPTCBC
Time Scale	2016-2021
Progress of Implementation	On-going
Cost	Cost of NPTCBC staff time to undertake the measure.
Effect on Flood Risk	Completing a drainage map of the county will allow a better understanding of where flooding may be likely, and why. With understanding comes the ability to improve maintenance and inspection programmes, reducing costs and improving resilience to flooding on a county wide scale. This measure will also aid in the improvement in quality of water bodies as set out under the Water Framework Directive as misconnections are identified.

Measure Code	**NPT03**
Measure Name	**Derive Hydrology for catchment.**
Measure Description	Carry out inspection and survey of catchment, watercourse, culverts and surface water drainage networks. Build hydraulic model from the information gathered through investigation and survey.
Measure Type	**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.)
Measure Location	Borough Wide.
Objectives	1.0, 1.2, 2.1, 2.2, 4.0.
Responsible Authority	NPTCBC
Time Scale	2016-2021
Progress of Implementation	Not Started
Cost	Cost of NPTCBC staff time to undertake investigations and build hydraulic models. Specialist contractors may be required for certain locations. It is expected that the associated costs will vary depending on the size and characteristics of the catchment and location.
Effect on Flood Risk	The hydrological/hydraulic study will not directly reduce flood risk but will indicate if the flood risk has been overstated. Further measures may be identified as a result of the study.
Measure Code	**NPT04**
Measure Name	**Carry out investigation of accumulations of surface water.**
Measure Description	Investigating areas identified by the flood risk maps as being at a high level of flood risk. Understanding the specific sources of flood risk within these areas and identifying measures to mitigate the risk if it is validated by the investigation.
Measure Type	**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.)
Measure Location	At locations throughout the borough where the Updated flood maps for surface water identify areas affected by accumulations of flood water.
Objectives	1.0, 1.2, 1.4, 2.0, 2.1. 2.2, 3.0, 4.0.
Responsible Authority	NPTCBC
Time Scale	On-going and to continue until 2021

Progress of Implementation	On-going and to continue until 2021
Cost	Cost of NPTCBC staff time to carry out the investigations.
Effect on Flood Risk	Whilst this measure will not directly reduce flood risk, it will help to validate the accuracy of the flood maps and highlight any measures to reduce the flood risk moving forward.

Measure Code	**NPT05**
Measure Name	**Flood Asset Inspections**
Measure Description	Developing a structured inspection programme to be carried out by officer's separate to regular maintenance regimes. Detailed inspections to be carried out will involve identifying the general condition of the flood structure/feature and making recommendations based on the outcomes.
Measure Type	**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.)
Measure Location	Throughout the borough - Assets that are located throughout the borough that are classified as having a significant impact on flood risk e.g. High priority culvert grids.
Objectives	1.0, 1.2, 1.4, 2.1, 2.2, 4.0.
Responsible Authority	NPTCBC
Time Scale	A cyclic inspection programme on a continuous yearly basis.
Progress of Implementation	Not started
Cost	Officers' time dedicated to undertaking the inspection programme. Cost will depend on the number of structures/features that are included in the programme. It is thought this number will continually increase as measure NPT02 (Survey Work) is implemented.
Effect on Flood Risk	Whilst this measure will not directly reduce flood risk, it will allow officers to build up a database of the condition of significant flood defence feature/structures and highlight any measures to reduce the flood risk moving forward.

Measure Code	**NPT06**
Measure Name	**Flood Asset Maintenance** *This measure links with the Western Wales River Basin Management Plan physical*

	modifications measure – Identify opportunities to improve the water environment through existing programmes of maintenance and scheme designs for flood risk management.
Measure Description	Scheduling and undertaking the maintenance of NPTCBC's flood defence and conveyance assets. This will involve activities such as grid cleansing, de-silting and channel clearance to allow for the drainage systems to work at maximum capacity. Scheduling the maintenance regime will ensure those areas most at risk are prioritised to minimise the flood risk.
Measure Type	**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.) **M35 - Other protection;** Other measures to enhance protection against flooding, which may include flood defences, asset maintenance programmes or policies. On-going maintenance.
Measure Location	Throughout the borough - Assets that are located throughout the borough that are classified as having a significant impact on flood risk e.g. High priority culvert grids, ditches, gullies.
Objectives	1.0, 1.2, 1.4, 2.2, 3.0, 3.2, 3.3, 4.0.
Responsible Authority	NPTCBC
Time Scale	A cyclic maintenance programme that will be on-going
Progress of Implementation	On-going
Cost	Operative's time dedicated to undertaking the maintenance programme. This cost is covered by the normal funding received from Welsh Government. Officer's time dedicated to prioritising and scheduling the assets identified as being in areas at significant flood risk, by the Flood Risk and Hazard maps. Continuous monitoring of the maintenance programme is essential ensure the success of the measure.
Effect on Flood Risk	Maintaining the county's flood defence assets will ensure the clear passage for water to enter underground drainage systems i.e. culverts. This will mitigate the flood risk illustrated by the flood maps which were unable to incorporate underground conveyance structures into the flood model.
Measure Code	**NPT07**
Measure Name	**Liaison with Owners of Significant Flood Assets**

Measure Description	Establish contact with land owners where flood defence assets are situated including, but not limited to, riparian owners, DCWW, Network Rail, SWTRA and various Canal Companies. Agree maintenance and inspection regimes for the assets so that there are no choke points in the system.
Measure Type	**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.) **M35 - Other protection;** Other measures to enhance protection against flooding, which may include flood defences, asset maintenance programmes or policies. On-going maintenance programme.
Measure Location	Throughout the borough where flood defence assets are not the responsibility of NPTCBC as the LLFA for the area.
Objectives	1.0, 1.2, 1.4, 2.2, 3.0, 3.2, 3.3, 4.0.
Responsible Authority	NPTCBC and other various land/asset owners.
Time Scale	2016-2021
Progress of Implementation	On-going
Cost	Officers' time dedicated to establishing contact with land owners, meeting on site and agreeing maintenance and inspection programmes.
Effect on Flood Risk	Establishing the owners of significant flood assets and ensuring the maintenance of those assets will ensure the unobstructed flow of water through those drainage systems. Implementing this measure will reduce the number of properties, infrastructure and environmental sites at risk as identified by the flood risk maps as water will be able to flow into underground conveyance systems not factored into the model.

8.1.4 Measures that are currently being implemented by NPTCBC to manage flood risk.

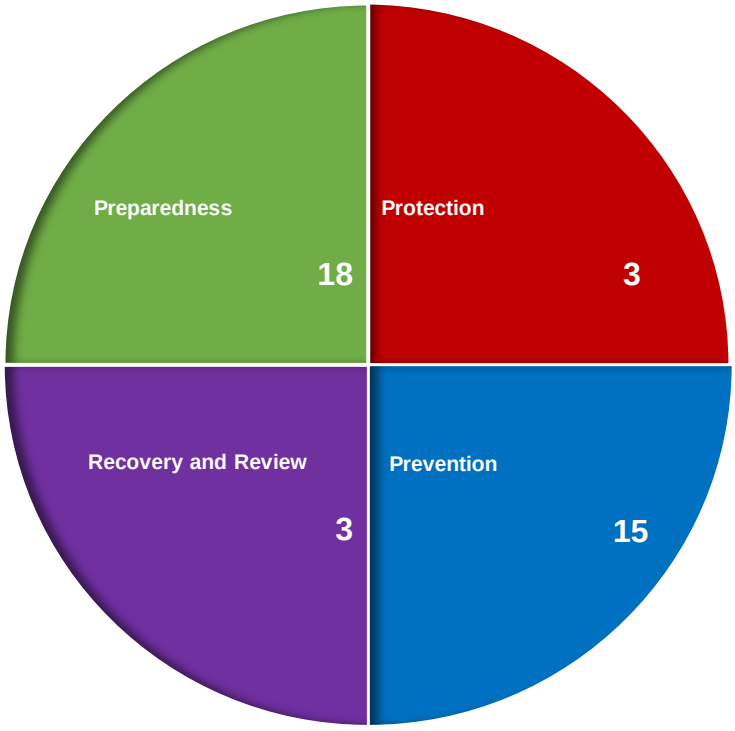
These measures are taken from the Local Flood Risk Management Strategy. For the full details of these measures please refer to the strategy document.

Code	Measure	Type	Objective
NPT08	Development of a toolkit by the LLFA to assist in raising community awareness and preparation for flood and coastal erosion risk.	M43	1.1
NPT09	The delivery of the appropriate implications of the 2nd round of SMP with proportionate implementation over the life of the Strategy.	M24	1.2
NPT10	Development of Local Flood Risk Management Strategies.	M43	
NPT11	Implementation of the statutory responsibilities including those set out within the Flood and Water Management Act 2010 and the Flood Risk Regulations. To be achieved by the end of 2013 with the majority of strategies to be implemented by 2017.	M24	
NPT12	The provision of mapping of all sources of flooding.	M24	
NPT13	Proportionate implementation of the CFMPs over the life of the Strategy.	M44	
NPT14	Development of Local Development Plans including adequate provisions in respect of flood and coastal erosion risk.	M21	1.3
NPT15	Compliance to the requirements of Planning Policy Wales and relevant Technical Advice Notes. This is an on-going action to be carried out by the Local Planning Authorities.	M21	
NPT16	Provision of appropriate advice on local flood and coastal erosion risk in relation to planning applications.	M24	
NPT17	Appropriate undertaking of Strategic Flood Consequence Assessments and their use to inform Local Development Plans. This is an on-going process carried out by the Local Planning Authority.	M21	
NPT18	Approval and implementation of SuDS drainage systems by the SuDS Approving and Adopting Body. *This measure links to the Western Wales River Basin Management Plan, manage pollution from towns, cities and transport measure – development*	M34	

	of SUD's Approving Bodies to provide consistent advice for planning activities and maintenance of schemes.		
NPT19	Provision of advice and guidance on appropriate land use management. *This measure links to the Western Wales River Basin Management Plan local action – Dredging and silt management including reducing siltation at source through land management.*	M21	
NPT20	Development of a register and designation of natural and manmade structures/features which are likely to have an effect on flood risk by 2014. This is on-going and is to be carried out by the LLFA.	M24	1.4
NPT21	Review the programme of regular and appropriate maintenance for flood and coastal flood risk management assets, implemented by the Risk Management Authorities.	M24	
NPT22	Programme of community based awareness and engagement activities utilising the Flood Risk Management Engagement Toolkit. To be undertaken from 2012 and delivered by Natural Resources Wales and the LLFA.	M43	2.1
NPT23	Affected groups and vulnerable individuals to be identified within the flood affected area by 2017 by the LLFA.	M44	
NPT24	Ensure property level flood resilience measures and the requirements for SuDS are incorporated into Building Regulations.	M44	2.2
NPT25	Enhanced awareness of property level resilience measures and guidance on their use.	M42	
NPT26	Development of a sustainable methodology for funding individual property level resilience measures.	M42	
NPT27	Provision of appropriate warnings in relation to all sources of flooding.	M41	
NPT28	Complete emergency plans for all significant sources of flood risk.	M41	3.1
NPT29	Development of local level emergency plans with Community/Town Councils.	M43	
NPT30	Pan-Wales emergency exercises to test response and recovery arrangements by 2016.	M42	
NPT31	Local level emergency exercises to test response and recovery arrangements over the life of the Strategy.	M42	
NPT32	Early and appropriate response to emergency events.	M41	3.2

NPT33	Development and implementation of effective evacuation protocols for emergency events.	M42	
NPT34	Development of mutual aid protocols for resources, equipment and respite for emergency events.	M42	
NPT35	Respite accommodation is to be identified and provided throughout the life of the Strategy by the Local Authority.	M51	
NPT36	Development of procedures by the LLFA for the effective clearance of debris.	M51	3.3
NPT37	Development of repair schedules including provision for the installation of resilience measures by the LLFA.	M52	
NPT38	Ensure procedures are in place to investigate, where warranted, the cause of flooding within one month of the occurrence of a flooding event by the LLFA.	M53	

8.1.5 Number of County Wide Measures within Each Category set out by NRW



8.1.6 Funding

To plan, produce and implement the FRMP it is essential that funding be put in place for the local authority to be able to generate the required document. Ring fenced funding was made available for the financial years up until 2015. This funding was put in place to produce the PFRA and the LFRMS in addition to this document, not excluding the duties and responsibilities placed upon this authority under the Flood and Water Management Act and Flood Risk

Regulations. This funding was also to finance the implementation of some of the measures identified within the LFRMS and this report.

It is envisaged that future funding will be provided by the Welsh Government for the continued implementation of the responsibilities incumbent on the LLFA from the Flood Risk Regulations and The Flood and Water Management Act.

Public Funding

Community Infrastructure Levy

The Community Infrastructure Levy was introduced in April 2010 and provides local authorities with an alternative source of potential funding for flood defence schemes. It allows the borough to raise funds from new developments in their area in order to pay for the impact that the development may have on the local infrastructure. Consideration for use of this levy is in the development process within NPTCBC.

European Funding

E.U. funding is available through the Interreg scheme, grant funding and in schemes resulting from these reports that may inform future proposals for the European Regional Development Fund.

Private Funding

Section 106 funding – Developer Contributions

Section 106 of the Town and Country Planning Act 1990 allows the local authority, in this case Neath Port Talbot County Borough Council, to agree conditions in association with a planning application. These conditions may include, but are not limited to, restrictions in the uses of the land, the type of property that may be developed and the levying of a cost to be paid to the authority as a one off or as a regular payment.

Such funding is agreed in advance and can be used to address any affected council service – e.g. highways, footways, drainage, public lighting, etc.

Welsh Water Funding

Welsh Water invest in flood alleviation schemes in order to remove properties from the DG5 register, a register of properties at risk from sewer flooding, which is one aspect of their duties. They can do this in partnership with local authorities like Neath Port Talbot.

WG Funding initiatives

WG have a long standing funding pot for the larger schemes (£1m) with local authorities expected to match fund 15% of the value of the scheme (having gone through a set approval process with WG including provision of a PAR as

referred to in some of the ward information). It must be noted that authorities are finding it increasingly challenging to identify match funding for the larger schemes with the limited capital funds available are being used to fund smaller drainage schemes (£20-30k).

Other WG funding initiatives include the LGBI (Local Government Borrowing Initiative) which has part funded Phase 1 of the recently completed Pentwyn Culvert Flood Relief Scheme).

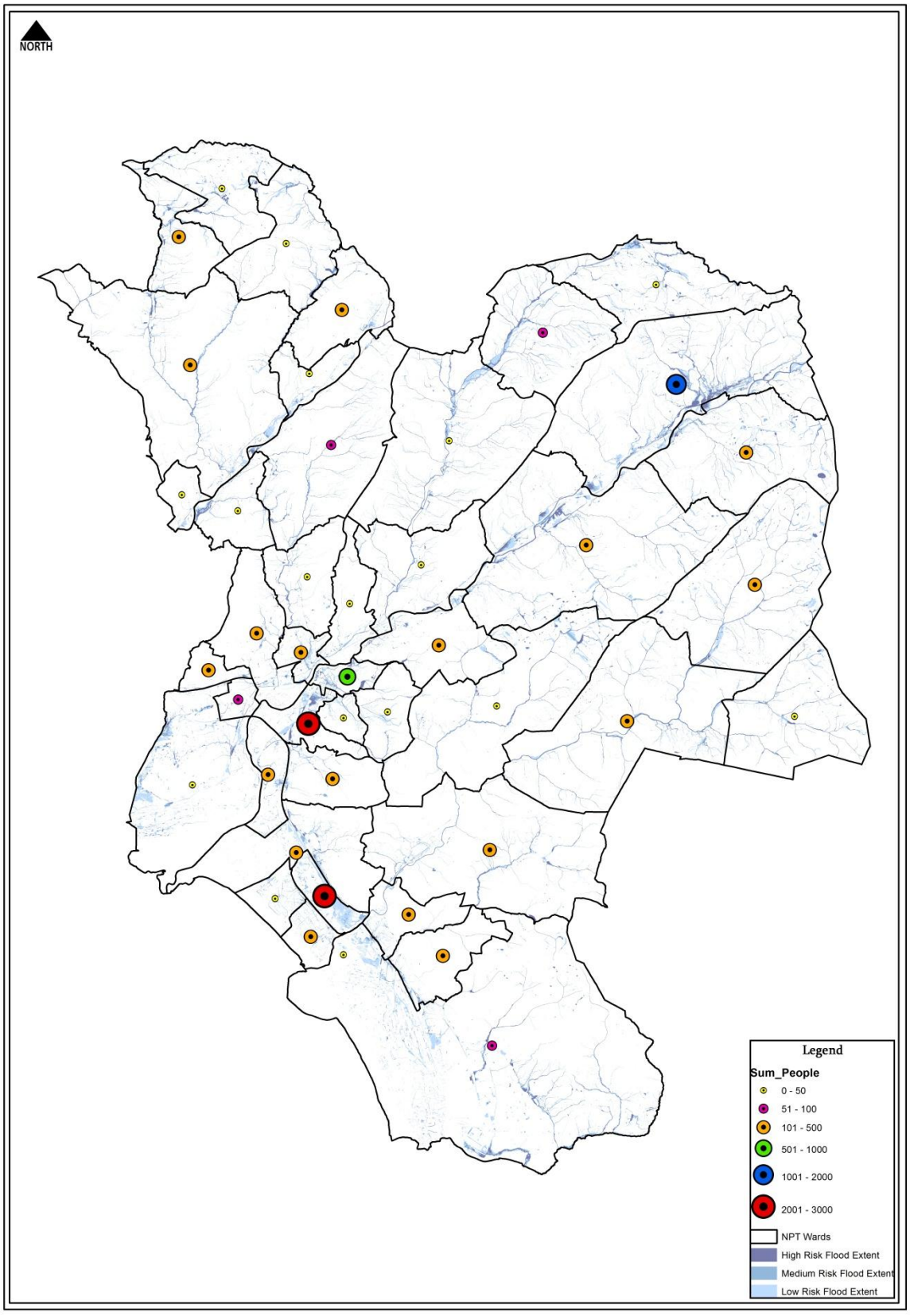


Figure 5: Flood Risk Map - Risk to People

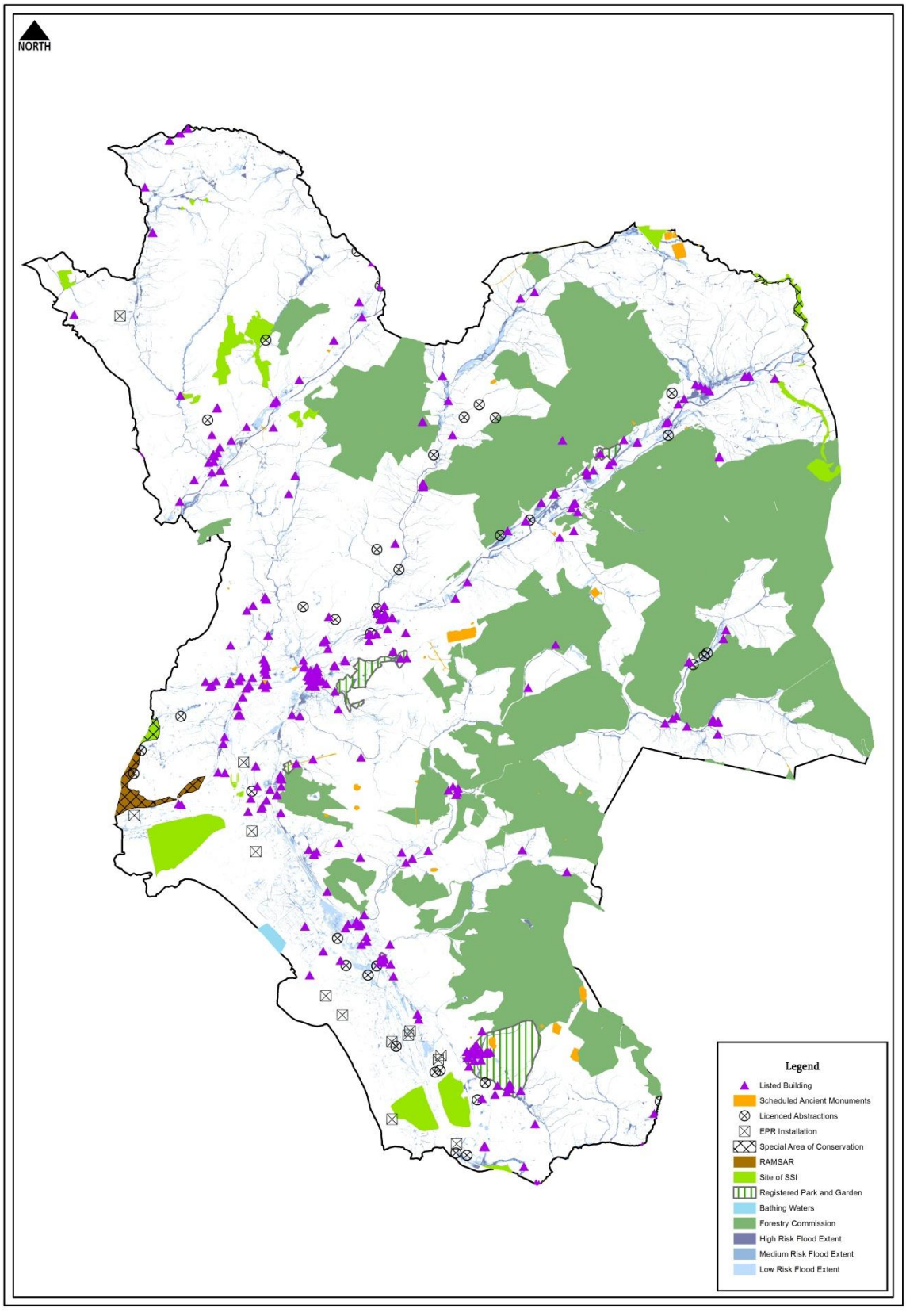


Figure 6: Flood Risk Map - Risk to Environment

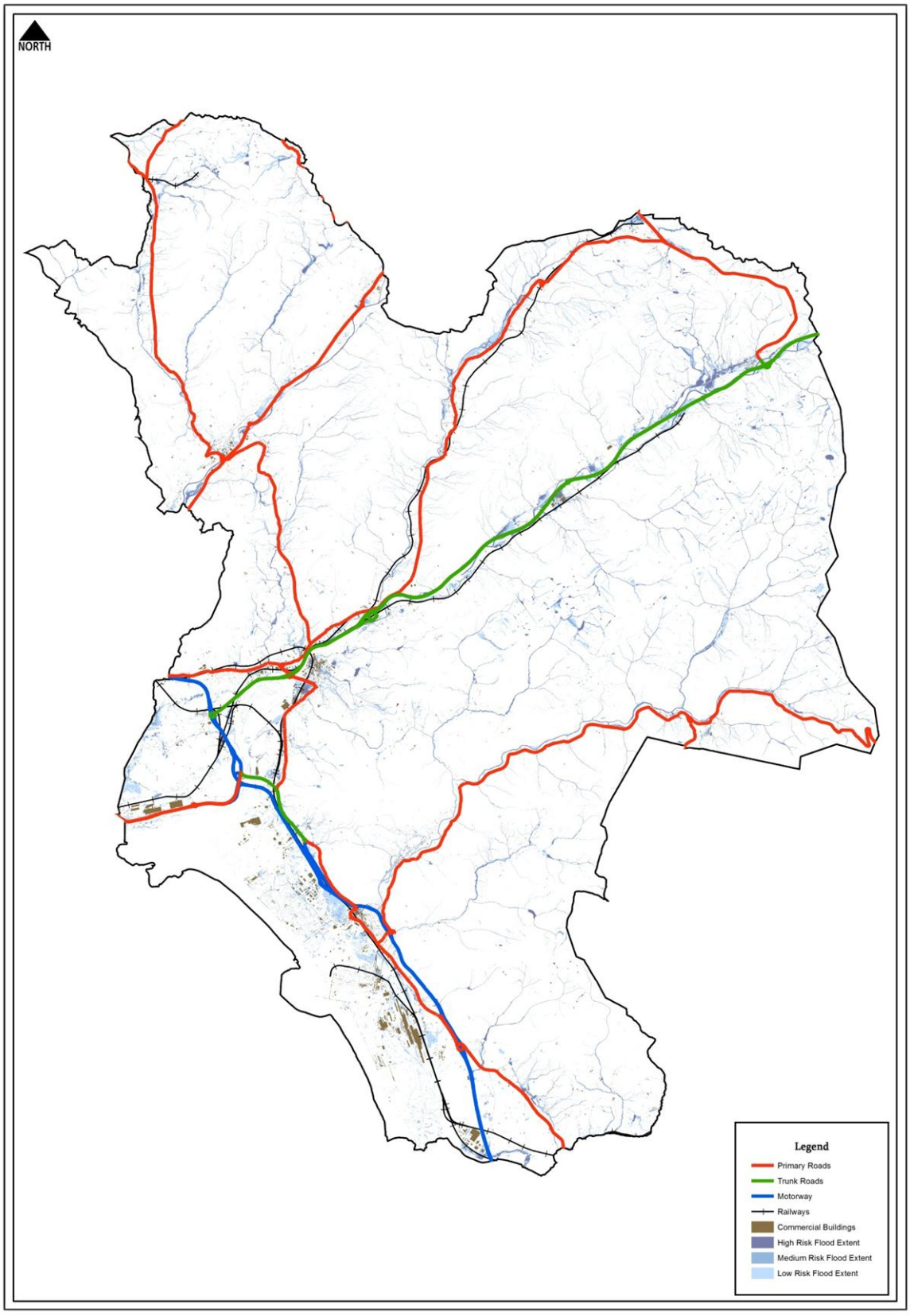


Figure 7: Flood Risk Map - Risk to Economic Activity

9.0 Public Consultation

9.1 Consultation Period

A consultation period of six weeks will be held so that our Flood Risk Partners can comment on this Flood Risk Management Plan. The consultation period will be held between September 21th and November 2nd 2015.

The following Flood Risk Partners will be invited to comment on the draft Flood Risk Management Plan:

- All Risk Management Authorities
- All NPTCBC employees
- Members of the public

Attempts will be made to engage with the above through the following:

- Ensuring the plan is easily visible and accessible on the Authority's internet page
- Ensuring the plan is easily visible and accessible on the Authority's internal internet page
- Through social media networks
- Four hard copies of the document will be strategically placed throughout the Borough in council offices based in Pontardawe, Neath, Baglan and Port Talbot.

9.2 Method of Consultation

The draft Flood Risk Management Plan will be published on the Authority's web page prior to the commencement of the consultation period. A facility allowing our Flood Risk Partners to comment on the document will also be made available. All Flood Risk Partners are encouraged to respond to the consultation and make comments on the document with the Risk Management Authorities being encouraged to provide a more in depth response.

All responses that are received during the consultation period will be incorporated into a spread sheet and will be reviewed by officers for comment. Any response which identifies a potential change in the document will be considered and the consequent change will be made if relevant. The spread sheet will then be published on the Authority's web page approximately 12 weeks after the close of the consultation period.

9.3 Consultation with Flood Risk Management Authorities

Natural Resources Wales

There has been significant interaction and collaboration between NPTCBC and NRW through the South West Wales Flood Risk Management Group and the Flood Risk Management Plan Working Group. Attendance to all scheduled meetings has been achieved by both parties providing opportunities for continued collaborative working.

Welsh Government

There has been collaboration with Welsh Government through attendance at the South West Wales Flood Risk Management Group and the Flood Risk Management Plan Working Group.

Dŵr Cymru Welsh Water

NPTCBC have held quarterly meetings with DCWW to discuss the progress of the FRMP along with any other areas where partnership working is a possibility. During each of these meetings DCWW provide the Authority with updated details of their network. Both organisations also meet regularly through the South West Wales Flood Risk Management Group.

9.4 Result of the Public Consultation

The Consultation period was concluded with a total of eight responses in the feedback/ comments. Two members of the public registered their details but did not leave any comments. Five left queries and comments which were not relevant to the consultation on the report, and as such will be dealt with directly and separately from the FRMP by the drainage team as routine enquiries.

NRW feedback does directly refer to the content of the report and its relevance and conformance with the template and legislative requirements. Each point has been addressed and the detail of these can be found within Appendix 6 – Consultation Feedback.

10.0 Monitoring and Review

This Flood Risk Management Plan must be reviewed by National Resources Wales prior to the publication of the River Basin Flood Risk Management Plans in December 2015.

The first full review of this document will be carried out by no later than 22nd June 2021 and subsequent reviews will then be carried out at six year periods.

On completion of the review, NPTCBC will prepare an updated FRMP that will include an assessment of the progress of implementation of the measures set out within the FRMP. A review to identify the reasons behind any measures which have failed to be implemented during the life cycle of this FRMP will also be undertaken.

Following the publication of this FRMP, a yearly internal review will be undertaken by NPTCBC to establish the progress being made in the implementation of the measures.

In order for this FRMP to be successful it is essential that significant additional funding be made available to NPTCBC on top of normal funding arrangements from Welsh Government. Failure to receive this additional funding may result in measures selected within this plan to achieve the objectives, not being implemented either in part or in full.

11.0 Appendices

Appendix 1 – Community Flood Risk Areas

Appendix 2 – Analysing Data

Appendix 3 – High Priority Culvert Inlets

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

Appendix 5 – Project Appraisal Reports

Appendix 6 – Consolation Feedback

Community Flood Risk Areas

11.1 Aberavon

11.1.1 Aberavon Area of Flood Risk

Aberavon is a ward in the town of Port Talbot. The ward covers the south and central area of the town. The River Afan bounds the area to the South West and the Baglan Brook skirts the Northern edge.

Aberavon covers an area of 225 hectares, and is primarily residential and commercial. A population of approximately 5,300 people live within the ward. Neath Port Talbot Hospital is located within the ward. This is a secondary care NHS hospital and the main medical facility serving the county.

11.1.2 Conclusions from the Flood Extent Map

As the extent maps show, large areas of Aberavon are at risk of flooding, though the majority fall into the low risk category. This is primarily because of the low lying nature of much of the area. The counts reflect the flood risk from surface water but the high risk numbers may be overstated as they include properties also at risk from river flooding, the plan also cannot account for the highly permeable nature of the area as it is primarily built on sand. Recent flood events occurred at times when high rainfall events coincided with higher than average tides, which suggest the tidal nature of the water table will affect the risk of flooding.

11.1.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Aberavon. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Baglan Way Ditch – An Important link in the drainage infrastructure for the area, partly riparian ownership: Establish contact with landowners and ensure regular maintenance. **See Measures NPT06 & NPT07. Measure type: M24, M35**

Dunraven Street / Corporation Road / Marsh Street - Welsh Water combined system with a history of flooding; Liaise with Welsh Water to ensure future inspection and maintenance. **See Measure NPT07. Measure type: M24, M35**

Port Talbot Civic Centre – Extent map unsubstantiated by past events – no history of flooding. **See Measure NPT04. Measure type: M24**

M4 culvert near Sunnycroft Roundabout – SWTRA owned: Critical link in the Pentwyn drainage network which drains a large percentage of the community. Continued liaison with SWTRA. **See Measures NPT07. Measure type: M24, M35**

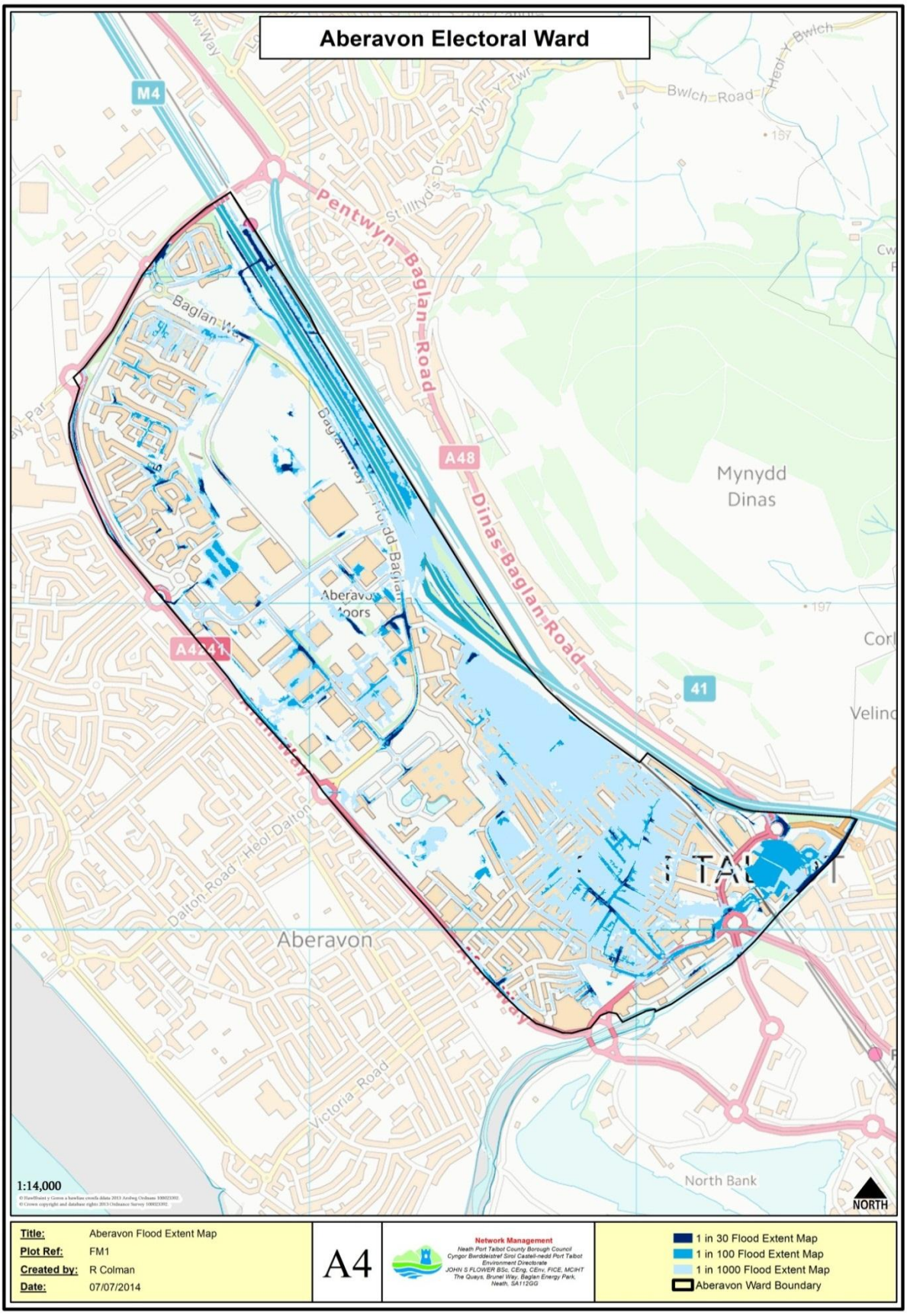


Figure 8: Aberavon Flood Extent Map

Table 8: Aberavon Property Count

Risk Area - Aberavon	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	2597	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	1320	1241	74	5
People (multiplier 2.35)	3102	2916	174	12
Residential Properties at Risk of Flooding (200 mm Depth)	1092	1051	40	1
People (multiplier 2.35)	2566	2470	94	2
Services	7	3	0	0
Risk to Economic Activity				
Non-Residential Properties	603	151	83	2
Airports	0	0	0	0
Motorway/Trunk Roads *km*	4.27	0.55	0.00	0.01
Mainline Railways *km*	1.22	0.05	0.01	0.01
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	5	1	0	1
Licenced Abstractions (LA)	0	0	0	0

11.2 Aberdulais

11.2.1 Aberdulais Area of Flood Risk

Aberdulais lies on the banks of the River Neath. The village is also at the confluence of the Dulais and Neath Rivers, Aberdulais falls are a National Trust site. The basin is also the meeting point of the Neath and Tennant Canals. The Dulais falls have also long held a historic hydro-electric water wheel and more recently this has been renovated and a new company maintains and runs it as a renewable energy supply.

Aberdulais covers an area of 955 hectares, the majority of which is rural upland. A population of approximately 2000 people live within the ward. The population is focussed in the south-west, in the villages of Aberdulais and Cilfrew.

11.2.2 Conclusions from the Flood Extent Map

The flood extent map indicates that for the most part in Aberdulais the risk is from fluvial flooding, although there are some small areas of high risk that appear to be pluvial. With the confluence of two rivers and the canal in close proximity it is unsurprising that the likelihood of flooding is in areas close to these factors. Natural Resources Wales maintain the Dulais River as a main watercourse.

11.2.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Aberdulais. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Flood extent map indicates small watercourse flooding which may exaggerate the risk in these areas. **See Measure NPT04. Measure type: M24**

Ty-Draw Culvert: Monitor/ Inspect – consider for priority listing. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Penscynor Culverts: Consider for priority listing. One is Riparian - establish communication with landowner to ensure future inspection and maintenance schedule. **See Measures NPT05, NPT06 & NPT07. Measure type: M24, M35**

Cilfrew to Crynant (C182) – There are several problematic structures along this extent of adopted highway. Continue inspection and maintenance. **See Measures NPT05 & NPT06. Measure type: M24, M35**

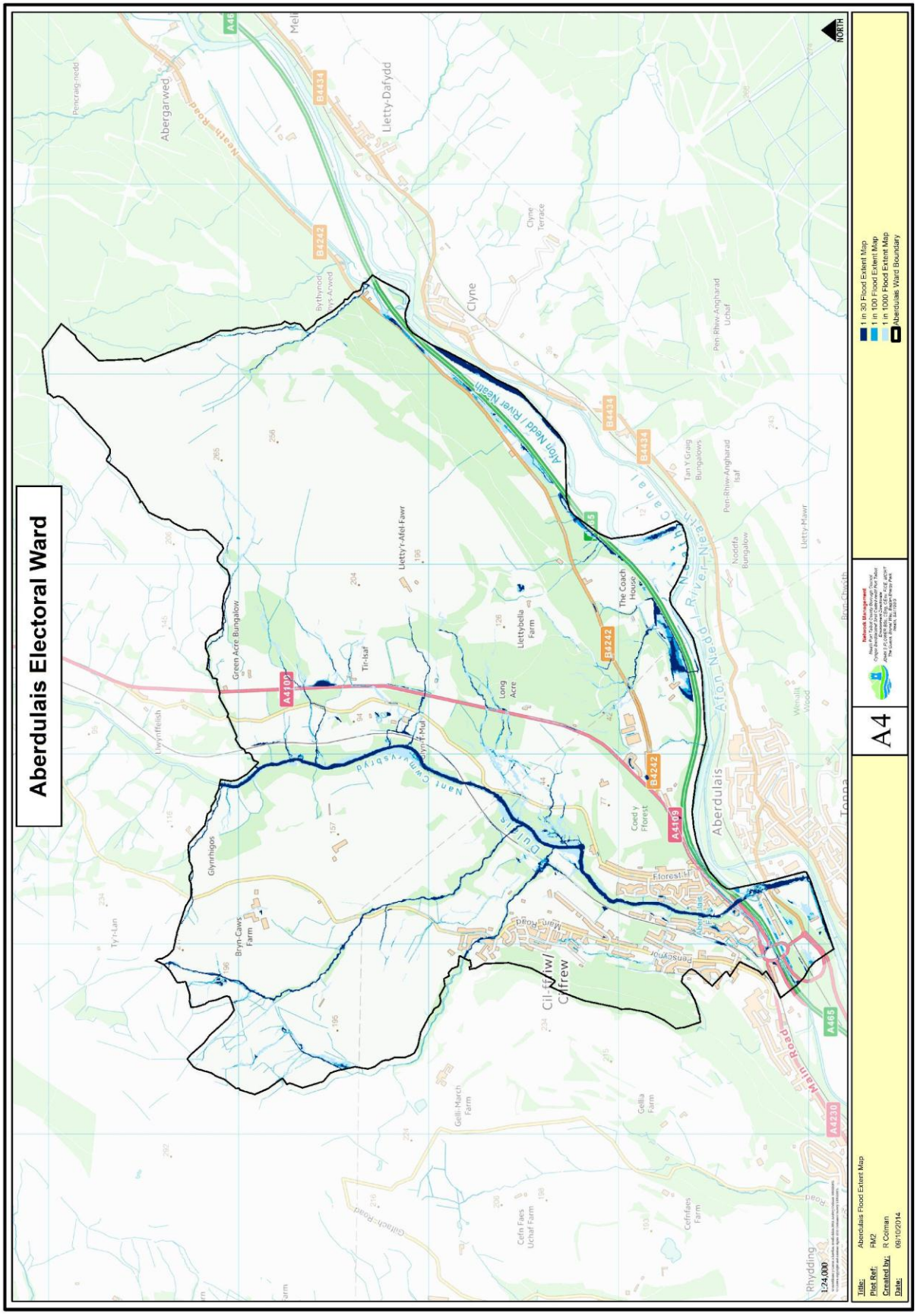


Figure 9: Aberdulais Flood Extent Map

Table 9: Aberdulais Property Count

Risk Area - Aberdulais	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	981	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	18	13	4	1
People (multiplier 2.35)	42	31	9	2
Residential Properties at Risk of Flooding (200 mm Depth)	7	4	2	1
People (multiplier 2.35)	16	9	5	2
Services	1	0	0	0
Risk to Economic Activity				
Non-Residential Properties	282	13	1	2
Airports	0	0	0	0
Motorway/Trunk Roads *km*	10.26	0.40	0.16	0.11
Mainline Railways *km*	3.80	0.42	0.07	0.18
Agricultural Land - Grades 1, 2 & 3 *ha*	139.27	8.89	3.72	6.31
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.36	0.04	0.02	0.02
Listed Buildings	11	1	1	1
Licenced Abstractions (LA)	3	0	0	2

11.3 Alltwen

11.3.1 Alltwen Area of Flood Risk

Alltwen is a village overlooking Pontardawe in the Swansea Valley. It covers and area of 438 hectares and has a population of approximately 2,500. The ward boundary with Pontardawe is defined in part by the Tawe River. The village and the vast majority of the properties within the ward are substantially elevated above the river and are not likely to be affected by river flooding.

11.3.2 Conclusions from the Extent Map

The flood extent map indicates that aside from the fluvial risks there are a small number of properties at risk; it is worth investigating to see whether this risk is real and if so, whether the extents are accurate.

11.3.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Alltwen. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Investigate any areas identified by the flood extent map as having accumulations of flood water. **See Measure NPT04. Measure type: M24**

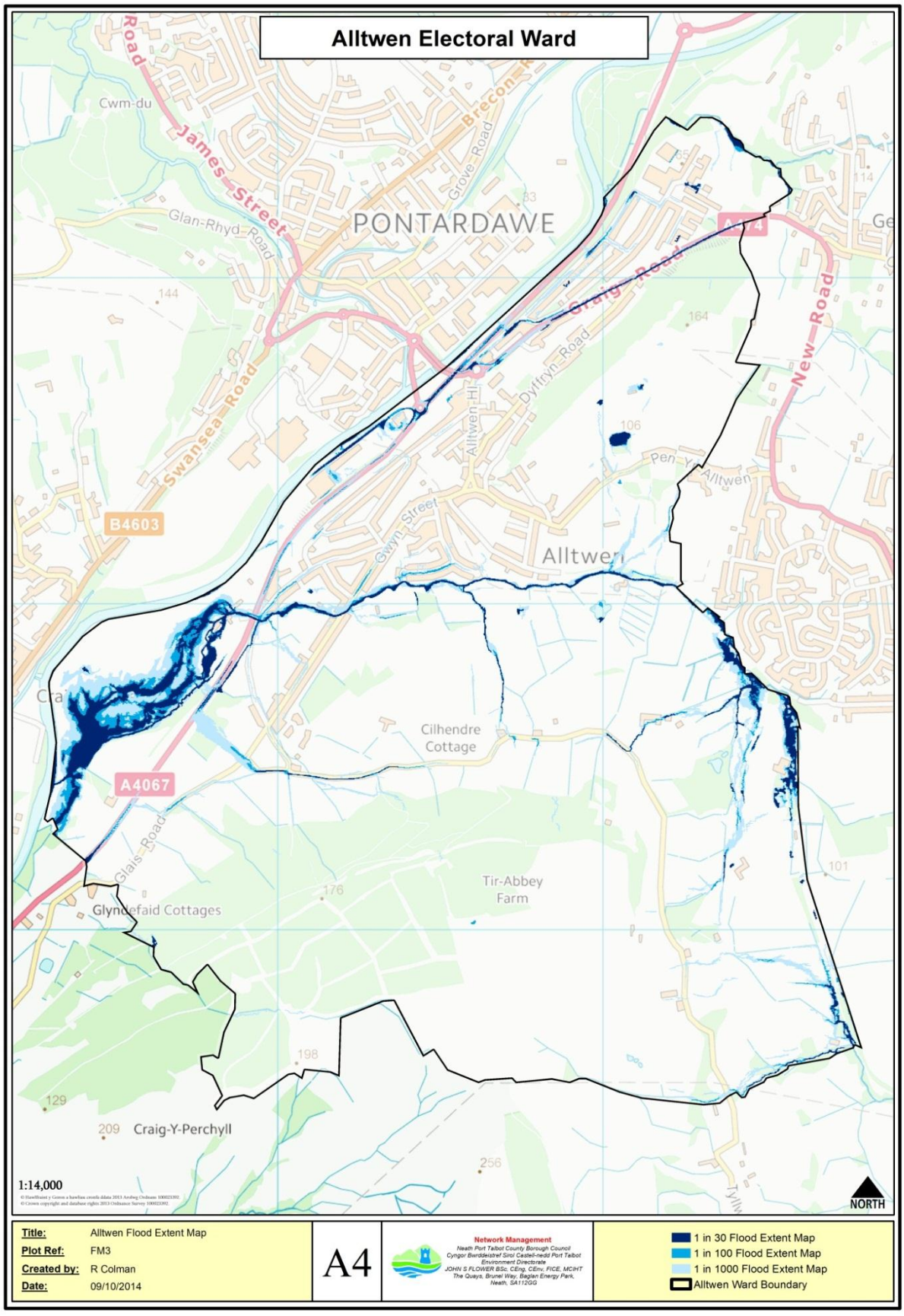


Figure 10: Alltwen Flood Extent Map

Table 10: Alltwen Property Count

Risk Area - Alltwen	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	982	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	23	22	1	0
People (multiplier 2.35)	54	52	2	0
Residential Properties at Risk of Flooding (200 mm Depth)	4	4	0	0
People (multiplier 2.35)	9	9	0	0
Services	1	0	0	0
Risk to Economic Activity				
Non-Residential Properties	257	11	3	4
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	36.97	5.51	3.07	5.34
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.04	0.00	0.00	0.00
Listed Buildings	2	1	0	0
Licenced Abstractions (LA)	0	0	0	0

11.4 Baglan

11.4.1 Baglan Area of Flood Risk

Baglan ward covers an area of 905 hectares and lies between Briton Ferry and Port Talbot. It comprises two distinct areas, the hillside is largely suburban residential, while the lower lying coastal area is newly redeveloped as commercial and light industry. Adjacent to the coastline sits the Baglan Bay gas turbine power station. A 525 mega watt combined cycle gas turbine power station, built on the site of the former BP chemicals plant. The ward is bounded, in part, by the Neath River to the west, the sea to the south-west and the Baglan Brook watercourse passes through the middle. The population is approximately 6,700, most of which live on the inclined areas overlooking the bay area, however a strip at the base of the hillside is relatively flat and low-lying and has some flooding history. The Baglan Brook is culverted in several sections, which has caused some issues in the past.

11.4.2 Conclusions from the Flood Extent Map

Baglan appears to be especially at risk from flood events. The areas illustrated by the flood extent maps generally correspond with the knowledge of the drainage team that has been built up over years of experience.

11.4.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Baglan. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Baglan Brook Ditch (parallel to M4: R/About – Sunnycroft). Subject of a P.A.R. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Pentwyn Culvert is a very important part of the local infrastructure: (Improvement scheme/ Flood Prevention Initiative in progress). Continuous

maintenance and inspection upon completion. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Willow Way Culvert Inlet & Baglan Brook Culvert inlet – same system: very important link in the local system, leads to Baglan Brook Ditch. **See Measures NPT05 & NPT06. Measure type: M24, M35**

SWTRA & Network Rail maintain culverts that are critical links in the Pentwyn System. Continued liaison with relevant parties. **See Measure NPT07. Measure type: M24, M35**

Sunnycroft Area forms a choke point in the local system – everything from Baglan has to pass through Welsh Water pumping station. Continued liaison with relevant parties. **See Measure NPT07. Measure type: M24, M35**

Glan Hafren inlet – recent flood event reflected the projected flood extents on the map. Potential for a flood alleviation scheme identified – Gully maintenance important in this area. **See measure NPT06. Measure type: M24, M35**

Hawthorne Avenue – Inlet *HIGH* priority, start of Baglan Brook system. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Cherry Grove Inlet - *HIGH* priority - top of system (Recent flood event reflected flood extent map prediction). **See Measures NPT05 & NPT06. Measure type: M24, M35**

Maintenance of inlets in Baglan Park *LOW* level importance. **See Measure NPT06. Measure type: M24, M35**

Heol y Nant - Investigate to locate outfall (Pant-yr-Arian Lane). **See Measure NPT02 & NPT04. Measure type: M24, M44**

Solar Pumping station *CRITICAL* infrastructure (Surface Water Pumping Station) Clears the Baglan Industrial Park. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Fairwood Drive & Elmwood Drive Flood risk - Investigation and maintenance required. **See Measures NPT04 & NPT06. Measure type: M24.**

Pinewood Terrace flood extents covered by SWTRA/A48 drainage system. **See Measures NPT06 & NPT07. Measure type M24, M35**

Burrows Rd requires continued maintenance and inspection. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Historical incident at Thorney Rd, Baglan – Surface water affecting properties. **See Measure NPT06. Measure type M24, M35**

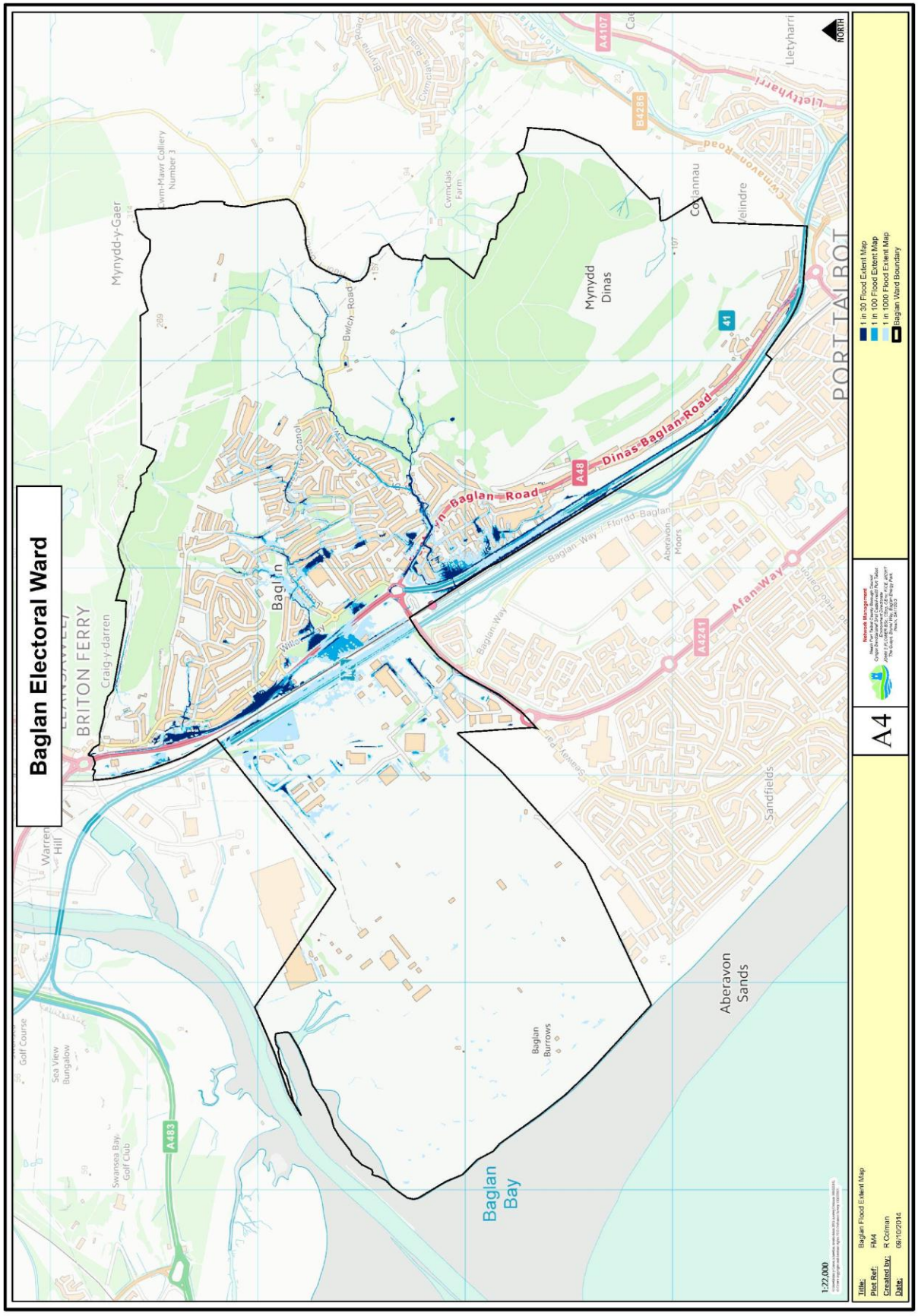


Figure 11: Baglan Flood Extent Map

Table 11: Baglan Property Count

Risk Area - Baglan	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	3077	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	363	226	91	46
People (multiplier 2.35)	853	531	214	108
Residential Properties at Risk of Flooding (200 mm Depth)	199	105	67	27
People (multiplier 2.35)	468	247	157	63
Services	4	0	0	0
Risk to Economic Activity				
Non-Residential Properties	463	27	9	9
Airports	0	0	0	0
Motorway/Trunk Roads *km*	11.04	3.40	0.93	1.03
Mainline Railways *km*	2.77	0.04	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	1	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	1.13	0.01	0.00	0.00
Listed Buildings	7	1	0	1
Licenced Abstractions (LA)	0	0	0	0

11.5 Blaengwrach

11.5.1 Blaengwrach Area of Flood Risk

Blaengwrach ward covers an area of 1,490 hectares on the eastern boundary of the county, a predominantly upland area containing three of the boroughs highest mountains. With a population of approximately 2000 people, Blaengwrach has a very low population density. It is bounded to the north-west by the River Neath and contains several watercourses from source to their joining the Neath river. The Nant Gwrach flows through the middle of the only residential area in the ward made up of Cwmgwrach and Blaengwrach.

11.5.2 Conclusions from the Flood Extent Map

Blaengwrach lies alongside the river that defines this valley and a spur that runs roughly parallel to the main body. It is also adjacent to the canals that were born of the industry that built this community. In addition, there are two significant streams that descend from the hills and valleys sides to join the river. All of these water courses are going to have an impact when there are significant rainfall events in the area. It is evident that the lower lying parts of the housing estates and the ones adjacent to the confined parts of the watercourses are most likely to be affected by flood events. This can be seen where the Nant Gwrach is confined as it passes through the Southerly parts of the village on its way to the Neath river, limited by the walls it can only rise and inundate the adjacent gardens and properties. Nant Gwrach is the responsibility of the N.R.W..

Similarly on the North side of the A465, at the site of the leisure centre and the surrounding housing, due to the low lying terrain and the number of watercourses in close proximity, it is likely that this will be affected by excessive rainfall and rising water levels.

11.5.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Blaengwrach. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Further investigation is required to deduce why the waters are likely to rise in the highlighted areas and what maybe done to reduce this risk and minimise the potential flooding. **See Measure NPT04. Measure type: M24**

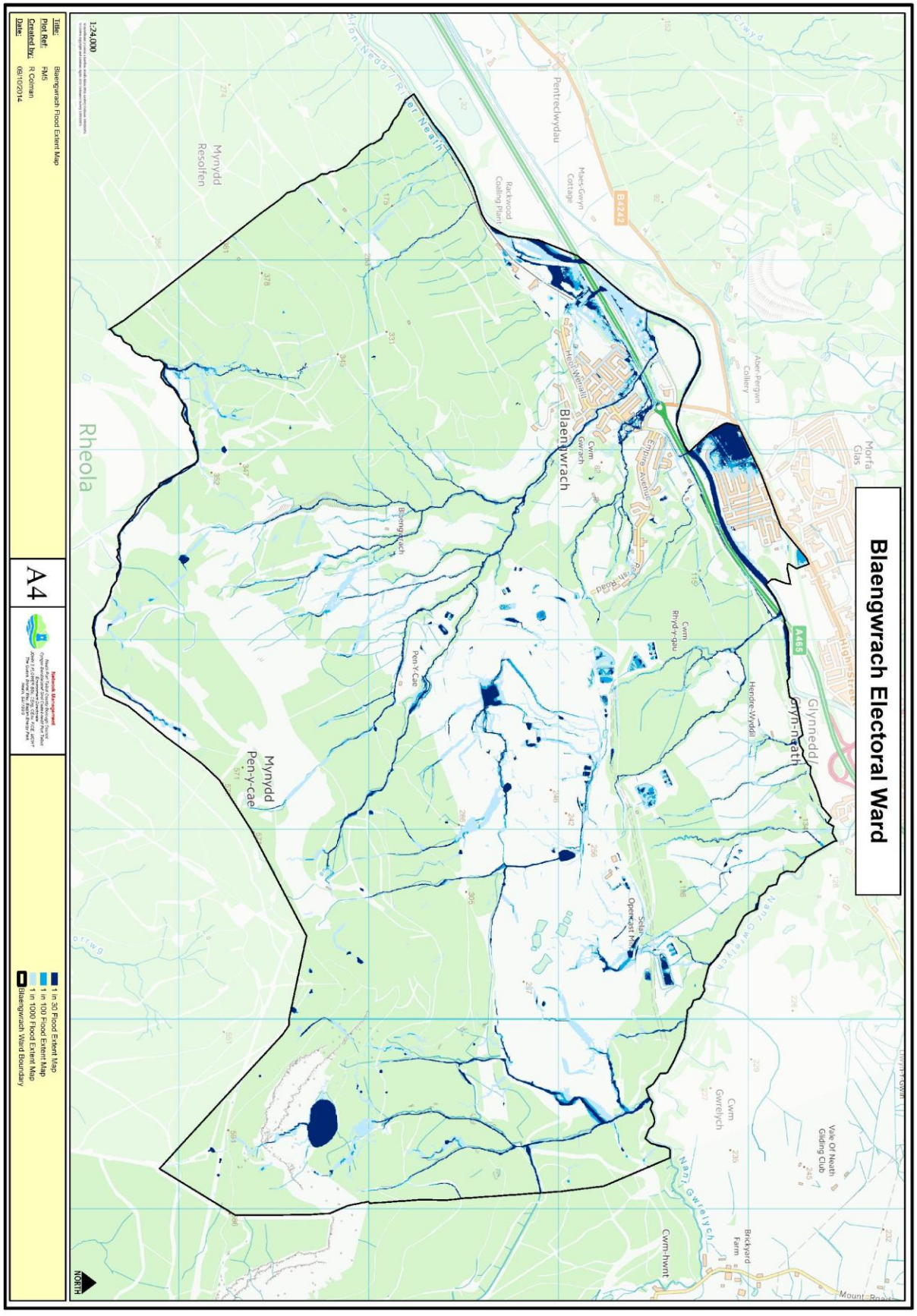


Figure 12: Blaengwrach Flood Extent Map

Table 12: Blaengwrach Property Count

Risk Area - Blaengwrach	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	881	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	174	69	43	62
People (multiplier 2.35)	409	162	101	146
Residential Properties at Risk of Flooding (200 mm Depth)	144	73	26	45
People (multiplier 2.35)	338	172	61	106
Services	3	0	0	0
Risk to Economic Activity				
Non-Residential Properties	207	11	5	5
Airports	0	0	0	0
Motorway/Trunk Roads *km*	4.60	0.67	0.21	0.30
Mainline Railways *km*	1.41	0.12	0.06	0.04
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	63.99	3.29	0.80	5.14
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.49	0.00	0.01	0.00
Listed Buildings	2	0	0	0
Licenced Abstractions (LA)	1	1	1	0

11.6 Briton Ferry East

11.6.1 Briton Ferry East Area of Flood Risk

Briton Ferry East covers an area of 497 hectares north of Baglan and south of Neath. The ward is primarily rural upland and woodlands, except for the western periphery which is dominated by residential and commercial property. The majority of the approximately 3000 population live along this residential belt.

11.6.2 Conclusions from the Flood Extent Map

The flood extent map shows the areas likely to be affected are wide spread and variable in size and potential risk factors. There are fluvial risks from the watercourses that descend through the developed urban upland areas. But there are also sizeable areas at risk in the lowest lying areas of the village, alongside the railway embankment the water doesn't have anywhere to drain to beyond the existing infrastructure. It should be noted that a pumping station can be found at one of the worst affected points, under the bridge on Regent Street.

As with many urban flood risk areas the lack of permeable areas is a factor. With tarmac and concrete roads and footways the area is almost completely reliant on gravity and the existing drainage infrastructure to remove the water from the area. In exceptional rainfall events the existing system is predicted to be insufficient, possibly resulting in the water levels forecast on the flood risk map.

11.6.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Briton Ferry East. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Regent St East + Villiers St: Under railway bridges - Network Rail own and manage pumps. Liaise with N.R. to ensure maintenance. Flood conveyance

assets in the vicinity of Regent St. East & Rockingham Terrace are reliant on a Welsh Water combined network. **See Measures NPT06 & NPT07. Measure type: M24, M35**

Craig-y-Darren small watercourse requires further investigation. Inlet on Craig Road: further investigations required. **See Measures NPT04 & NPT06. Measure type: M24, M35**

JK's Inlet to be reviewed for priority status: continued maintenance & review. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Ynysmaerdy System: 3 Inlets: Continued Maintenance and inspection. There is a history of flooding. A culverted Watercourse drains part of the estate into it. It then goes to Neath South Outlet: Choke Point in system Heavy Siltation - Settlement. Further Investigation required. **See Measures NPT04, NPT05 & NPT06. Measure type: M24, M35**

Pumping station at rear of Herne Street – owned by Welsh Water. **See Measure NPT07. Measure type M24, M35**

Grandison Brook - On-going maintenance work currently being undertaken. Money is being set aside to improve the system. A Project Appraisal Report for Grandison Brook was carried out in January 2010 – proposals are pending future funding. **See Measure NPT05 & NPT06. Measure type: M24, M35**

Pont Howell Ddu inlet. Highlighted in the PFRA as Flood Risk. **See Measure NPT06. Measure type: M24, M35**

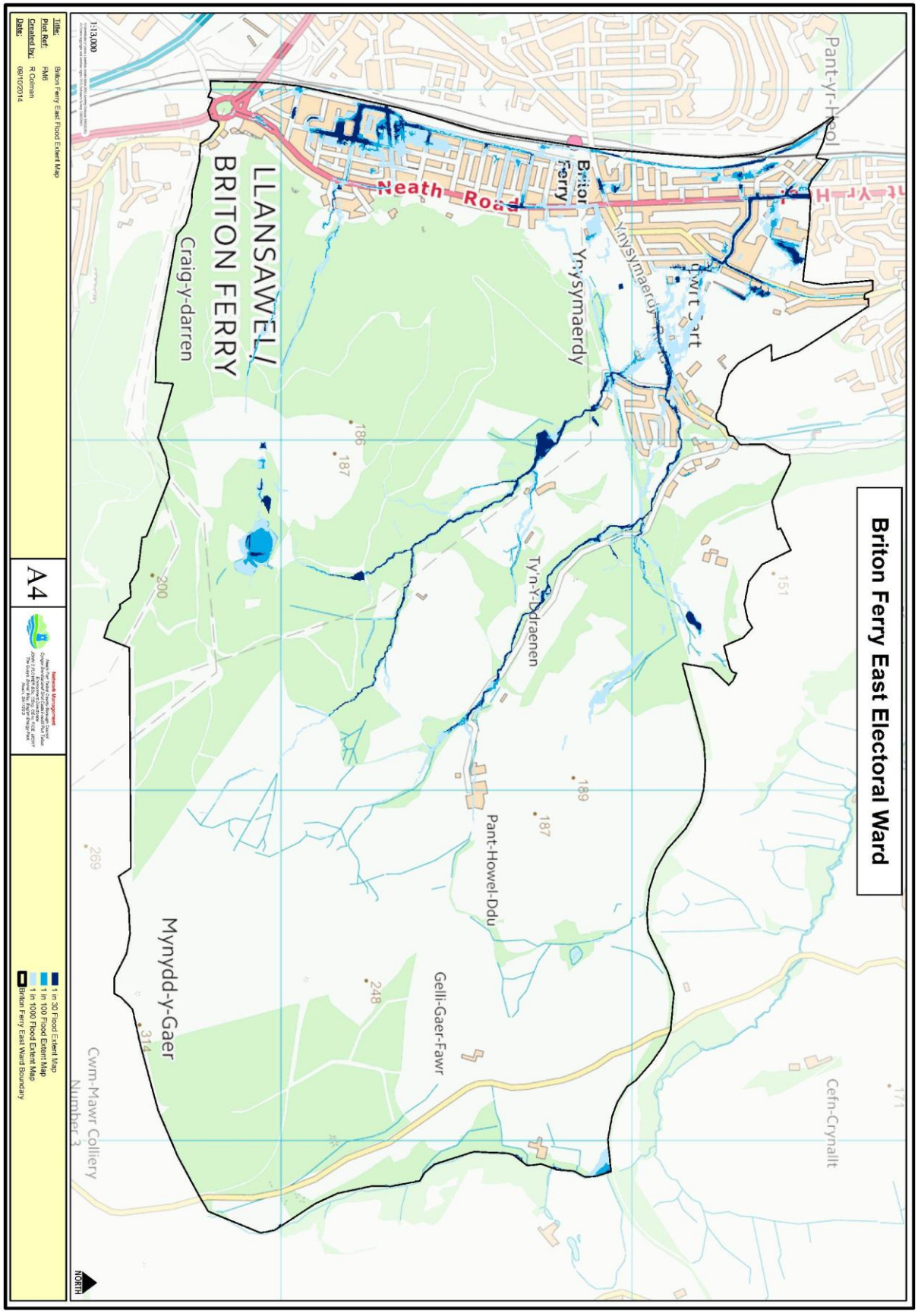


Figure 13: Briton Ferry East Flood Extent Map

Table 13: Briton Ferry East Property Count

Risk Area - Briton Ferry East	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1498	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	232	164	40	28
People (multiplier 2.35)	545	385	94	66
Residential Properties at Risk of Flooding (200 mm Depth)	135	86	36	13
People (multiplier 2.35)	317	202	85	31
Services	2	1	0	0
Risk to Economic Activity				
Non-Residential Properties	340	32	3	4
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.50	0.01	0.00	0.00
Mainline Railways *km*	1.80	0.23	0.38	0.24
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	8.40	0.66	0.08	0.02
Scheduled Ancient Monuments *ha*	8.22	0.49	0.11	0.03
Listed Buildings	7	0	1	0
Licenced Abstractions (LA)	0	0	0	0

11.7 Briton Ferry West

11.7.1 Briton Ferry West Area of Flood Risk

Briton Ferry West sits at the mouth of the Neath river. It covers an area of 278 hectares and has a population of approximately 3000. It is a mixture of residential properties with some commercial and light industry. Approximately half is wooded low hills and grassland overlooking the river estuary.

11.7.2 Conclusions from the Flood Extent Map

The flood risks shown in Briton Ferry West reflect a lot of the problems identified for Briton Ferry East. There are some fluvial risks from unnamed small watercourses. In addition, a large part of the lowest lying area of Briton Ferry West is shown to be subject to surface water flooding during intense periods of rainfall. Historically, the highlighted areas and especially the roads passing beneath the railway line often become impassable or substantially inundated whenever there are significant rainfall events.

The problem in these areas is well known but difficult to address. There are two substantial culverts carrying flows from the upland areas of Briton Ferry East that passes underneath the area on their way to the river. When there is high rainfall the systems surcharged and no further water can drain into the system. In addition, Network Rail own and maintain the pumping stations beneath the railway bridges.

11.7.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Briton Ferry West. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Church Street underbridge – long history of flooding. Network Rail owned. Liaise. **See Measure NPT07. Measure type: M24, M35**

Regent Street Under bridge - long history of flooding. Network Rail owned. Liaise. **See Measure NPT07. Measure type: M24, M35**

Victoria Street – Welsh Water owned & maintained combined system. It is suspected that there is an additional unknown drainage system. Liase with Welsh Water. Investigate possible additional system. **See Measures NPT02 & NPT07. Measure type: M24, M35, M44**

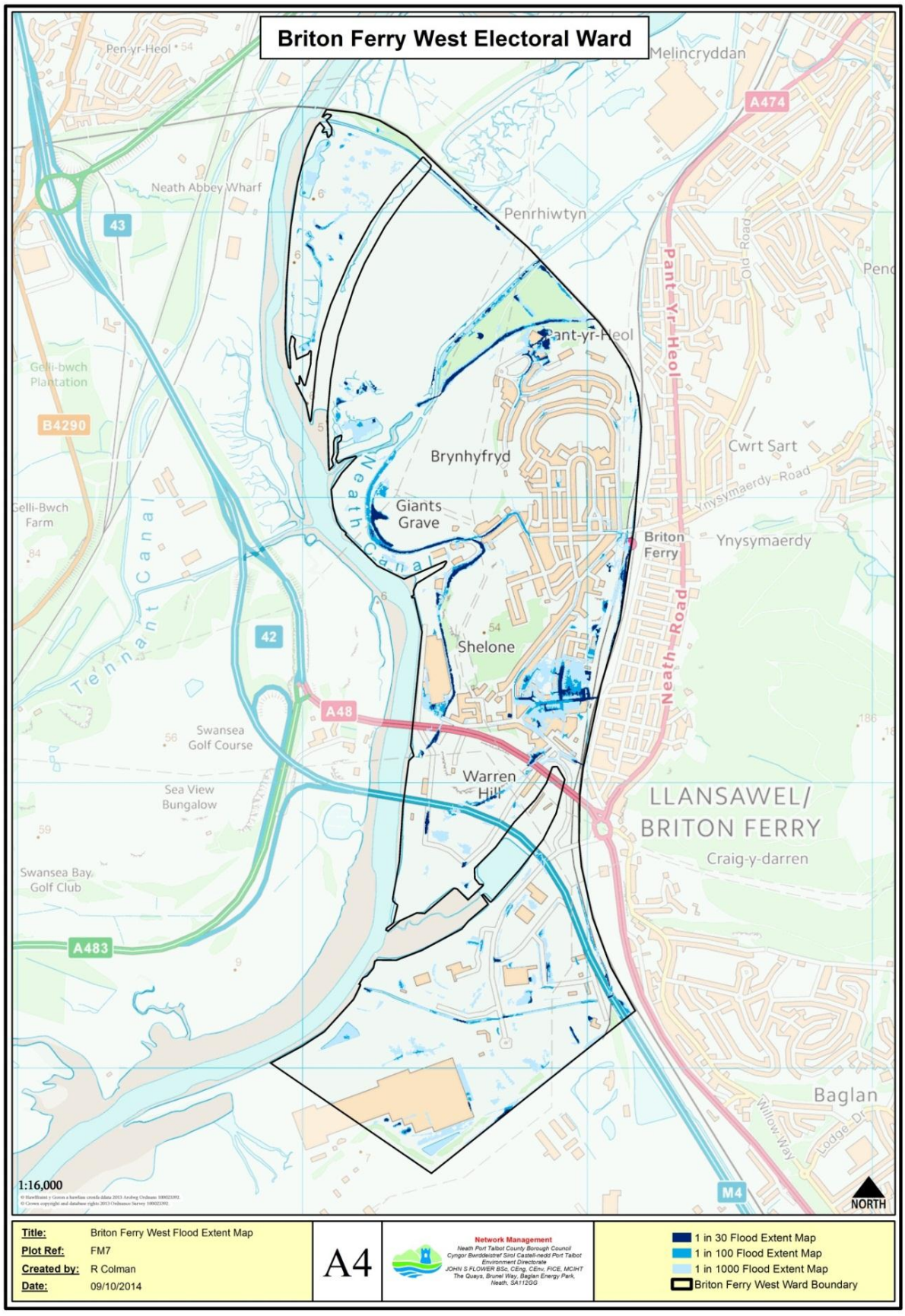


Figure 14: Briton Ferry West Flood Extent Map

Table 14: Briton Ferry West Property Count

Risk Area - Briton Ferry West	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1309	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	172	107	49	16
People (multiplier 2.35)	404	251	115	38
Residential Properties at Risk of Flooding (200 mm Depth)	141	85	49	7
People (multiplier 2.35)	331	200	115	16
Services	3	1	0	0
Risk to Economic Activity				
Non-Residential Properties	187	31	7	2
Airports	0	0	0	0
Motorway/Trunk Roads *km*	3.37	0.15	0.05	0.03
Mainline Railways *km*	2.53	0.20	0.02	0.01
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	1	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.41	0.00	0.00	0.00
Listed Buildings	11	0	0	1
Licenced Abstractions (LA)	1	1	1	0

11.8 Bryn & Cwmavon

11.8.1 Bryn & Cwmavon Area of Flood Risk

The Ward of Bryn and Cwmavon lies within the Afan valley and the River Afan flows through the village of Cwmavon. The ward covers a substantial area of 2,316 hectares and is home to approximately 6,600 people, the vast majority of which live within the two villages and several satellite communities. The ward is mainly rural upland with forested mountains surrounding the villages.

11.8.2 Conclusions from the Flood Extent Map

The extent map indicates that a great deal of the flood risk in this ward originates with the watercourses. But there are also a lot of properties found in the high-medium risk bracket, especially within the village of Cwmavon which are not directly affected by fluvial flooding. Investigation into the existing drainage infrastructure should yield better information as to why these properties would be at risk. The following are known or have been identified:

11.8.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Bryn & Cwmavon. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Heol Crwys & Depot Road – known flood risk areas. Continued maintenance of the culverted watercourse and pumping station is of high priority. Subject of a Project Appraisal Report. Proposals are subject to future funding**. See Measures NPT05 & NPT06. Measure type: M24, M35**

Cae Glas Estate, Cwmavon – Acquire Drainage layout from As-Built drawings. **See Measure NPT02. Measure type: M24.**

Nant Cwm Mawr Inlet. **See Measures NPT05 & NPT06. Measure type: M24, M35**

The Avenue – 2 no. inlets, 1 no. outlet – Further Investigation. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Heol Mabon Inlet. **See Measure NPT06. Measure type: M24, M35**

Nant Cwn Clais. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Ynysygwas Inlets – 3 no. Inlets. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Depot Road pumping station. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Nant Cwm Farteg & Nant Farteg Fach convergence in Bryn. **See Measure NPT04. Measure type: M24**

Varteg Row Outfalls – Further Investigation & mapping. **See Measures NPT02. Measure type M44**

Neath Road Drainage Ditch. **See Measure NPT06. Measure type: M24, M35**

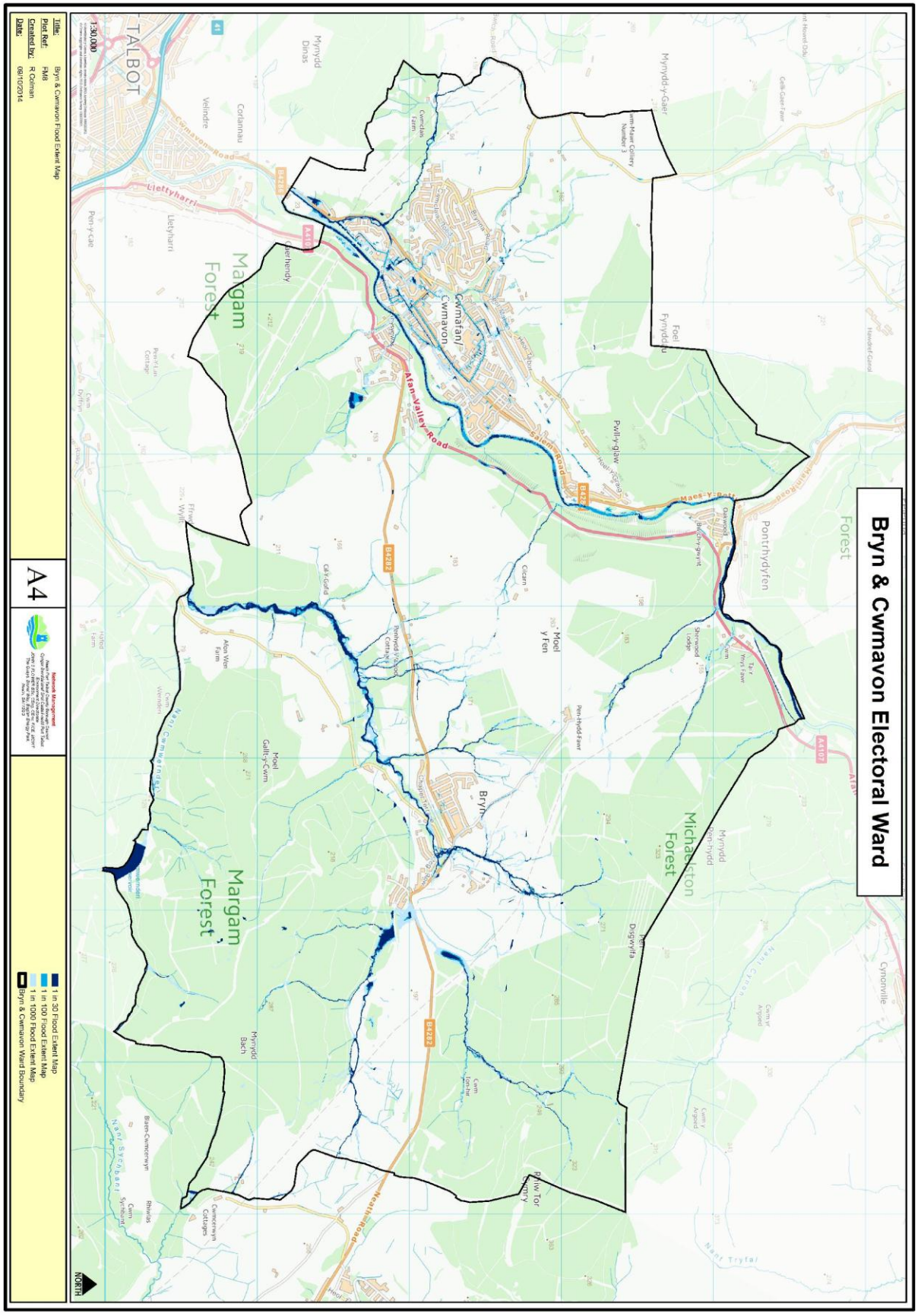


Figure 15: Bryn & Cwmavon Flood Extent Map

Table 15: Bryn & Cwmavon Property Count

Risk Area - Bryn & Cwmavon	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	2968	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	240	185	47	8
People (multiplier 2.35)	564	435	110	19
Residential Properties at Risk of Flooding (200 mm Depth)	101	89	10	2
People (multiplier 2.35)	237	209	24	5
Services	4	0	0	0
Risk to Economic Activity				
Non-Residential Properties	655	34	5	4
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	3.69	0.00	0.00	0.01
Listed Buildings	10	0	2	0
Licenced Abstractions (LA)	0	0	0	0

11.9 Bryncoch North

11.9.1 Bryncoch North Area of Flood Risk

The ward of Bryncoch North lies to the South of Alltwen and Rhos, and North of Bryncoch South, it covers an area of 575 hectares and is home to approximately 2,400 people. The population is concentrated within the village of Bryncoch with the majority of the ward given over to upland farms. The village is bordered along its western edge by the River Clydach, but the area is also criss-crossed by a network of streams and brooks that feed into the Clydach in this area.

11.9.2 Conclusions from the Flood Extent Map

The flood extent map clearly shows that the risk of flooding is almost entirely fluvial with the Upper Clydach River potentially affecting a number of properties. There are a number of small watercourses feeding the main river which are also potentially affected. The main river is the responsibility of NRW.

11.9.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Bryncoch North. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

The following have been identified:

Blaenhonddan Primary Culvert. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Linden Close Culvert, Nant Gilfach Inlet. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Redwood Close Inlets – Review for *CRITICAL* status pending. Riparian repairs required at No.15, partial collapse identified – Monitoring progress. **See Measures NPT05, NPT06 & NPT07. Measure type: M24, M35**

Main Road / Neath Road junction Inlet – status review being considered. **See Measure NPT06. Measure type: M24, M35**

Green hedges Bungalows near Dyffryn Arms – establish land ownership & investigate existing drainage. **See Measures NPT02 & NPT07. Measure type: M24, M35, M44**

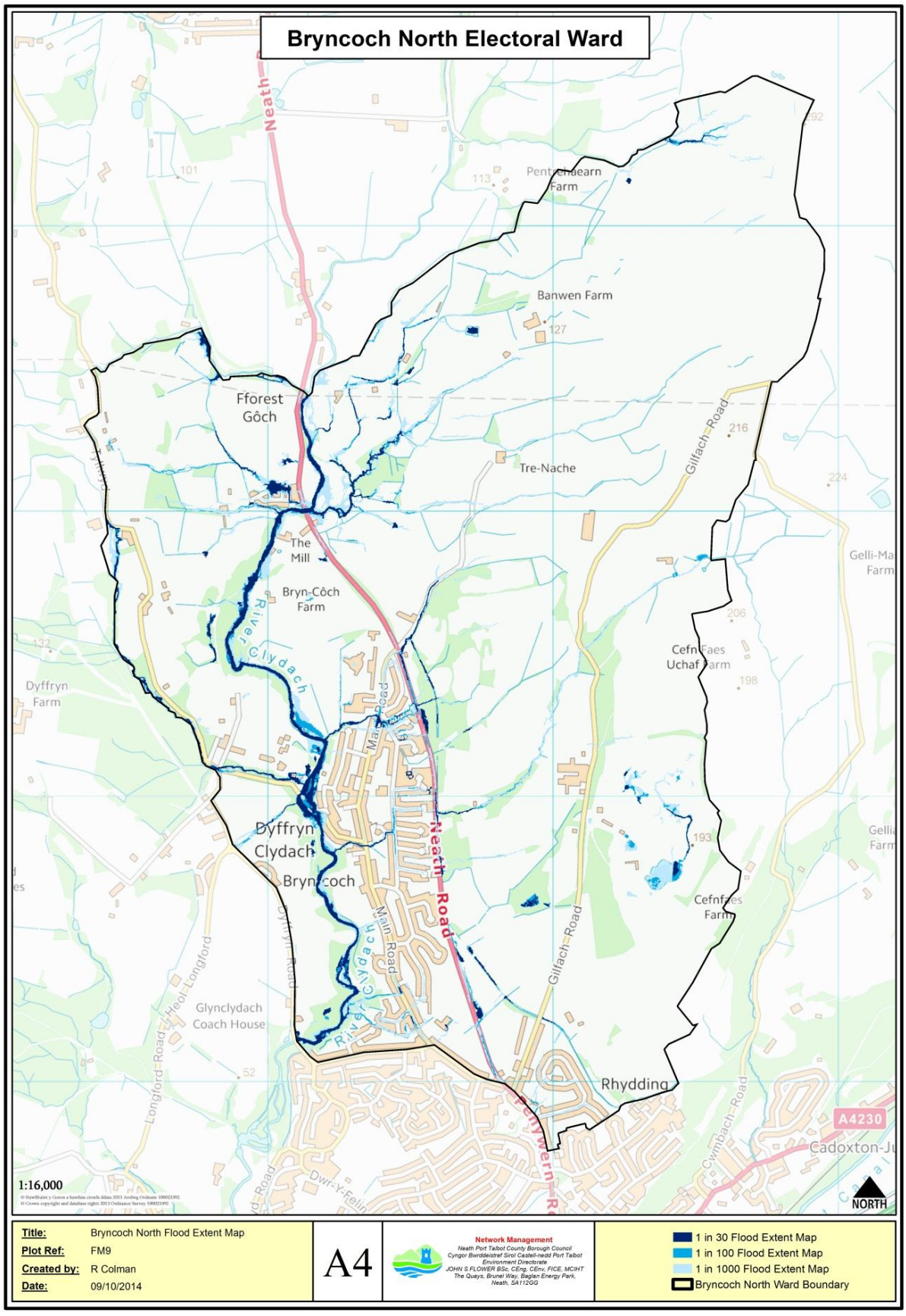


Figure 16: Bryncoch North Flood Extent Map

Table 16: Bryncoch North Property Count

Risk Area - Bryncoch North	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	953	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	56	39	9	8
People (multiplier 2.35)	132	92	21	19
Residential Properties at Risk of Flooding (200 mm Depth)	17	12	1	4
People (multiplier 2.35)	40	28	2	9
Services	3	0	0	0
Risk to Economic Activity				
Non-Residential Properties	265	10	3	3
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	4.94	0.11	0.03	0.07
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	0	0	0	0
Licenced Abstractions (LA)	1	0	0	0

11.10 Bryncoch South

11.10.1 Bryncoch South Area of Flood Risk

The Ward of Bryncoch South lies to the South of Bryncoch North and is made up of the communities of Bryncoch, Caewern and Rhydding. It covers an area of 184 hectares and is home to approximately 5,400 people. The ward is almost entirely developed as a residential area with some commercial properties and is home to Neath college. It is bounded in part by the Neath River to the South.

11.10.2 Conclusions from the Flood Extent Map

The extent map indicates some potentially large areas of surface water flooding on and adjacent to the Dŵr-y-Felin playing fields. Records of systems in this area are incomplete.

11.10.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Bryncoch South. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

The following have been identified:

Tyla Moes Inlet. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Ffrwyd Vale Inlet. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Dwr-y-felin Comprehensive Grid. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Existing drainage infrastructures in the following areas require investigation and asset mapping - Heol-y-Nant Grid, Gelli Dawel. Dynevor Avenue & Frywd Vale. **See Measure NPT02. Measure type M44**

Junction of Dŵr-y-felin Rd/Neath Abbey – Maintenance of existing intake structure and overflow pipeline. **See Measure NPT06. Measure type: M24, M35**

Cwm Clyddach Pond – Inlet and retaining wall – critical maintenance. **See Measures NPT05 & NPT06. Measure type: M24, M35**

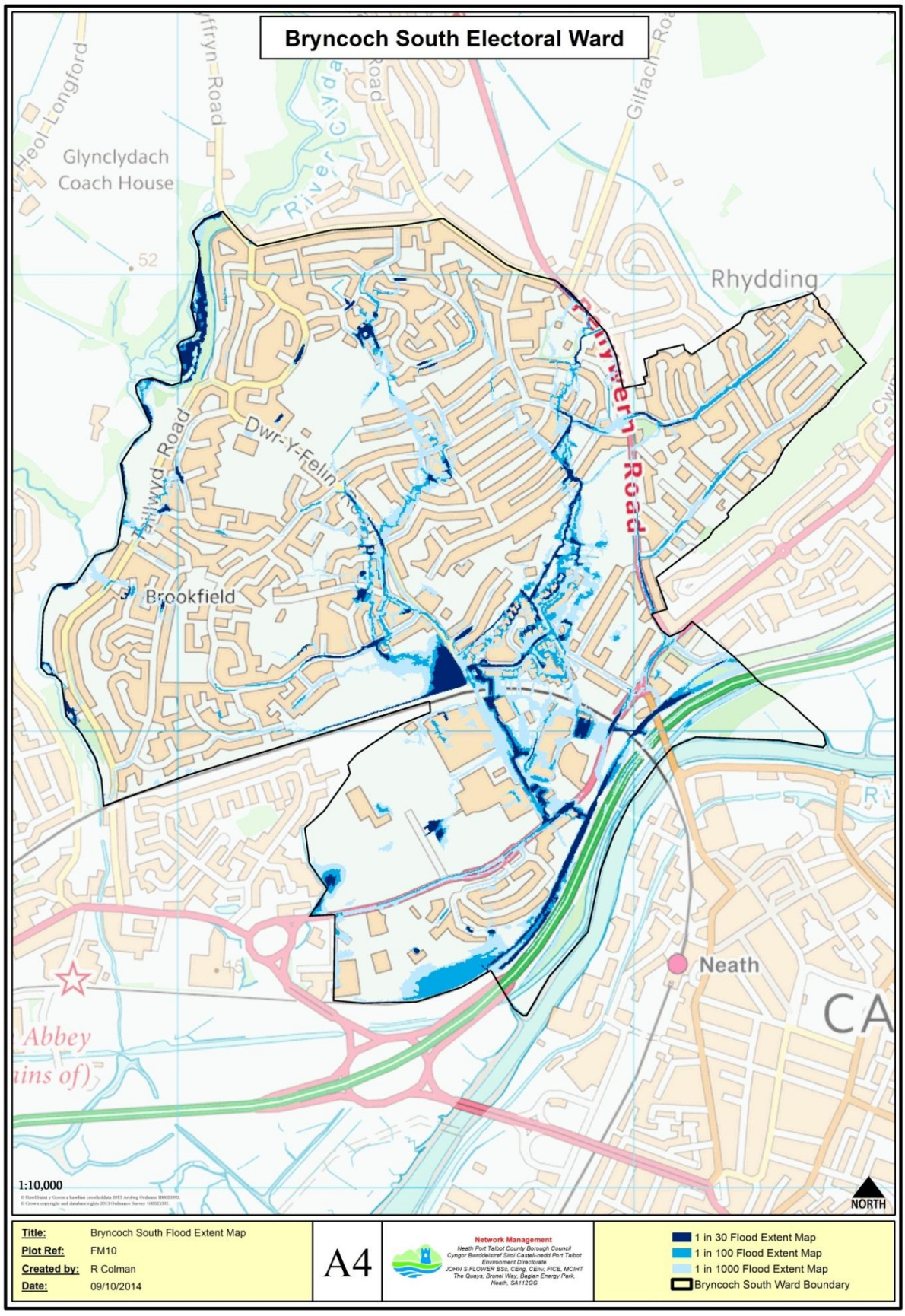


Figure 17: Bryncoch South Flood Extent Map

Table 17: Bryncoch South Property Count

Risk Area - Bryncoch South	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	2574	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	231	171	41	19
People (multiplier 2.35)	543	402	96	45
Residential Properties at Risk of Flooding (200 mm Depth)	97	80	9	8
People (multiplier 2.35)	228	188	21	19
Services	5	1	0	0
Risk to Economic Activity				
Non-Residential Properties	281	38	9	3
Airports	0	0	0	0
Motorway/Trunk Roads *km*	1.92	0.17	0.01	0.01
Mainline Railways *km*	1.99	0.61	0.26	0.61
Agricultural Land - Grades 1, 2 & 3 *ha*	55.82	3.01	1.02	1.28
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	1.45	0.04	0.01	0.00
Listed Buildings	5	0	0	2
Licenced Abstractions (LA)	0	0	0	0

11.11 Cadoxton

11.11.1 Cadoxton Area of Flood Risk

Cadoxton borders the wards of Bryncoch North and South on the East side, covering an area of 415 hectares and populated by approximately 1,700 people. The population is largely in the South and East in the growing suburban developments of Cadoxton and Cilfrew. However, for the most part the ward is given over to rural upland farms and in part to Neath Golf Club.

11.11.2 Conclusions from the Flood Extent Map

The map shows that the community is not exposed to a great deal of flood risk.

11.11.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Cadoxton. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

One location identified in the PFRA – A Capital scheme is designed for proposed works at Drumfields. Improvements to the deep manhole situated near to the railway have already been undertaken. The completion of the scheme will improve resilience to flood risk. Continued maintenance of the system is essential to ensure the free passage of the water course. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Stanley Place Inlet. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Cwmbach Road – requires improvement to drainage system i.e. road side ditching and general maintenance. **See Measure NPT06. Measure type: M24, M35**

Llangatwg Comprehensive – further investigation and on-going maintenance. **See Measures NPT 04 & NPT06. Measure type: M24, M35**

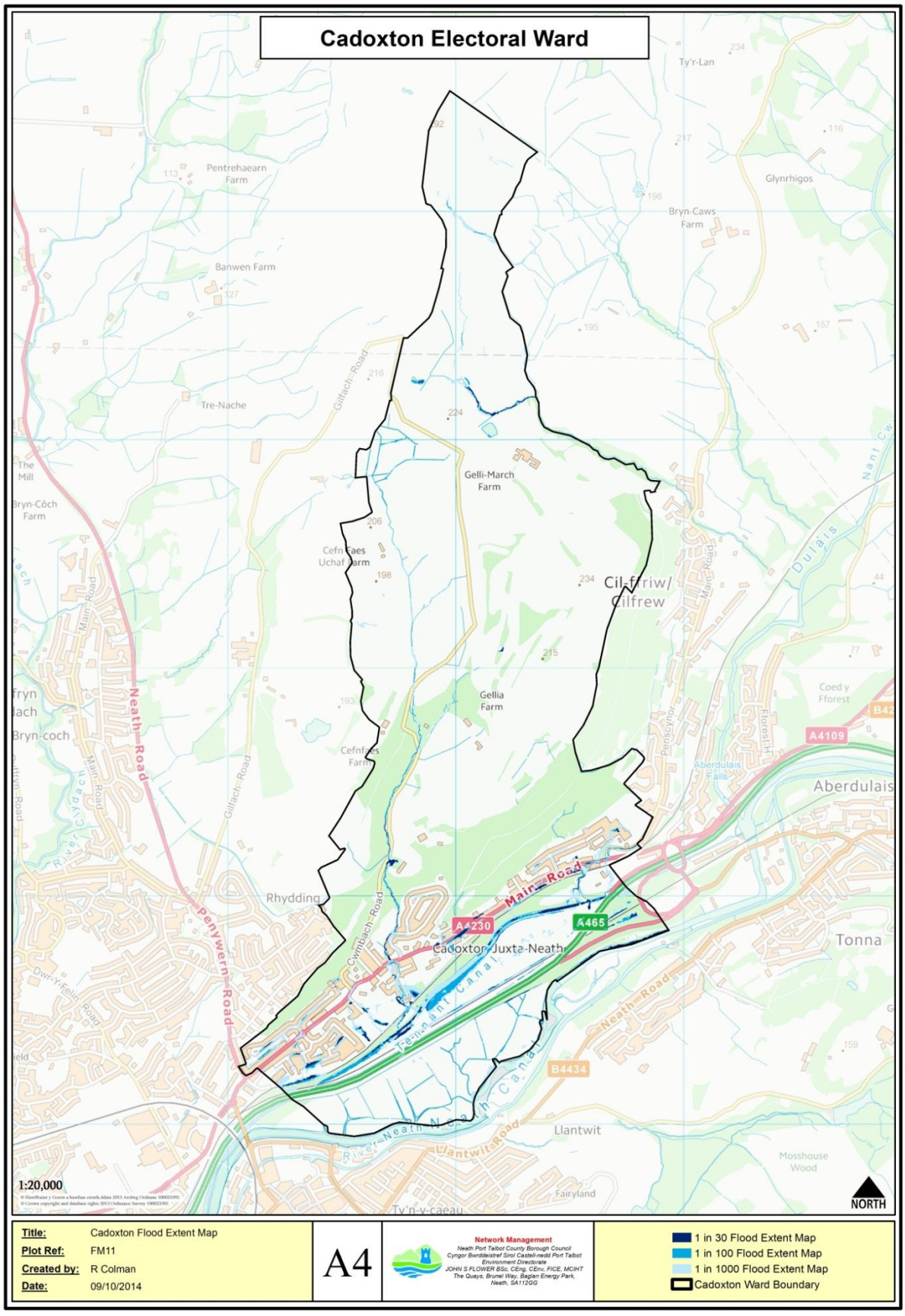


Figure 18: Cadoxton Flood Extent Map

Table 18: Cadoxton Property Count

Risk Area - Cadoxton	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	772	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	55	46	3	6
People (multiplier 2.35)	129	108	7	14
Residential Properties at Risk of Flooding (200 mm Depth)	17	12	3	2
People (multiplier 2.35)	40	28	7	5
Services	2	0	0	0
Risk to Economic Activity				
Non-Residential Properties	170	12	0	0
Airports	0	0	0	0
Motorway/Trunk Roads *km*	4.31	0.04	0.00	0.00
Mainline Railways *km*	3.70	0.28	0.12	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	62.46	3.45	1.81	1.15
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	6	1	0	1
Licenced Abstractions (LA)	1	0	0	0

11.12 Cimla

11.12.1 Cimla Area of Flood Risk

Cimla ward is bounded by the wards of Tonna to the north; Pelenna to the east; Briton Ferry East and Neath East to the southwest; and Neath South and Neath North to the west. Covering an area of 390 hectares and home to a population of 4,200 people, Cimla consists of a residential area in the western central area of the ward, which is part of the built up area of the town of Neath. The residential area is surrounded by open moorland; the whole of the ward is set on high ground. The ward of Cimla borders on the Gnoll Estate Country Park.

11.12.2 Conclusions from the Flood Extent Map

Cimla is, in the main, on high ground and is therefore well drained – for the most part. The Flood Extent Map highlights some fluvial flood risk – though this may be exaggerated.

11.12.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Cimla. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Investigate 2 no. inlets behind Cefn Saeson School – Establish ownership. **See Measures NPT02 & NPT07. Measure type: M24, M35, M44**

Cefn Saeson Fach Farm lane inlet. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Investigate 2 no. unnamed watercourses adjacent to Crynallt Primary. **See Measure NPT02. Measure type: 44**

Heol Uchaf – Afan Valley Road Junction – history of flooding. Overflow system to be constructed in 2015-16. Maintenance of system to be carried out periodically once completed. **See Measure NPT06. Measure type: M24, M35**

Crynallt Rd – Periodic flooding to highway from an unknown source. Likely to be groundwater, though further investigation is required. **See Measure NPT02. Measure type: M44**

Figure 19: Cimla Flood Extent map

Table 19: Cimla Property Count

Risk Area - Cimla	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1678	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	140	121	14	5
People (multiplier 2.35)	329	284	33	12
Residential Properties at Risk of Flooding (200 mm Depth)	12	12	0	0
People (multiplier 2.35)	28	28	0	0
Services	2	0	0	0
Risk to Economic Activity				
Non-Residential Properties	168	12	0	3
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	13.50	0.89	0.38	1.22
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	0	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.13 Coedffranc Central

11.13.1 Coedffranc Central Area of Flood Risk

Coedffranc Central ward covers the middle of the village of Skewen and is almost entirely built up as a residential area with the main road lined with commercial properties. Covering an area of 123 hectares and populated by nearly 4,000 people, it is the smallest ward in the county with the highest population density. It is adjacent to the Llandarcy North Reservoir which sits to the West of the ward.

11.13.2 Conclusions from the Flood Extent Map

The extent map indicates several areas of concern, see the measures proposed below.

11.13.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Coedffranc Central. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Caenant Terrace – Subject of a Project Appraisal Report, proposals are subject to future funding. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Cwrt Clwydi Gwyn Inlet (Drummau Road) – *HIGH* priority. Riparian maintenance. **See Measure NPT07. Measure type: M24, M35**

Whitegates Inlet – Riparian. Liaise to ensure maintenance. **See Measure NPT07. Measure type: M24, M35**

Pen-yr-heol Area – Investigate. **See Measure NPT04. Measure type: M24**

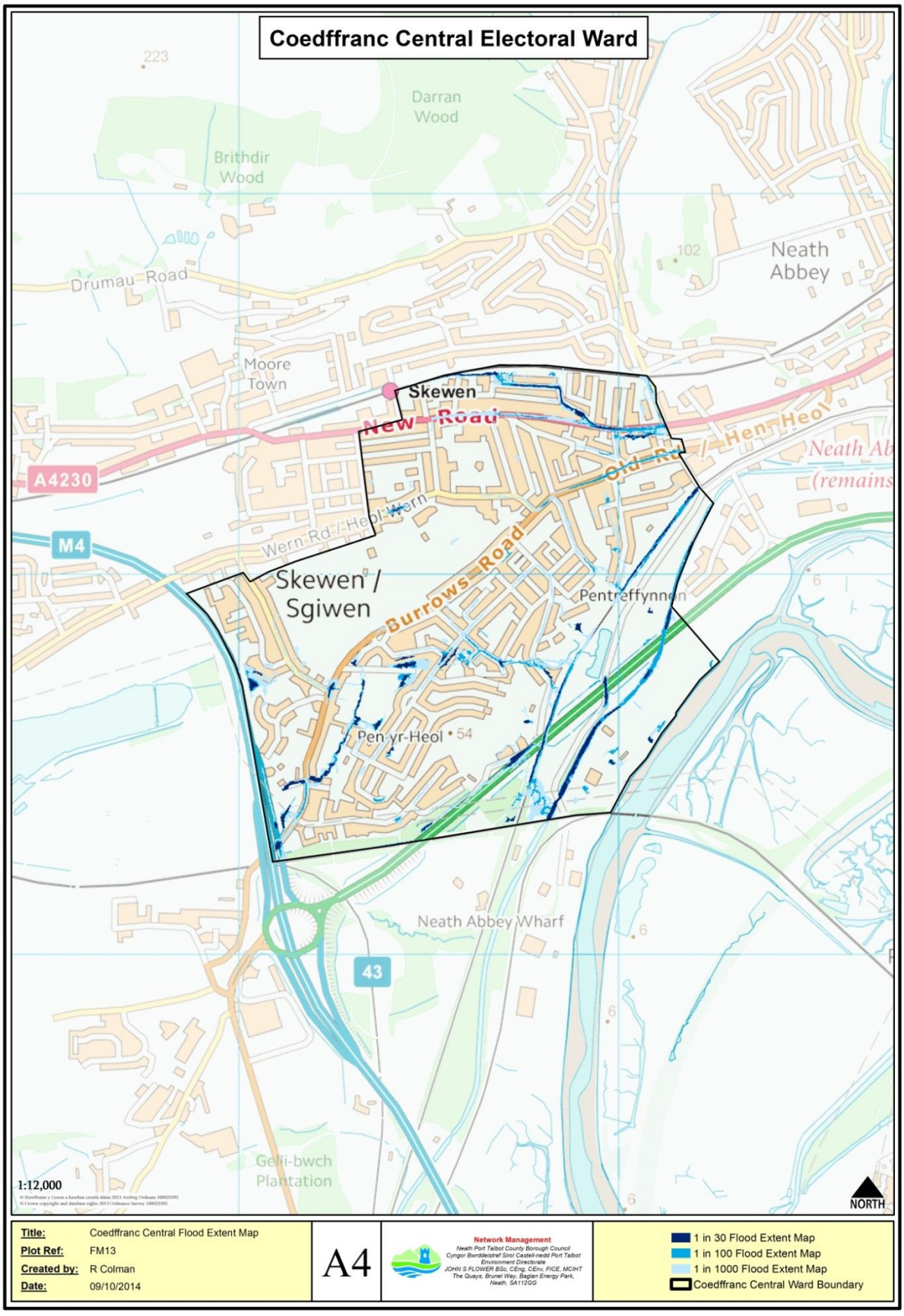


Figure 20: Coedffranc Central Flood Extent Map

Table 20: Coedffranc Central Property Count

Risk Area - Coedffranc Central	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1805	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	81	63	16	2
People (multiplier 2.35)	190	148	38	5
Residential Properties at Risk of Flooding (200 mm Depth)	27	24	1	2
People (multiplier 2.35)	63	56	2	5
Services	1	0	0	0
Risk to Economic Activity				
Non-Residential Properties	287	7	0	1
Airports	0	0	0	0
Motorway/Trunk Roads *km*	2.89	0.35	0.14	0.12
Mainline Railways *km*	2.32	0.57	0.53	0.19
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.82	0.11	0.14	0.01
Listed Buildings	10	2	1	0
Licenced Abstractions (LA)	0	0	0	0

11.14 Coedffranc North

11.14.1 Coedffranc North Area of Flood Risk

Coedffranc North is bounded by the wards of Dyffryn to the northeast; Coedffranc Central and Coedffranc West to the south; and Llansamlet of Swansea to the west. The ward covers an area of 170 hectares and a population of approxiamtely 2,400. The ward consists of a built up residential strip of north Skewen and the neighbourhood of Lon-Las to the south and rural farmland and woodland to the north on the slopes of Mynydd Drummau.

11.14.2 Conclusions from the Flood Risk and Hazard Map

The extent map indicates several areas of concern. But no extensive or severe flooding is noted.

11.14.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Coedffranc North. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Drummau Road & Ellen's Road Subject of a Project Appraisal Report completed in October 2008. **See Measure NPT06. Measure type M24, M35**

Unnamed watercourse in area of Dynevor Road & Jubilee Crescent – Investigate Inlet. **See Measures NPT02 & NPT06. Measure type: M24, M35, M44**

Siding Terrace, Park Avenue – Surface Water flooding. Historical problems – Riparian culvert. **See Measure NPT04. Measure type: M24**

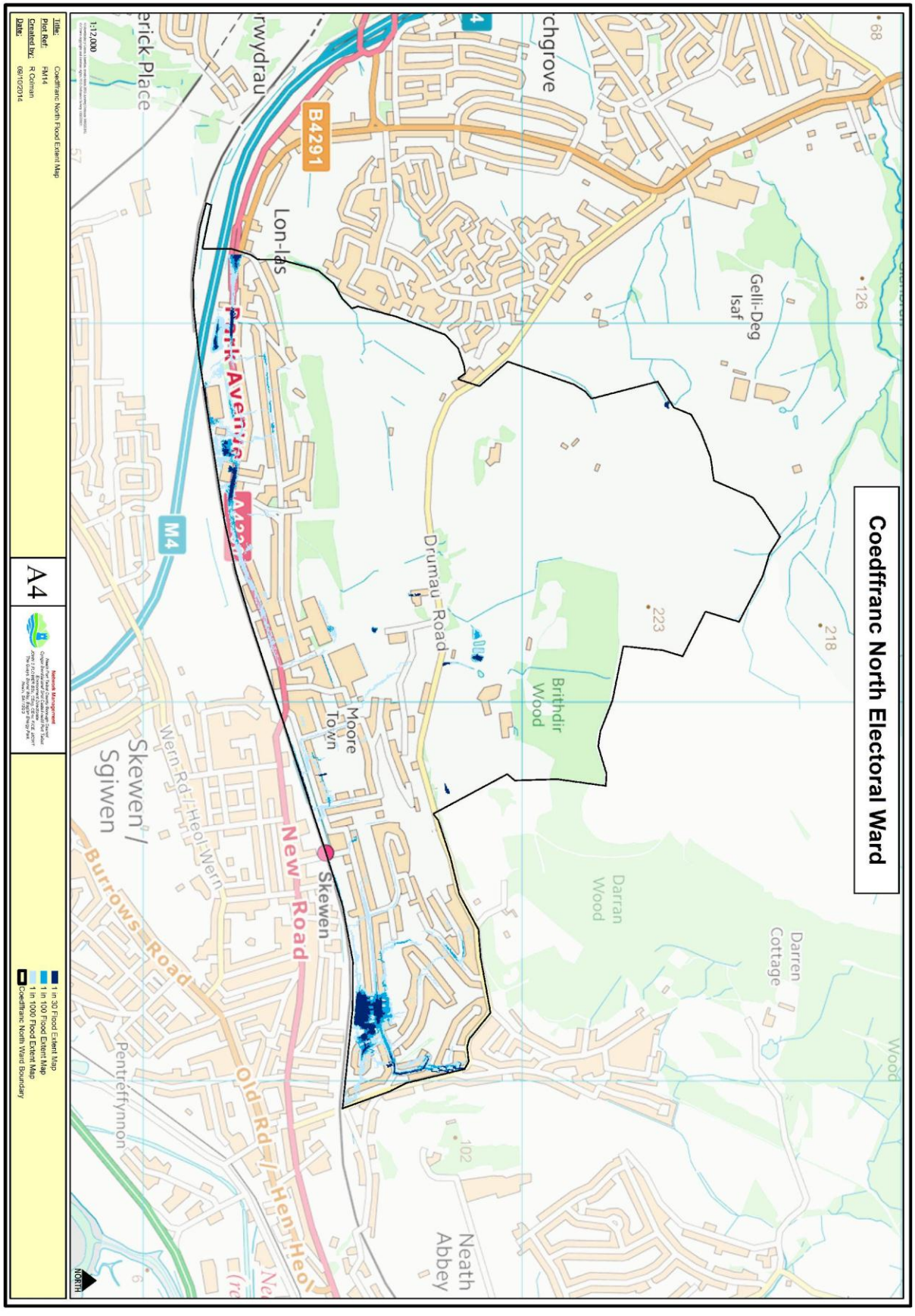


Figure 21: Coedffranc North Flood Extent Map

Table 21: Coedffranc North Property Count

Risk Area - Coedffranc North	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1023	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	95	57	19	19
People (multiplier 2.35)	223	134	45	45
Residential Properties at Risk of Flooding (200 mm Depth)	54	22	24	8
People (multiplier 2.35)	127	52	56	19
Services	0	0	0	0
Risk to Economic Activity				
Non-Residential Properties	233	13	4	1
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.58	0.00	0.00	0.00
Mainline Railways *km*	0.68	0.12	0.14	0.11
Agricultural Land - Grades 1, 2 & 3 *ha*	30.45	0.03	0.01	0.04
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	1	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.16 Coedffranc West

11.15.1 Coedffranc West Area of Flood Risk

Coedffranc West is bounded by the wards of Llansamlet and Bonymaen of Swansea to the west; Coedffranc Central and Coedffranc North to the north; and Briton Ferry West to the east. It is bounded to the south by Swansea Bay. The Tennant canal passes through the middle of the ward. A large ward, covering 1,322 hectares, it is largely rural with a number of substantial light industrial or commercial sites. It hosts a population of no more than 2,100 people. Coedffranc West consists of the areas Crymlyn Bog, Crymlyn Burrows, Jersey Marine, Llandarcy and Skewen.

11.15.2 Conclusions from the Flood Extent Map

The flood extent map indicates potentially extensive flood risk across the community. The area contains a sizeable wetland, marsh, small watercourses and a small reservoir, so fluvial flood risk is potentially substantial.

11.15.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Coedffranc West. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Elba Avenue/ Fabian Way - Pumping Station – Inspection and maintenance. **See Measures NPT05 & NPT06. Measure type: M24, M35**

University development includes substantial drainage works, awaiting as-built information for our records. **See measure NPT02. Measure type: M44**

Area including Llandarcy Academy of Sport – further investigation of indicated flood risk. **See Measure NPT04. Measure type: M24**

Two No. substantial intakes at Prettyman Drive and The Greenway, Llandarcy and at Ashleigh Terrace and Mian Road Jersey Marine. Continual monitoring and maintenance required of the highway drainage system at these location. **See Measures NPT05 & NPT06. Measure type M24, M35**

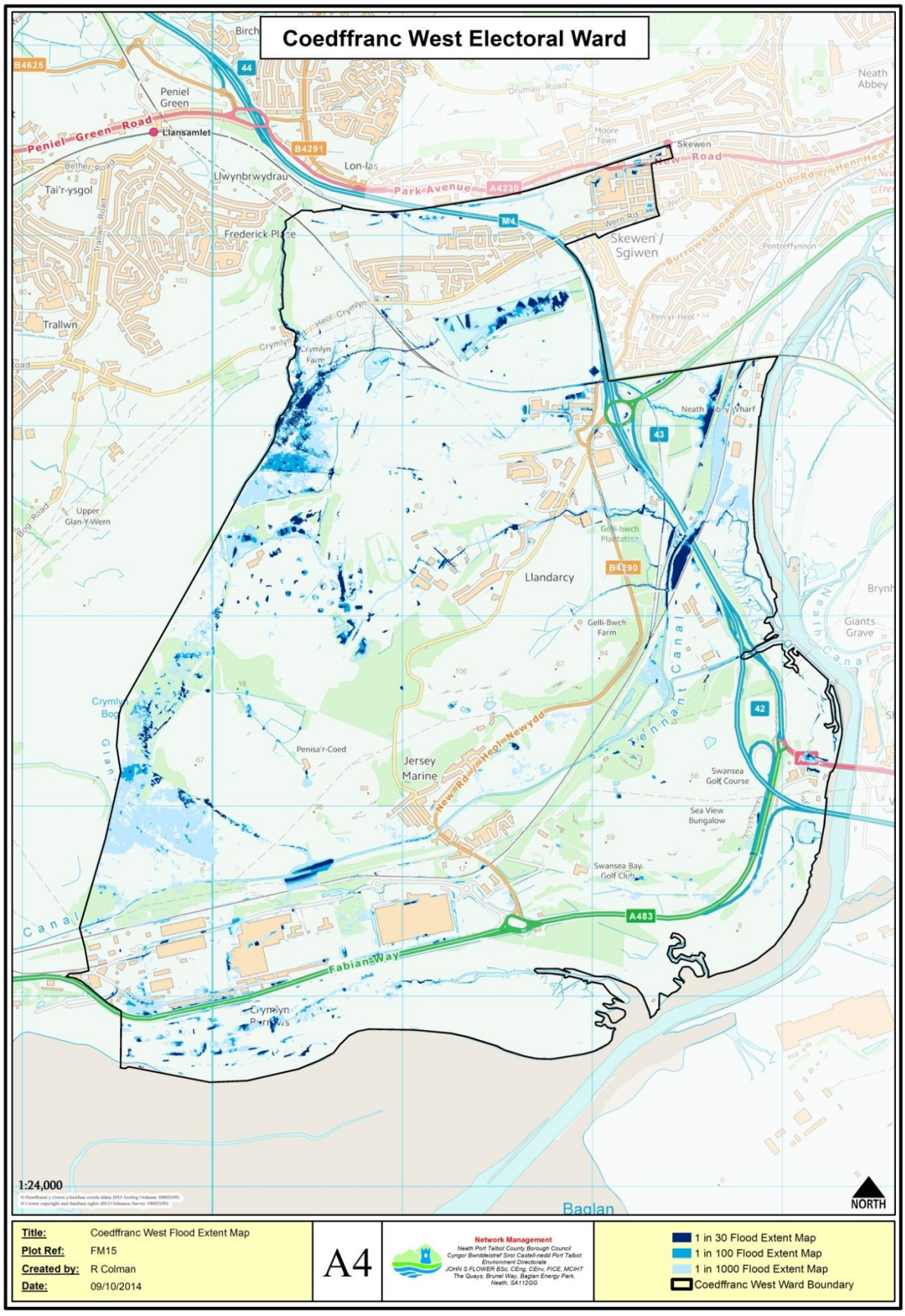


Figure 22: Coedffranc West Flood Extent Map

Table 22: Coedffranc West Property Count

Risk Area - Coedffranc West	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1164	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	29	24	5	0
People (multiplier 2.35)	68	56	12	0
Residential Properties at Risk of Flooding (200 mm Depth)	19	14	5	0
People (multiplier 2.35)	45	33	12	0
Services	3	1	0	0
Risk to Economic Activity				
Non-Residential Properties	694	21	7	3
Airports	0	0	0	0
Motorway/Trunk Roads *km*	14.36	0.93	0.19	0.10
Mainline Railways *km*	11.96	1.94	0.67	0.24
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	1	0	0	0
Special Areas of Conservation (SAC) *ha*	124.13	36.44	7.04	3.70
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	102.98	27.44	3.08	1.71
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	236.32	39.22	7.69	4.07
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.13	0.00	0.00	0.00
Listed Buildings	9	2	0	0
Licenced Abstractions (LA)	3	1	0	0

11.16 Crynant

11.16.1 Crynant Area of Flood Risk

Crynant lies approximately seven miles from the town of Neath in the Dulais Valley. The village lies between Mynydd Marchywel to the west, Hirfynydd to the east and Mynydd y Drum to the north. It covers an area of 2,170 hectares and supports a population of 1,900. The village follows the valley floor alongside the Dulais River and also sits astride the Creunant watercourse, which flows into the Dulais at this point. There are numerous other small watercourses flowing down into the valley in this area. The extensive abandon mine workings in the area also provide additional water sources by way of the mine water run offs that pour out of most of the valley sides and mountains.

11.16.2 Conclusions from the Flood Extent Map

The map indicates substantial fluvial flood extents, which aren't all substantiated by historical flood events. The main river and numerous small watercourses are the main source of flood risk in this community.

11.16.3 Measures and objectives to mitigate flood risk

Ynyswen Terrace – Subject of a Project Appraisal Report in 2010.

A number of specific locations/assets have been identified from the flood extent map for Crynant. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Further Investigations across the community is required – with flow modelling, identification of infrastructure and maintenance. **See measures NPT02, NPT04 & NPT06. Measure type: M24, M35, M44**

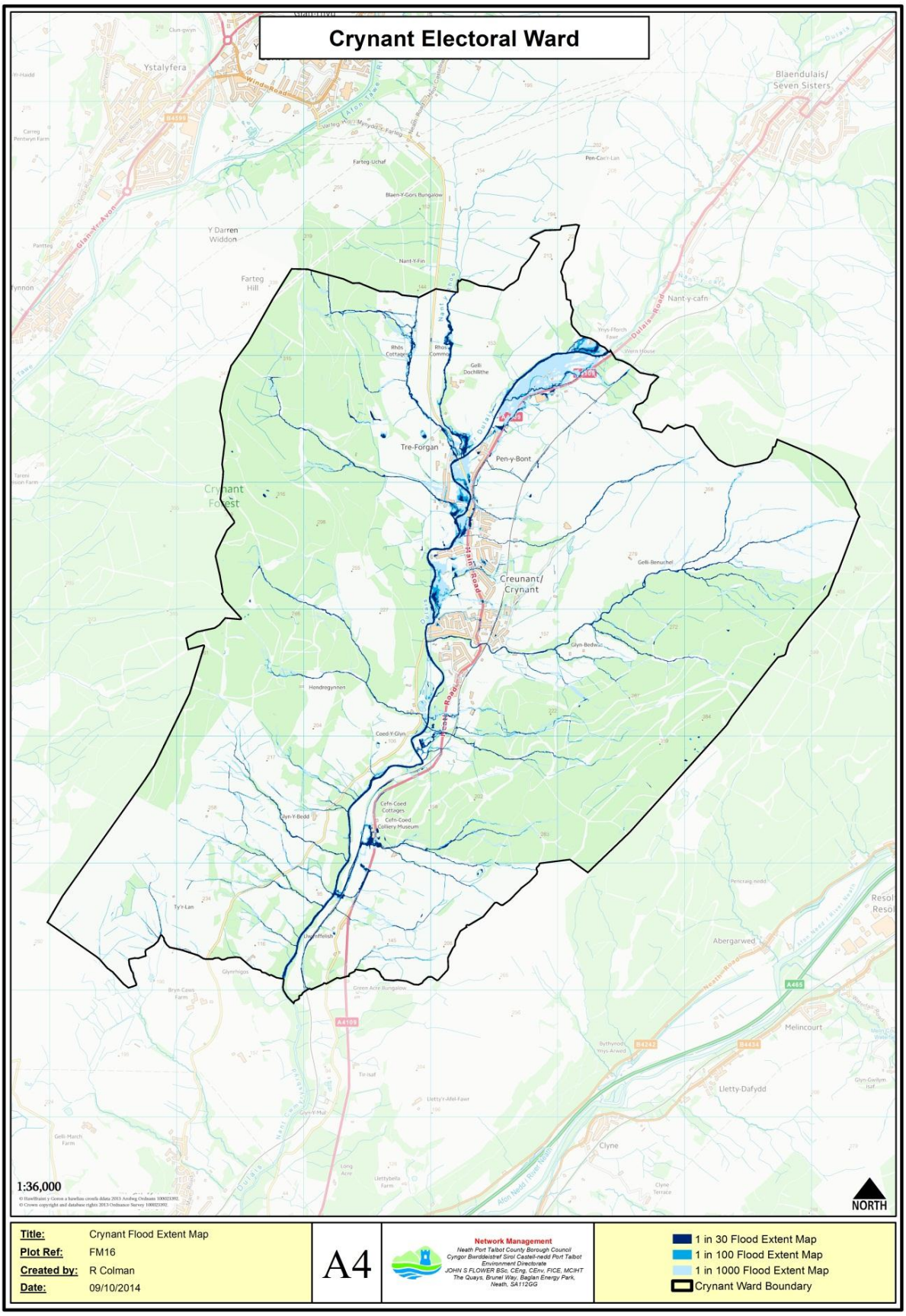


Figure 23: Crynant Flood Extent Map

Table 23: Crynant Property Count

Risk Area - Crynant	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	874	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	63	51	8	4
People (multiplier 2.35)	148	120	19	9
Residential Properties at Risk of Flooding (200 mm Depth)	21	13	4	4
People (multiplier 2.35)	49	31	9	9
Services	1	0	0	0
Risk to Economic Activity				
Non-Residential Properties	357	33	0	3
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	5.85	0.86	0.47	0.94
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	1.99	0.00	0.00	0.00
Listed Buildings	11	0	0	2
Licenced Abstractions (LA)	4	0	0	2

11.17 Cwmllynfell

11.17.1 Cwmllynfell Area of Flood Risk

Cwmllynfell has a population slightly less than 1,200 people, making it the least populated ward in the county. It covers an area of 930 hectares. Cwmllynfell is approximately seventeen miles from the city of Swansea and borders the county borough of Powys. Cwmllynfell is bounded by the wards of Quarter Bach of Carmarthenshire to the northeast; Cwmtwrch of Powys to the east; Ystalyfera to the southeast; Pontardawe to the southwest; Gwaun-Cae-Gurwen to the west and Lower Brynamman to the northwest. Almost entirely made up of rural upland farms and the villages of Rhiw-Fawr and Cwmllynfell, it has a number of small streams and brooks that join the Afon Twrch on the wards north-east boundary.

11.17.2 Conclusions from the Flood Extent Map

The majority of the flood risk areas on the extent map appear to be connected to small watercourses and do not affect properties. The whole area requires further investigation and assets surveyed to better understand the risks and how they may be reduced.

11.17.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Cwmllynfell. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Carry out investigations of the small watercourses that pass through, or near, Rhiwfawr and Cwmllynfell. **See Measure NPT02. Measure type: M44**

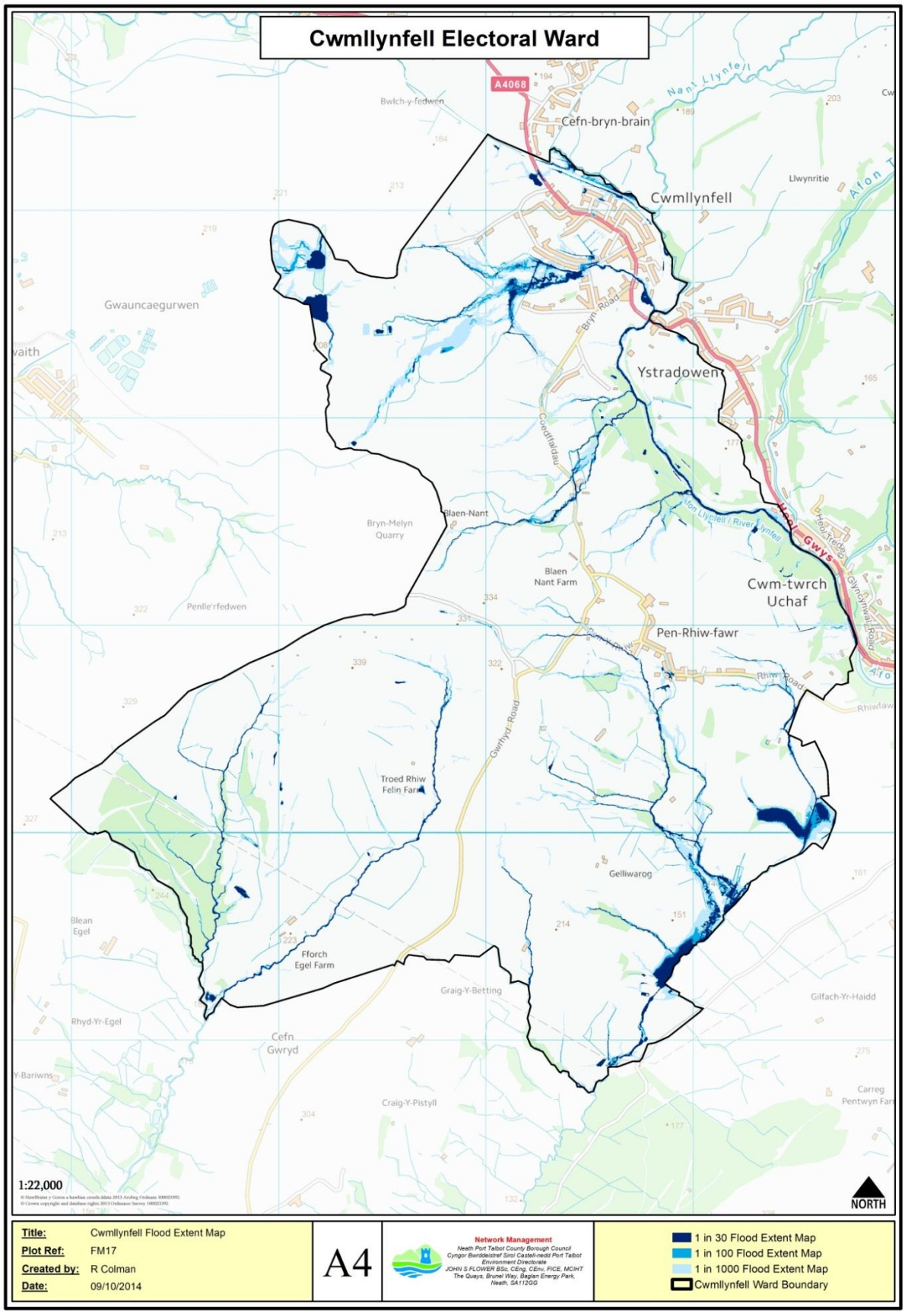


Figure 24: Cwmllynfell Flood Extent map

Table 24: Cwmllynfell Property Count

Risk Area - Cwmllynfell	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	540	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	19	14	4	1
People (multiplier 2.35)	45	33	9	2
Residential Properties at Risk of Flooding (200 mm Depth)	7	5	1	1
People (multiplier 2.35)	16	12	2	2
Services	3	0	0	0
Risk to Economic Activity				
Non-Residential Properties	224	9	2	2
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	0	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.18 Cymmer

11.18.1 Cymmer Area of Flood Risk

Cymmer ward is situated in the Afan Valley and is the junction between the Gwynfi and Corrwg Valleys. Cymmer covers an area of 2,361 hectares and has a population of nearly 3,000. The village of Cymmer sits at the confluence of the Afan and the Corrwg Rivers.

11.18.2 Conclusions from the Flood Extent Map

The extent map indicates that the flood risk in this community is primarily fluvial, with the rivers and small watercourses highlighting risk along their lengths.

A Project Appraisal Report for Sunnyside Terrace, Cymmer was completed in August 2008.

11.18.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Cymmer. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Further investigations are required to establish the validity of the potential risks and to better understand the risk to properties. **See Measure NPT02. Measure type: M44**

Watercourse/ditching and culvert along Viaduct Rd require investigation and continued maintenance. **See Measures NPT05 & NPT06. Measure type M24, M35**

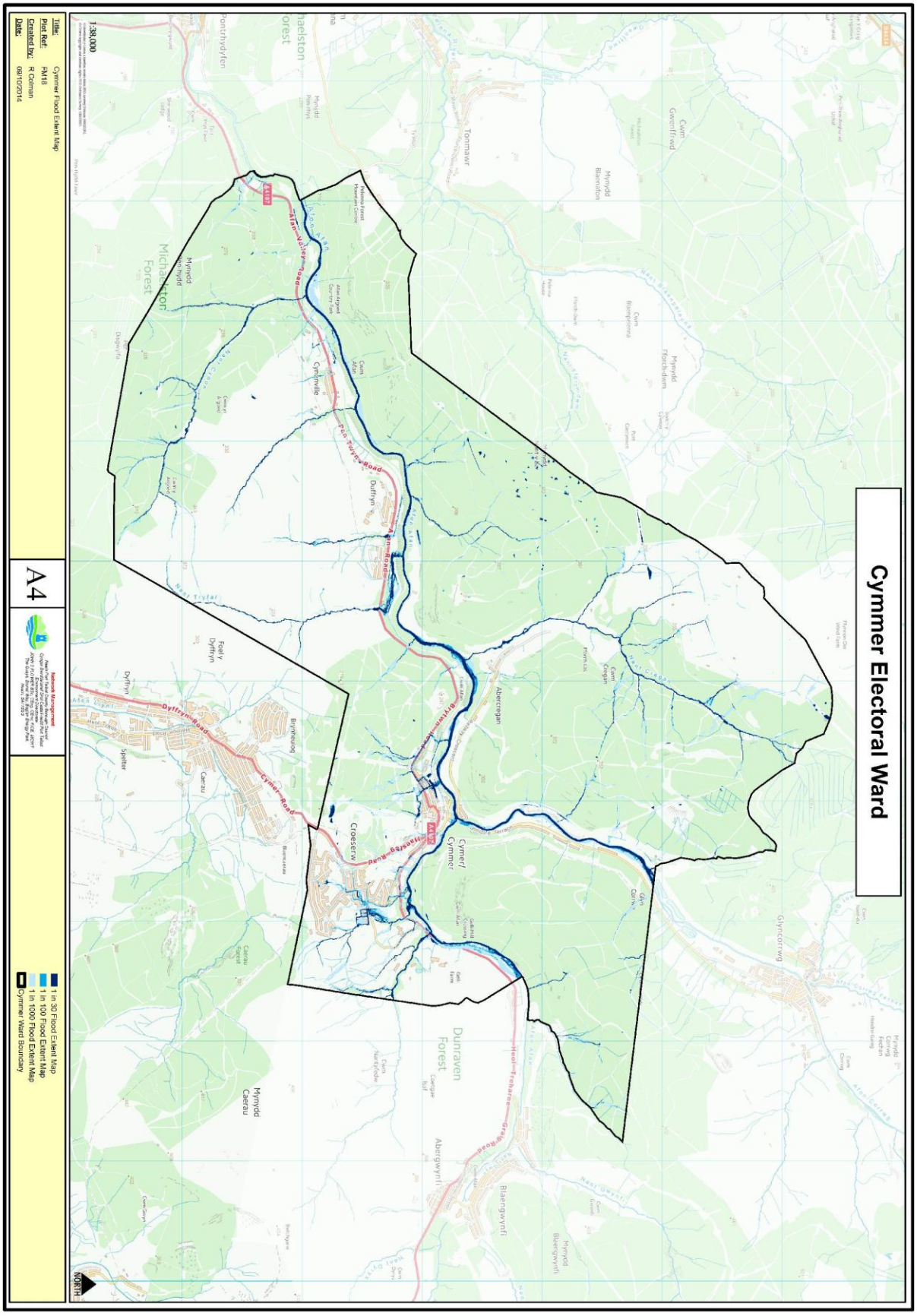


Figure 25: Cymmer Flood Extent Map

Table 25: Cymmer Property Count

Risk Area - Cymmer	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1265	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	139	93	22	24
People (multiplier 2.35)	327	219	52	56
Residential Properties at Risk of Flooding (200 mm Depth)	70	38	13	19
People (multiplier 2.35)	165	89	31	45
Services	17	1	0	0
Risk to Economic Activity				
Non-Residential Properties	346	24	11	4
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.53	0.00	0.00	0.00
Listed Buildings	24	12	0	3
Licenced Abstractions (LA)	1	0	0	1

11.19 Dyffryn

11.19.1 Dyffryn Area of Flood Risk

Dyffryn ward includes the historic Neath Abbey, the eleventh century Cistercian monastery. The ward consists of farmland and woodland encircling the eastern slopes of Mynydd Drummau. It covers an area of 689 hectares and has a population of approximately 3,200. The Clydach Brook flows through Dyffryn Clydach in a north - south direction, passing the eastern boundary of the Neath Abbey site. The woodland surrounding the river forms a public park.

11.19.2 Conclusions from the Flood Extent Map

The potential flooding appears to affect the urbanised areas of Neath Abbey.

11.19.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Dyffryn. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Old Road Inlet & Old Road – DCWW sewer flooding – liaise with Welsh Water. **See Measures NPT05, NPT06 & NPT07. Measure type: M24, M35**

Neath Abbey Roundabout – Subject of a P.A.R. Flooding alleviated by works substantially completed in 2012. Additional works, continued maintenance and inspections required. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Dan-y-graig Road & Penyard Road – Surface Water flooding. **See Measure NPT04. Measure type: M24**

Longford Road Inlets – Review for HIGH / CRITICAL priority status. Historical flooding issues. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Tyllwyd - requires investigation. **See Measure NPT04. Measure type: M24**

Graig Parc area – existing drainage to me monitored and maintained. **See Measure NPT06. Measure type: M24, M35**

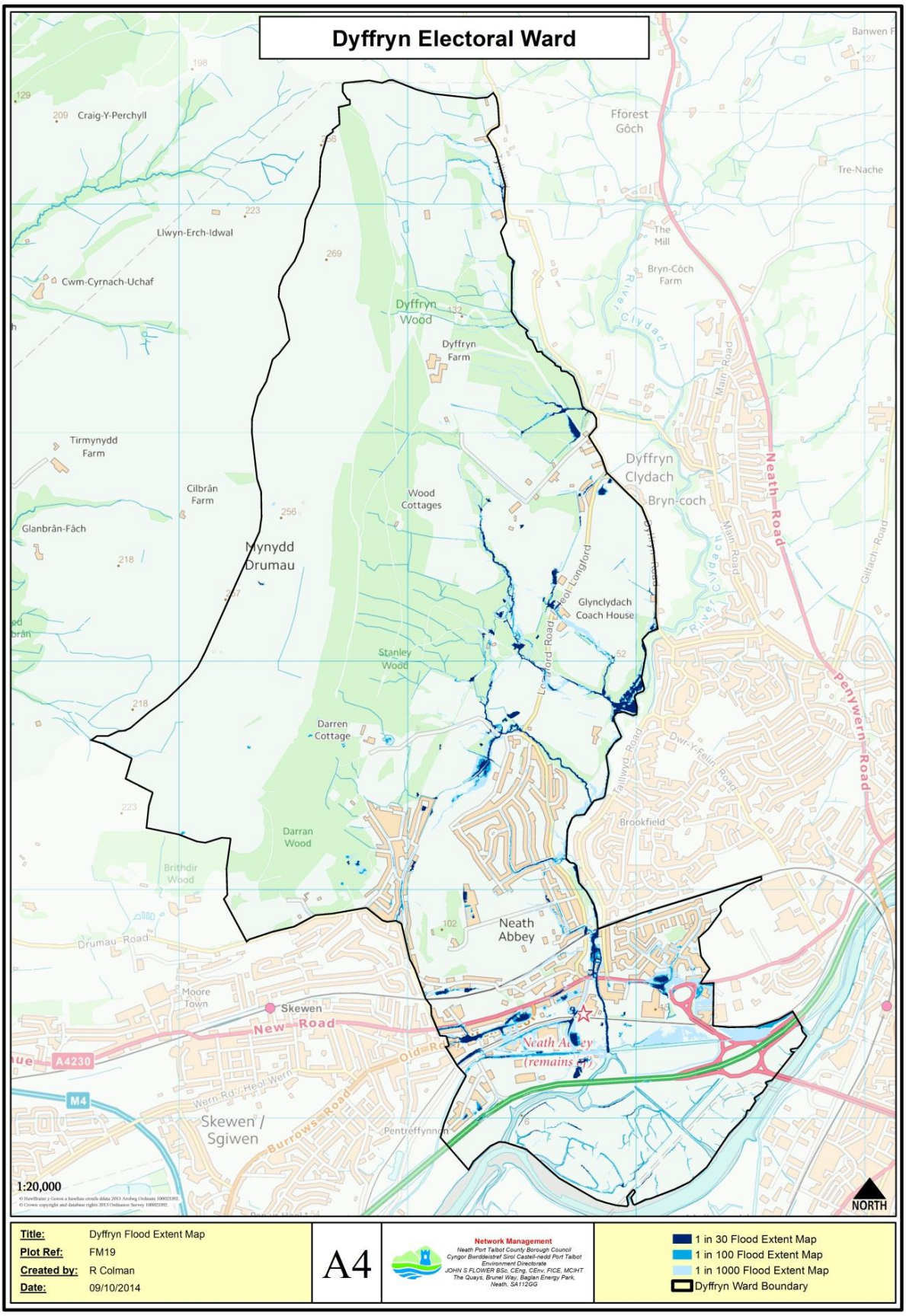


Figure 26: Dyffryn Flood Extent Map

Table 26: Dyffryn Property Count

Risk Area - Dyffryn	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1449	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	109	85	8	16
People (multiplier 2.35)	256	200	19	38
Residential Properties at Risk of Flooding (200 mm Depth)	46	25	12	9
People (multiplier 2.35)	108	59	28	21
Services	3	0	0	0
Risk to Economic Activity				
Non-Residential Properties	349	26	4	3
Airports	0	0	0	0
Motorway/Trunk Roads *km*	4.29	0.06	0.01	0.01
Mainline Railways *km*	2.83	0.34	0.03	0.12
Agricultural Land - Grades 1, 2 & 3 *ha*	45.84	2.05	0.56	1.52
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	3.31	0.37	0.13	0.19
Listed Buildings	23	0	2	4
Licenced Abstractions (LA)	0	0	0	0

11.20 Glyncorrwg

11.20.1 Glyncorrwg Area of Flood Risk

Glyncorrwg ward covers an area of 1,993 hectares and has a population of approximately 1,200. The ward is home to the Glyncorrwg ponds, which covers 9000 acres of the Afan Forest Park. The village sits at the confluence of two valleys and their respective watercourses merge to become the Afon Corrwg. The village is surrounded by hills and mountains whose streams and brooks feed the Corrwg.

11.20.2 Conclusions from the Flood Extent Map

The flood extent map shows that fluvial flood risk dominates the Glyncorrwg community. Numerous small watercourses merge and pass through the village which may be exaggerating the fluvial flood risk through the village.

11.20.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Glyncorrwg. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Approaches to/from Heol-y-glyn/Cymmer Rd – Roadside ditches historically experienced flooding. Continual monitoring and maintenance of the remediation works already undertaken at the location. **See Measures NPT05 & NPT06. Measure type: M24, M35**

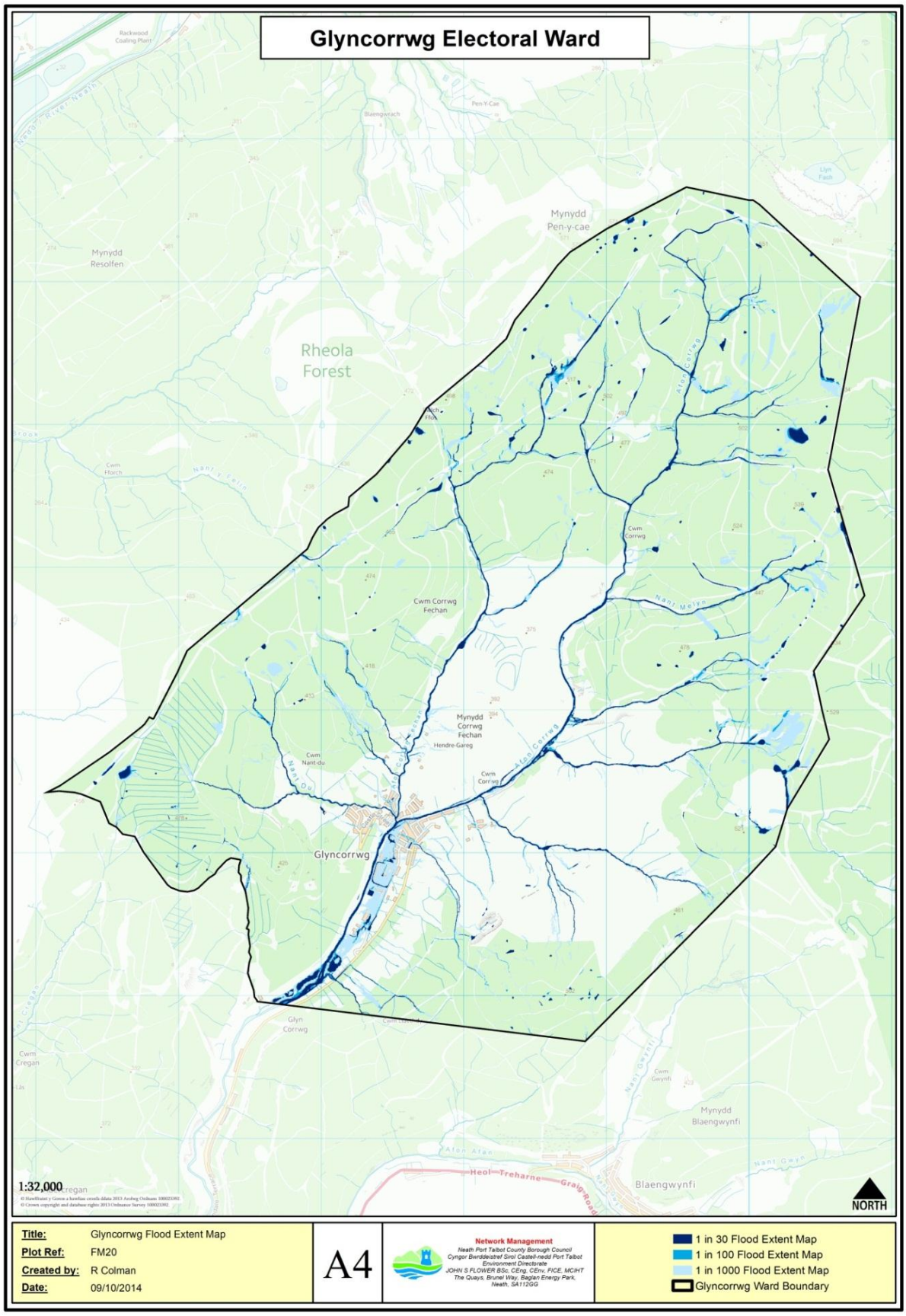


Figure 27: Glyncorrwg Flood Extent Map

Table 27: Glyncorrwg Property Count

Risk Area - Glyncorrwg	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	507	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	166	156	7	3
People (multiplier 2.35)	390	367	16	7
Residential Properties at Risk of Flooding (200 mm Depth)	95	91	2	2
People (multiplier 2.35)	223	214	5	5
Services	1	0	0	0
Risk to Economic Activity				
Non-Residential Properties	133	0	0	0
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.03	0.00	0.00	0.00
Listed Buildings	3	0	0	0
Licenced Abstractions (LA)	2	0	0	2

11.21 Glynneath

11.21.1 Glynneath Area of Flood Risk

Glyneath is a large ward, covering 2,595 hectares, in the north-east of the county, bordering on the Brecon Beacons National Park. The population is primarily found within Glynneath village, numbering approximately 3,600 people. The village lies alongside the River Neath. There are a number of watercourses across the ward, including a number of waterfalls. The geography is primarily rural upland and large areas are heavily forested. Almost all development is along the glaciated valley floor.

The numerous watercourses channel and drain a substantial area of the Northern valley side; unfortunately they move most of it through or past Glynneath. The Nant Ysgwrfa, Nant Pergwm and Nant Gwyddyl water courses are in fact multiple streams, brooks and tributaries that merge into these three systems as they reach the village. All then pass through the village and ultimately all of them discharge into the Neath River. There is an additional watercourse that is unnamed which passes Rock Street and along Lancaster Close which has a history of causing flooding in properties on these streets. In 2008 a project appraisal report was produced to determine what may be done to alleviate this problem, several proposals were made in this report but all of them require levels of funding prohibitive to the authority at this time. Welsh Government grant funding would be required to achieve a significant flood risk reduction in that area.

11.21.2 Conclusions from the Flood Extent Map

Glynneath has the highest percentage of properties at risk from flooding in the county with over 65% of properties being at some level of risk. Ten areas of potential risk have been identified from the extent map, targetting these areas would go a long way to alleviate the risk to a lot of adjacent properties. In

addition, the Morfa Glas area of Glynneath is high on the Natural Resources Wales 'Community Risk Register' and they have established , through extensive modelling, that there is likely to be an increased flood risk from the ordinary watercourse flowing through the council owned land at Morfa Glas. This is supported by the extent map which identifies two areas of risk in Morfa Glas, adjacent to the watercourse mentioned.

The areas of potential flood risk identified on the map can be classified as follows; of the ten highlighted areas of significant risk, eight are fluvial, two are pluvial and six have previous histories of flooding. From this information it can be postulated that the culverts, channels and pipes that carry the various watercourses must have insufficient capacity at some point to prompt the risk of surface water flooding due to capacity failure. However this should be investigated and surveyed so actual capacities can be established. In the case of the sites with a history of flood events, the nature of the problem may already be identified. The Project Appraisal Report for Rock Street and Lancaster Close is detailed on this point.

It would be beneficial to conduct extensive additional site investigations across the village to identify all existing infrastructure not presently known and its condition or state of repair, as well as how the systems fit together and capacities. Subsequently the weak points and bottle necks in the system can be readily identified and proposals can be made to alleviate or relieve the risk of flooding at those locations.

11.21.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Glynneath. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

A P.A.R. was completed in 2008 for a flood alleviation scheme at Rock Street, Lancaster Close and Addoldy Road – approximately £1M worth of works required. Cost prohibitive at this time and would only be able to be completed through alternative funding arrangements. Re-development and new development within the catchement presents an oppurtunity to up size the existing system. Continue monitoring, inspections and maintenance of the system to maximise resilience to flooding. **See Measures NPT05 & NPT06. Measure type M24, M35**

Below is a table of the culvert inlets identified, monitored and maintained within Glynneath. This has been included as these intakes are critical in maximising resiliance to flood risk within the community. **See Measure NPT05 & NPT06. Measure type M24, M35**

Table 28: Glynneath Culverts

Culvert No.	X Co-ord	Y-Co-ord	Debris Screen
CUL_0030	286804	205908	Yes
CUL_0031	287139	206159	Yes
CUL_0032	287457	206384	No
CUL_0033	287000	206323	No
CUL_0328	287129	206545	No
CUL_0405	287392	206325	No
CUL_0414	287579	206647	No
CUL_0404	287614	206475	Yes
CUL_0413	287942	206738	No
CUL_0556	287965	206595	No
CUL_0567	287563	206754	No
CUL_0568	287578	206723	No
CUL_0569	287577	206678	No
CUL_0609	287511	206625	No
CUL_0599	288498	206887	No
CUL_0884	287584	206526	No
CUL_0919	287792	206544	No
CUL_1108	288807	206842	Yes
CUL_1152	284797	205170	No
CUL_1308	287671	206496	No
CUL_1305	289247	206641	Yes
CUL_0540	287941	206698	No
CUL_1324	287128	206540	No

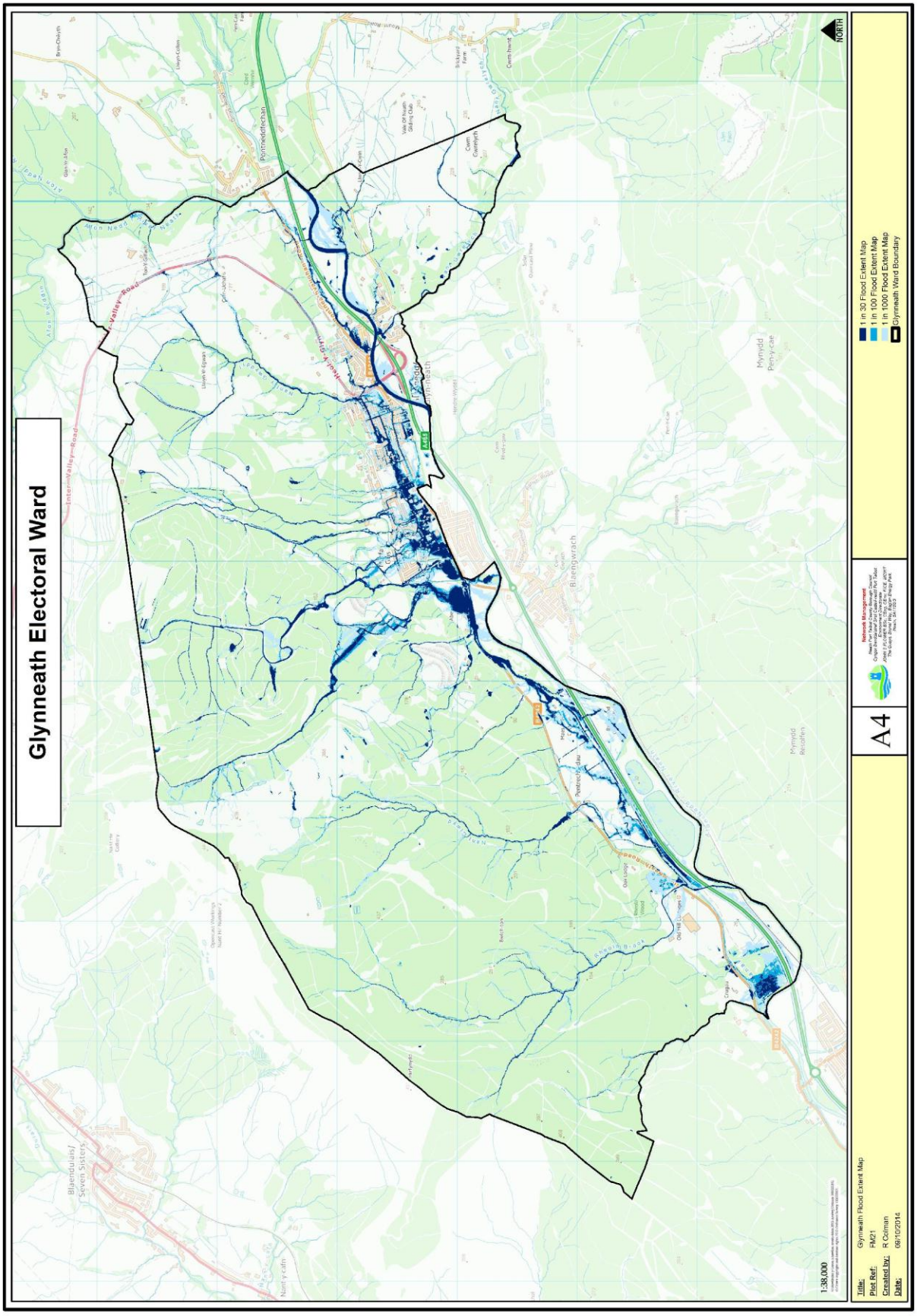


Figure 28: Glynneath Flood Extent Map

Table 29: Glynneath Property Count

Risk Area - Glynneath	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1623	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	811	424	185	202
People (multiplier 2.35)	1906	996	435	475
Residential Properties at Risk of Flooding (200 mm Depth)	538	335	87	116
People (multiplier 2.35)	1264	787	204	273
Services	4	3	1	0
Risk to Economic Activity				
Non-Residential Properties	506	99	36	72
Airports	0	0	0	0
Motorway/Trunk Roads *km*	13.41	0.17	0.09	0.38
Mainline Railways *km*	0.84	0.05	0.00	0.03
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	24.21	1.28	0.43	1.46
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	35.92	2.22	0.74	2.83
Parks and Gardens *ha*	20.47	4.03	0.45	0.42
Scheduled Ancient Monuments *ha*	0.81	0.03	0.01	0.42
Listed Buildings	27	5	1	5
Licenced Abstractions (LA)	1	0	0	1

11.22 Godre'r Graig

11.22.1 Godre'r Graig Area of Flood Risk

Godre'r Graig lies in the north east of the county near the head of the upper Swansea valley. Covering an area of 307 hectares, much of which is along the bottom of the valley, it has a population of approximately 1,500. The north western part of the ward consists of woodland and pasture. The ward is bounded by the wards of Ystalyfera to the north; Rhos to the southeast; and Pontardawe to the west. In addition to the Tawe flowing through the middle there are also an unknown number of watercourses, both natural and irregular - minewater runoffs that surface at different times and in different conditions. There is an extensive landslip area covering much of the hillside above the village which affects the flows and paths of the various water sources that originate within it.

11.22.2 Conclusions from the Flood Extent Map

Further investigation of the indicated flood extents is required across the community. It is possible that the fluvial flood risk is exaggerated by the prevalence of small unnamed watercourses.

11.22.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Godre'r Graig. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Graig Newydd estate – Existing intake structure/Swansea canal – ensure continual maintenance regime. **See Measures NPT05 & NPT06. Measure type: M24, M35**

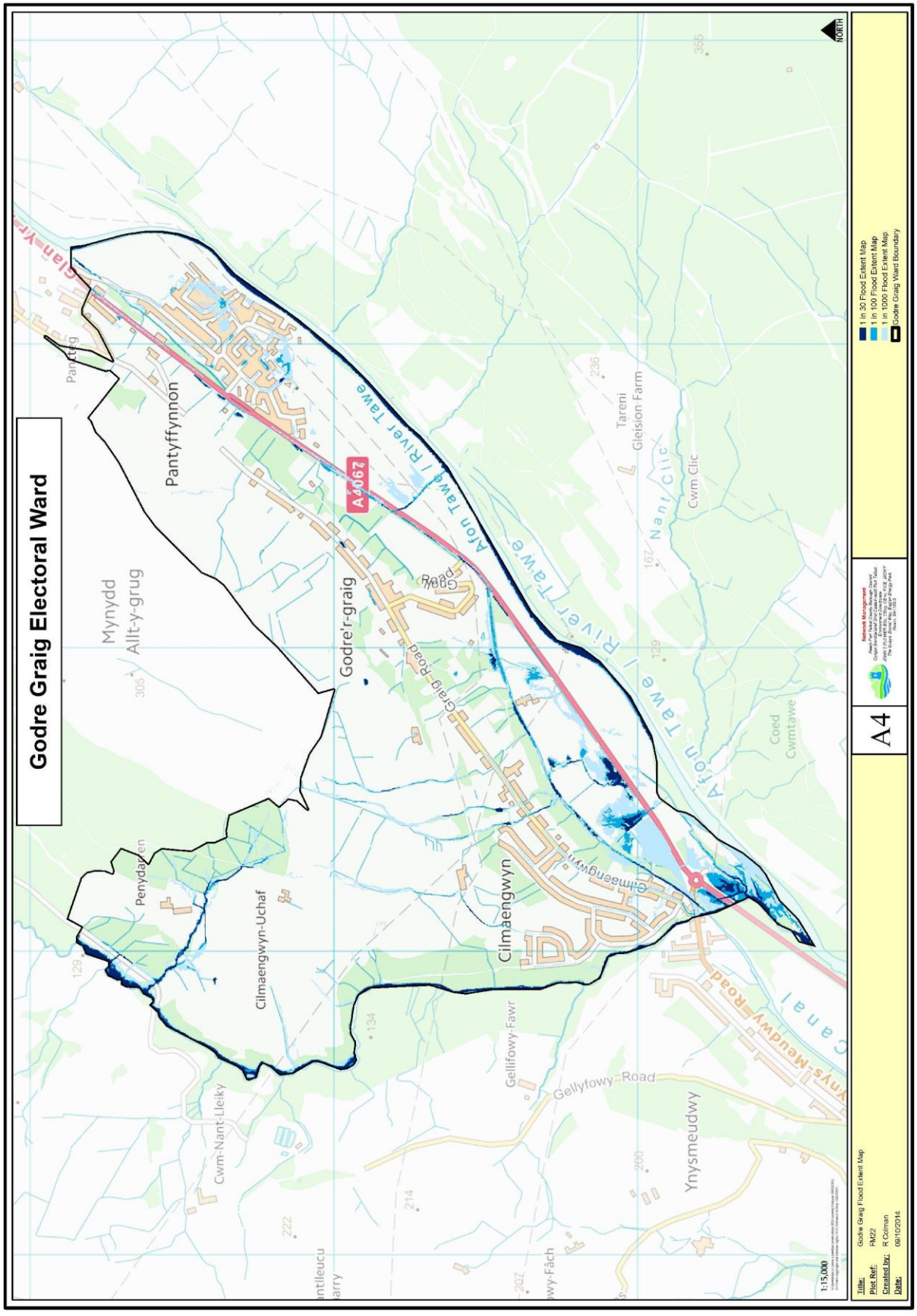


Figure 29: Godre'r graig Flood Extent Map

Table 30: Godre'r graig Property Count

Risk Area - Godregraig	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	734	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	21	20	1	0
People (multiplier 2.35)	49	47	2	0
Residential Properties at Risk of Flooding (200 mm Depth)	12	12	0	0
People (multiplier 2.35)	28	28	0	0
Services	0	0	0	0
Risk to Economic Activity				
Non-Residential Properties	196	0	0	0
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	6.61	0.44	0.20	1.18
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.75	0.03	0.01	0.01
Listed Buildings	6	1	0	2
Licenced Abstractions (LA)	1	0	0	1

11.23 Gwaun-Cae-Gurwen

11.23.1 Gwaun-Cae-Gurwen Area of Flood Risk

Gwaun-Cae-Gurwen and Cwmgors villages lie along the route of the A474, with the county boundary to the west and rural upland areas to the East. The upper reaches of the Garnant River pass along the same route and numerous smaller watercourses criss-cross the ward and join the river West of the main road. The Ward covers an area of 574 hectares and has a population of approximately 2,900.

11.23.2 Conclusions from the Flood Extent Map

The extent map does not indicate widespread flood risks, but suggests numerous potential fluvial flood risks. Some of which may be exaggerated by the presence of so many small watercourses.

11.23.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Gwaun-Cae-Gurwen. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Several large intake structures are located within the amenity area, local trotting club in Tairgwaith and were formerly maintained by Lliw Valley Council. Continual cleansing required maximising resilience against flooding. **See Measures NPT05 & NPT06. Measure type: M24, M35**

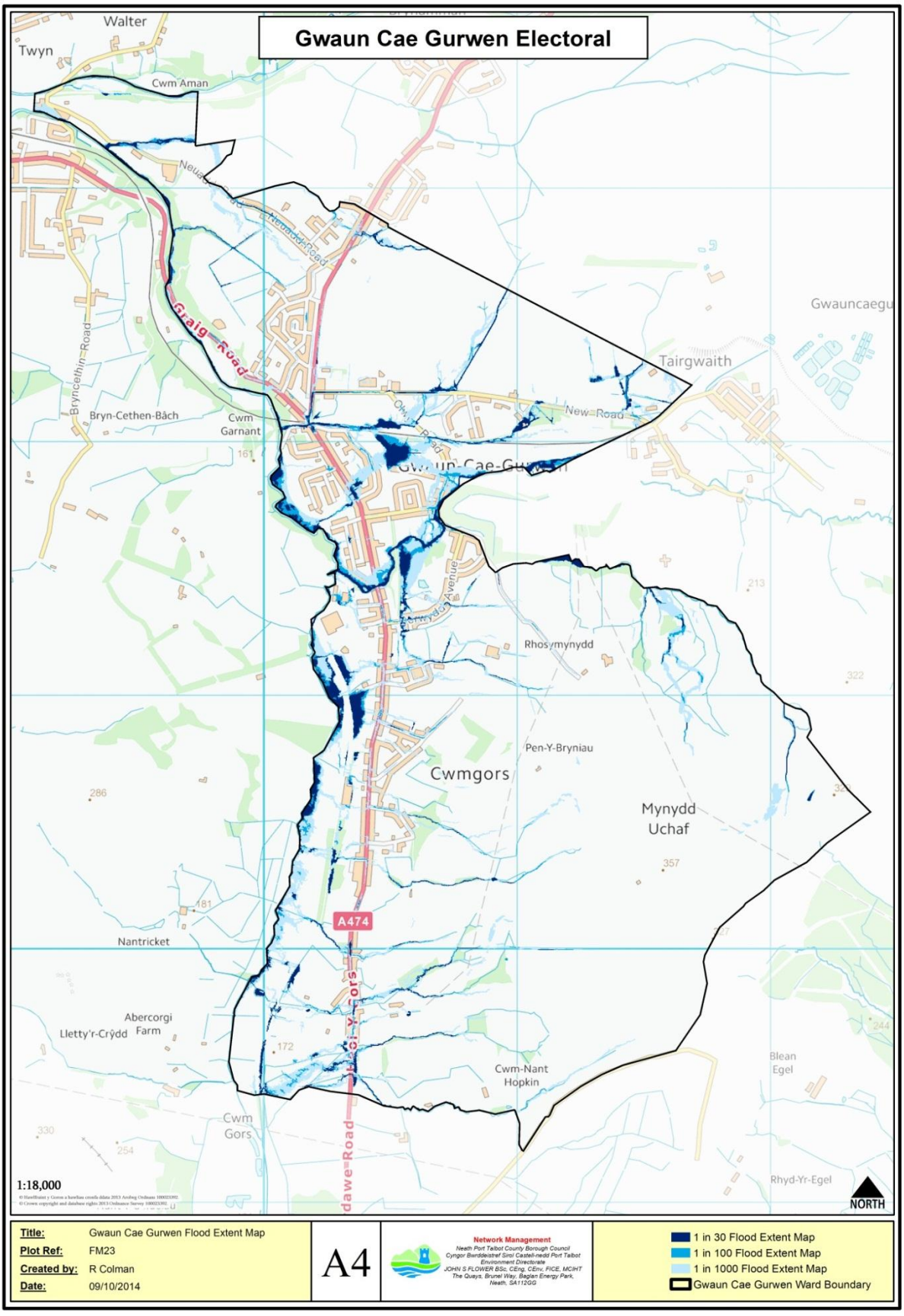


Figure 30: Gwaun-Cae-Gurwen Flood Extent Map

Table 31: Gwaun-Cae-Gurwen Property Count

Risk Area - Gwaun Cae Gurwen	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1347	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	133	106	17	10
People (multiplier 2.35)	313	249	40	24
Residential Properties at Risk of Flooding (200 mm Depth)	51	39	11	1
People (multiplier 2.35)	120	92	26	2
Services	2	0	0	0
Risk to Economic Activity				
Non-Residential Properties	298	16	5	2
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	1.23	0.34	0.20	0.18
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.01	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	3	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.24 Gwynfi

11.24.1 Gwynfi Area of Flood Risk

Gwynfi ward covers the upper reaches of the Afan Valley, in the eastern most ward of the county. The twin villages of Blaengwynfi and Abergwynfi are the population centres, home to most of the population of nearly 1,600. The ward covers 1,241 hectares. The villages lie together near the bottom of the valley, with the extent of the Gwynfi River lying within the ward. The villages are surrounded by upland moors and forested mountains whos springs and brooks feed the river. To the east the land rises significantly to the head of the Rhondda Valley.

11.24.2 Conclusions from the Flood Extent Map

The extent map indicates that the dominant flood risk comes from the small watercourses that converge and pass through the villages. The projected flood risk may be exaggerated by these numerous watercourses. The extent map doesn't reflect the sections of the watercourses that are ducted through parts of the village – minimising the flood threat through these stretches.

11.24.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Gwynfi. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Nant Gwyn watercourse – Culverted between Margaret & Western Terrace. Maintained by the Coal Authority. **See Measure NPT07. Measure type: M24, M35**

Several streams are culverted situated along the A4107 – Bwlch mountain road to the boundary with Bridgend. **See Measure NPT06. Measure type: M24, M35**

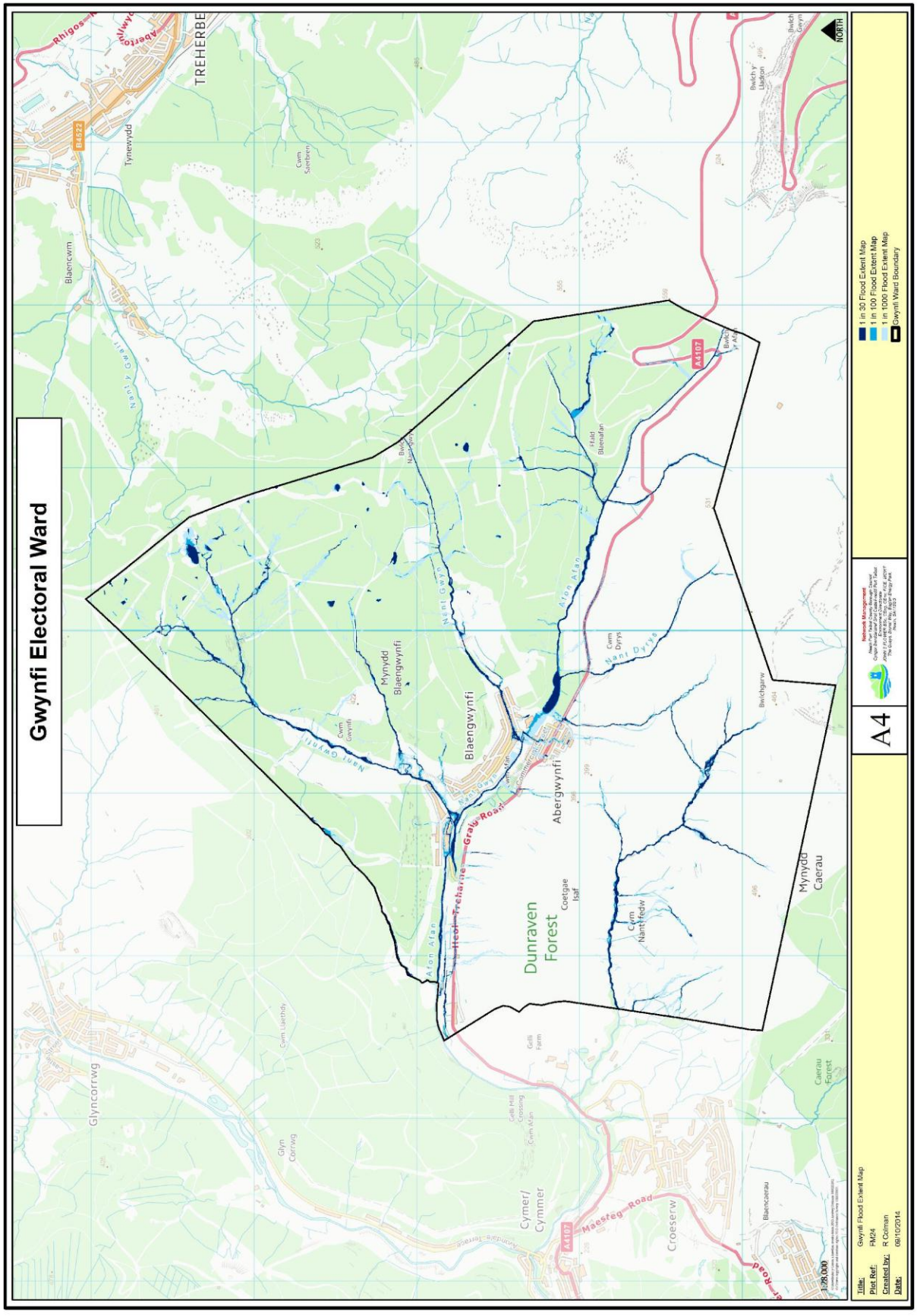


Figure 31: Gwynfi Flood Extent Map

Table 32: Gwynfi Property Count

Risk Area - Gwynfi	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	676	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	68	58	4	6
People (multiplier 2.35)	160	136	9	14
Residential Properties at Risk of Flooding (200 mm Depth)	7	3	4	0
People (multiplier 2.35)	16	7	9	0
Services	2	0	0	0
Risk to Economic Activity				
Non-Residential Properties	115	11	3	0
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.06	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	0	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.25 Lower Brynamman

11.25.1 Lower Brynamman Area of Flood Risk

Lower Brynamman is the most northerly ward in the county, covering an area of 791 hectares and populated by approximately 1,400 people. The ward has two distinct and separate villages, Lower Brynamman and Tairgwaith. Large swathes of the surrounding countryside are given over to open-cast mine workings and resultant spoil has reshaped the landscape, tiered and battered into hills. The terrain is generally classed as upland moorland with a few farms to the south of Tairgwaith. The watercourses in the area are adjacent to or pass through the villages.

11.25.2 Conclusions from the Flood Extent Map

The extent map indicates risk of fluvial flooding from numerous small watercourses. Large parts of the open country in this area are owned and managed by the Coal Authority, indeed the landscape is defined by the industry, with open cast sites, landscaped tips and settling ponds to manage run off from tips. It is anticipated that the risk is overstated from these watercourses as a lot of them are man-made channels and are carefully managed.

11.25.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Lower Brynamman. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Maes y Glyn – potential flood risk from culverted watercourse, previous history. Survey and investigation required verifying flood map extents at this location. **See Measures NPT02 & NPT04. Measure type: M24, M44**

Llwyncelyn Road – flood map indicates low –high risk. Doesn't account for a number of inlets. Asset survey and model to discount flood mapping at this location. **See Measures NPT02 & NPT04. Measure type: M24, M44**

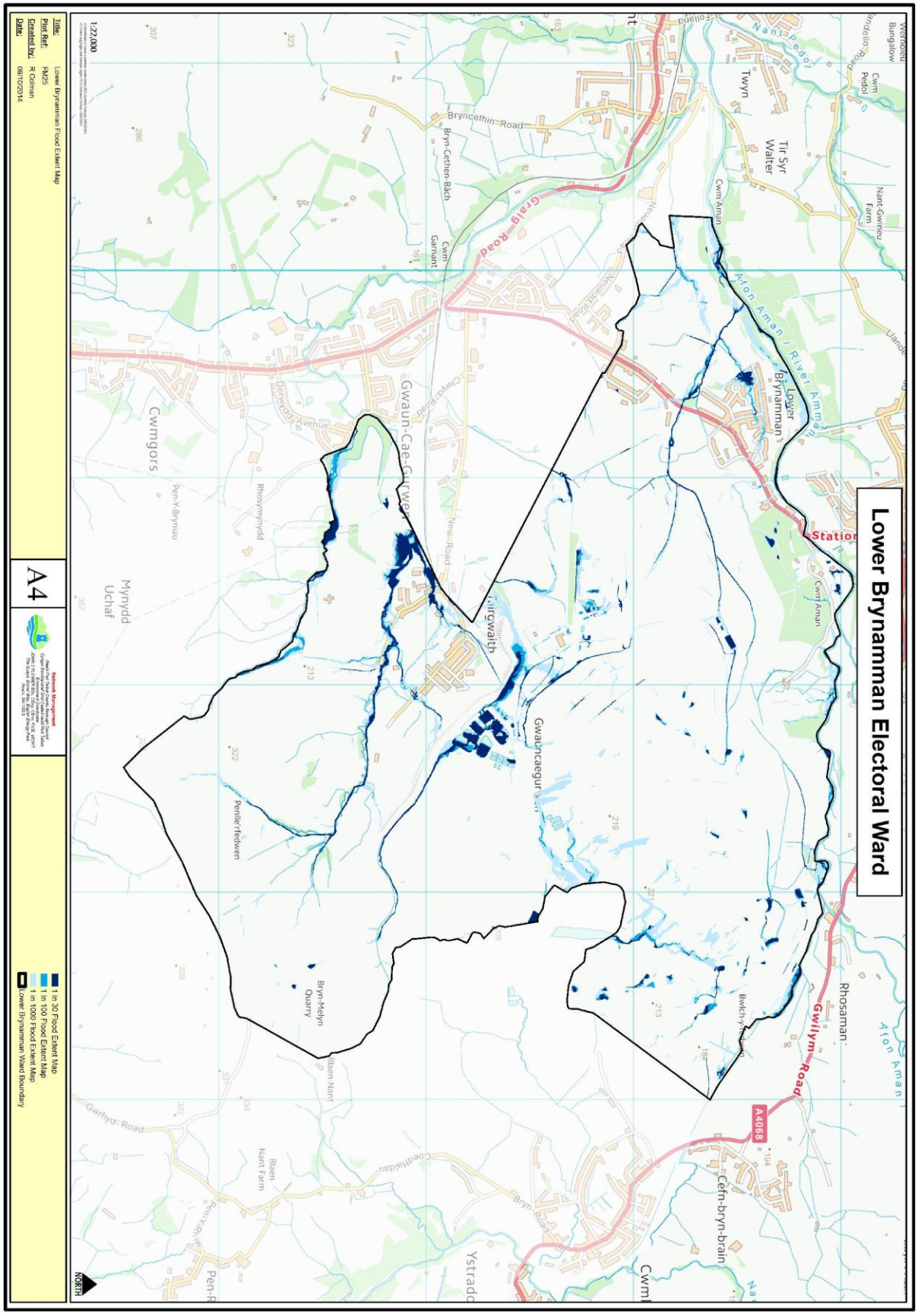


Figure 32: Lower Brynamman Flood Extent Map

Table 33: Lower Brynamman Property Count

Risk Area - Lower Brynamman	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	616	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	34	26	3	5
People (multiplier 2.35)	80	61	7	12
Residential Properties at Risk of Flooding (200 mm Depth)	17	12	0	5
People (multiplier 2.35)	40	28	0	12
Services	1	0	0	0
Risk to Economic Activity				
Non-Residential Properties	148	3	1	3
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.61	0.14	0.06	0.14
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	4.56	0.33	0.09	0.39
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	3	0	0	0
Licenced Abstractions (LA)	4	4	2	0

11.26 Margam

11.26.1 Margam Area of Flood Risk

The ward includes Margam Country Park, an estate of around 345 hectares. The ward itself covers an extensive 4912 hectares. The population is approximately 2,400. Margam is an extremely diverse ward in terms of environment and ecology. There are dune systems, moorland, marshland, woods and forest and upland hills and mountains. There are no large rivers, but there are numerous and extensive streams and brooks and the large raised reservoir of Eglwys Nunydd is fed by many of them. Margam is home to an extensive industrial complex along its coastline, including the steelworks around which the area grew. It also carries the motorway through to Port Talbot.

11.26.2 Conclusions from the Flood Extent Map

The extent map indicates some risk of fluvial flooding from numerous small watercourses. However a substantial area of the community is natural sand dune systems or is built on areas of the same.

11.26.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Margam. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Coed Hirwaun Catchment survey / flood modelling. **See Measures NPT02 & NPT03. Measure type: M24, M44**

Water Street, Margam – further investigation & on-going maintenance. **See Measures NPT04 & NPT06. Measure type: M24, M35**

Brombil – Cwm y Brombil – Arnallt Brook: Investigate. **See Measure NPT04. Measure type: M24**

Margam, Twelve Knights culvert – to be considered for *CRITICAL* priority. Recent capital scheme completed to alleviate flood risk. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Toll Gate inlet – to be considered for *HIGH* priority status. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Ffrwd Wyllt culvert. **See Measures NPT05 & NPT06. Measure type: M24, M35**

SUD system built as part of the PDR at Ffrwd Wyllt. Survey, Inspect and maintain. **See Measures NPT02, NPT05 & NPT06. Measure type: M24, M35, M44**

Port Talbot Magistrates pumping station – Inspect and maintain. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Oakwood Road / Cramic Way Area. **See Measure NPT04. Measure type: M24**

Penybryn to Pyle – various ditching and existing highway systems within and around the village that require regular maintenance to reduce flood risk. **See Measure NPT06. Measure type: M24, M35**

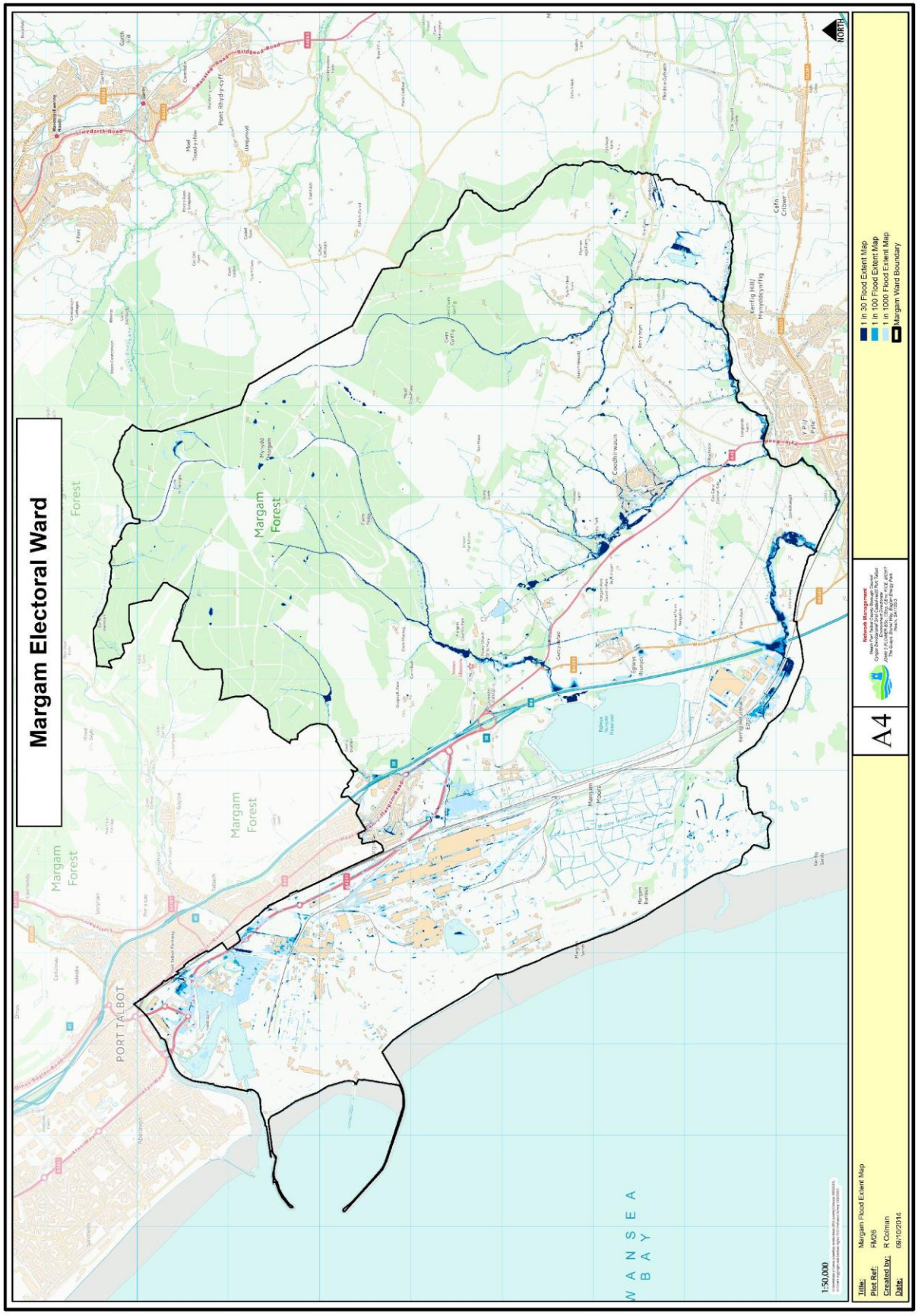


Figure 33: Margam Flood Extent Map

Table 34: Margam Property Count

Risk Area - Margam	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1289	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	117	102	9	6
People (multiplier 2.35)	275	240	21	14
Residential Properties at Risk of Flooding (200 mm Depth)	34	31	2	1
People (multiplier 2.35)	80	73	5	2
Services	5	0	0	0
Risk to Economic Activity				
Non-Residential Properties	2350	176	39	12
Airports	0	0	0	0
Motorway/Trunk Roads *km*	12.09	1.58	0.53	0.40
Mainline Railways *km*	21.59	0.84	0.06	0.03
Agricultural Land - Grades 1, 2 & 3 *ha*	204.90	3.00	1.27	1.57
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	11	1	0	0
Special Areas of Conservation (SAC) *ha*	0.26	0.01	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	223.25	6.63	1.33	0.56
Parks and Gardens *ha*	320.81	11.38	2.89	6.95
Scheduled Ancient Monuments *ha*	31.28	0.31	0.15	0.17
Listed Buildings	58	2	0	2
Licenced Abstractions (LA)	18	4	1	2

11.27 Neath East

11.27.1 Neath East Area of Flood Risk

Neath East is predominantly an urbanised ward, wih a number of boroughs of Neath town found within it. To the West the ward extends to include the marshland of the river flood plain. To the East it also encapsulates the higher ground of Pencaerau and Cupola wood. The ward covers 312 hectares and has a population of approximately 6,000. It is bounded by the Neath River to the north-west.

11.27.2 Conclusions from the Flood Extent Map

Extensive areas of the communuity are shown at risk as high risk and similar size areas at lower risk.

Grandison Brook – Subject of a P.A.R.

11.27.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Neath East. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Penrhiwtyn Area - Welsh Water combined system (**M24**) - liaise with WW to improve / ensure continued maintenance. **See Measure NPT07. Measure type: M24, M35**

Network Rail - own and maintain the ditch alongside A48. Liaise as required to ensure on-going inspection and maintenance. **See Measure NPT07. Measure type: M24, M35**

Gardener's Lane inlet - review priority and on-going maintenance. **See Measure NPT06. Measure type: M24, M35**

Foundry Road inlet (Cryddan Brook). **See Measure NPT05 & NPT06. Measure type: M24, M35**

St.Catherine's Close Inlet - recent capital scheme was done to improve flow rate & reduce flood risk on Briton Ferry Road. Inspect and maintain regularly. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Melincryddan Area (M24) - Primarily WW owned combined sewers. (**M24**) liaise with WW as required to ensue on-going maintenance. **See Measure NPT07. Measure type: M24, M35**

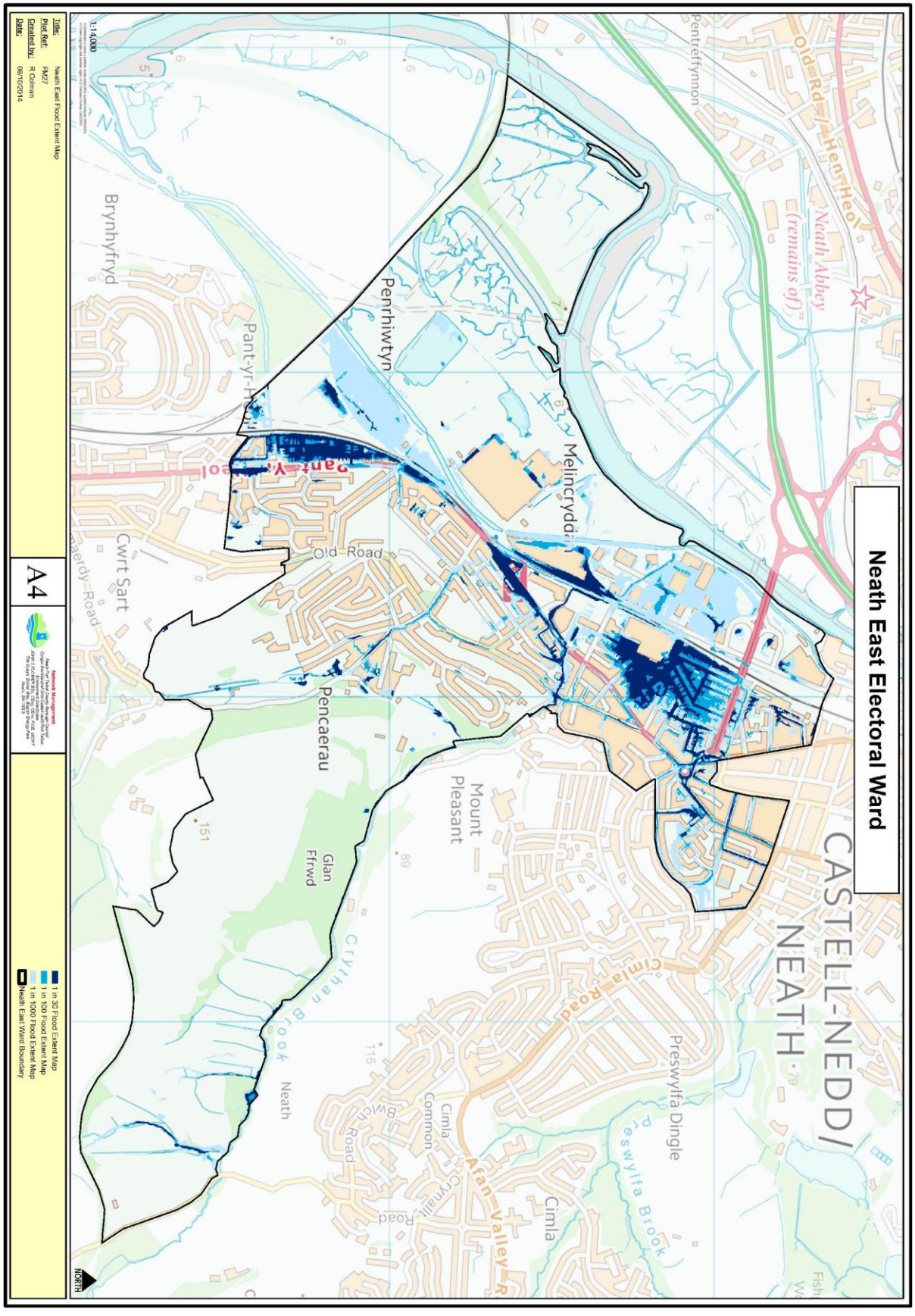


Figure 34: Neath East Flood Extent Map

Table 35: Neath East Property Count

Risk Area - Neath East	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	3241	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	1139	451	245	443
People (multiplier 2.35)	2677	1060	576	1041
Residential Properties at Risk of Flooding (200 mm Depth)	879	359	227	293
People (multiplier 2.35)	2066	844	533	689
Services	3	1	0	0
Risk to Economic Activity				
Non-Residential Properties	451	90	17	33
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	3.06	0.74	0.00	0.01
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.52	0.00	0.00	0.00
Listed Buildings	5	0	0	1
Licenced Abstractions (LA)	0	0	0	0

11.28 Neath North

11.28.1 Neath North Area of Flood Risk

Neath North is mainly the urban town centre and adjacent town boroughs of Neath. In the east it encompasses the western side of Gnoll Country Park. The ward covers an area of 166 hectares and has a population 3,848. Significant features include the railway station, historical buildings such as the castle and the Gwynn Hall.

11.28.2 Conclusions from the Flood Extent Map

The extent map indicates some extensive surface water flooding that is not corroborated by historic or anecdotal evidence. Further investigation is required.

11.28.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Neath North. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Gnoll Interceptor. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Ivy Avenue culvert. Inspect and monitor. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Llantwit Road Cemetery Inlet - Inspect and monitor. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Gully & Culvert situated on Fairyland Road, outside Cemetery – Inspect and Monitor. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Fairyland House Inlet. **M24**. Riparian – liaise with owner to ensure maintenance. **See Measure NPT07. Measure type: M24, M35**

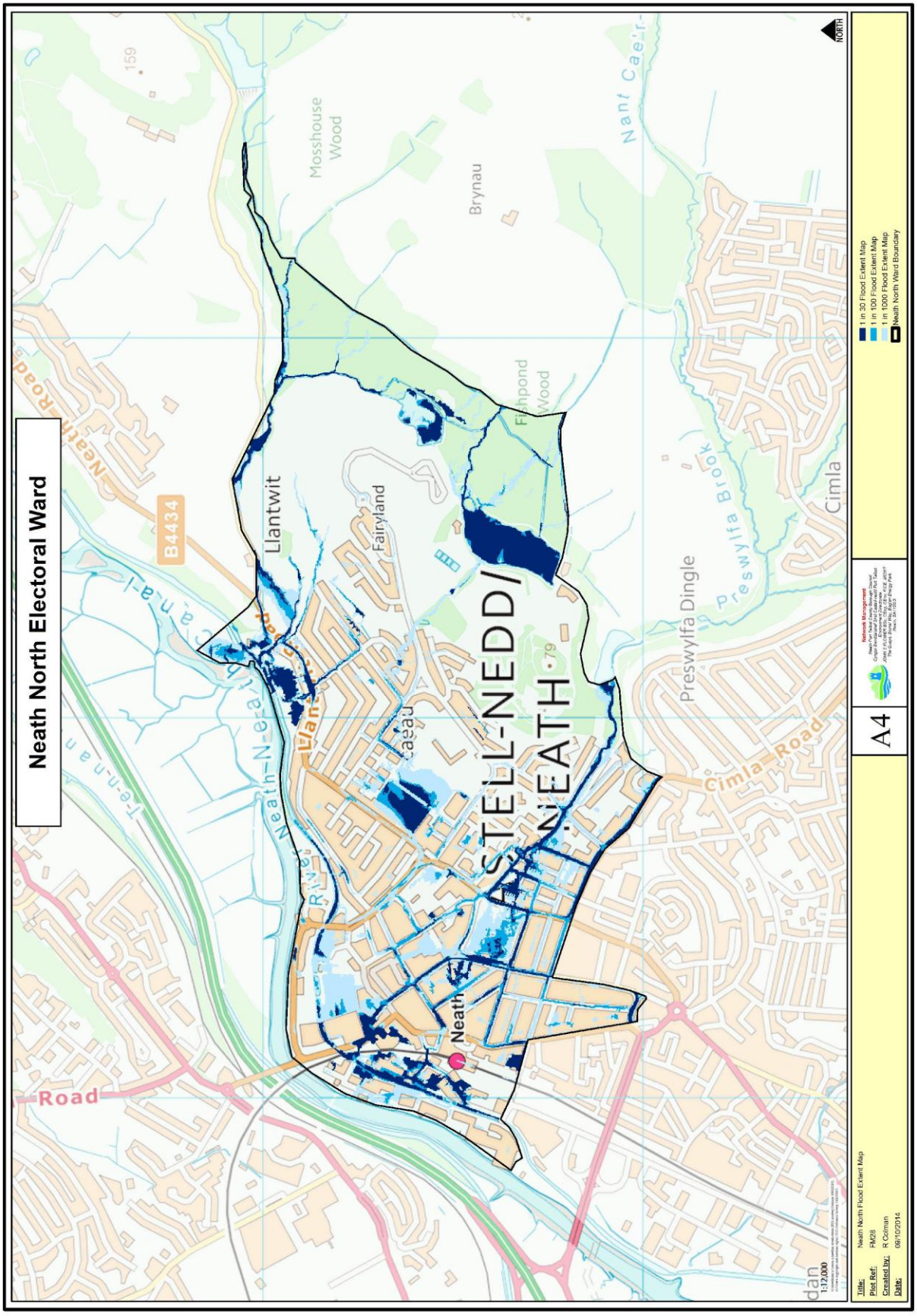


Figure 35: Neath North Flood Extent Map

Table 36: Neath North Property Count

Risk Area - Neath North	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	2084	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	342	250	41	51
People (multiplier 2.35)	804	588	96	120
Residential Properties at Risk of Flooding (200 mm Depth)	226	167	19	40
People (multiplier 2.35)	531	392	45	94
Services	4	2	0	0
Risk to Economic Activity				
Non-Residential Properties	810	216	63	63
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.58	0.09	0.00	0.02
Agricultural Land - Grades 1, 2 & 3 *ha*	1.70	0.38	0.20	0.24
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	58.88	3.54	1.23	4.25
Scheduled Ancient Monuments *ha*	0.14	0.01	0.00	0.00
Listed Buildings	55	3	2	3
Licenced Abstractions (LA)	0	0	0	0

11.29 Neath South

11.29.1 Neath South Area of Flood Risk

The ward of Neath South covers an area of only 150 hectares but has a population of approximately 4,700. It is primarily urban development, incorporating the lower lying areas of Cimla and Mount Pleasant. To the east the terrain rises to the community of Cimla.

11.29.2 Conclusions from the Flood Extent Map

The flood extents for this community are not widespread. The risk from small watercourses is thought to be exaggerated by the model.

11.29.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Neath South. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

The following have been identified:

Cimla Road – Investigation of the accumulation of flood water illustrated by the flood extent maps & maintenance of the flood defence assets. **See Measures NPT04 & NPT06. Measure type: M24, M35**

Eastland Brook – Investigate ownership & establish maintenance regime. **See Measure NPT07. Measure type: M24, M35**

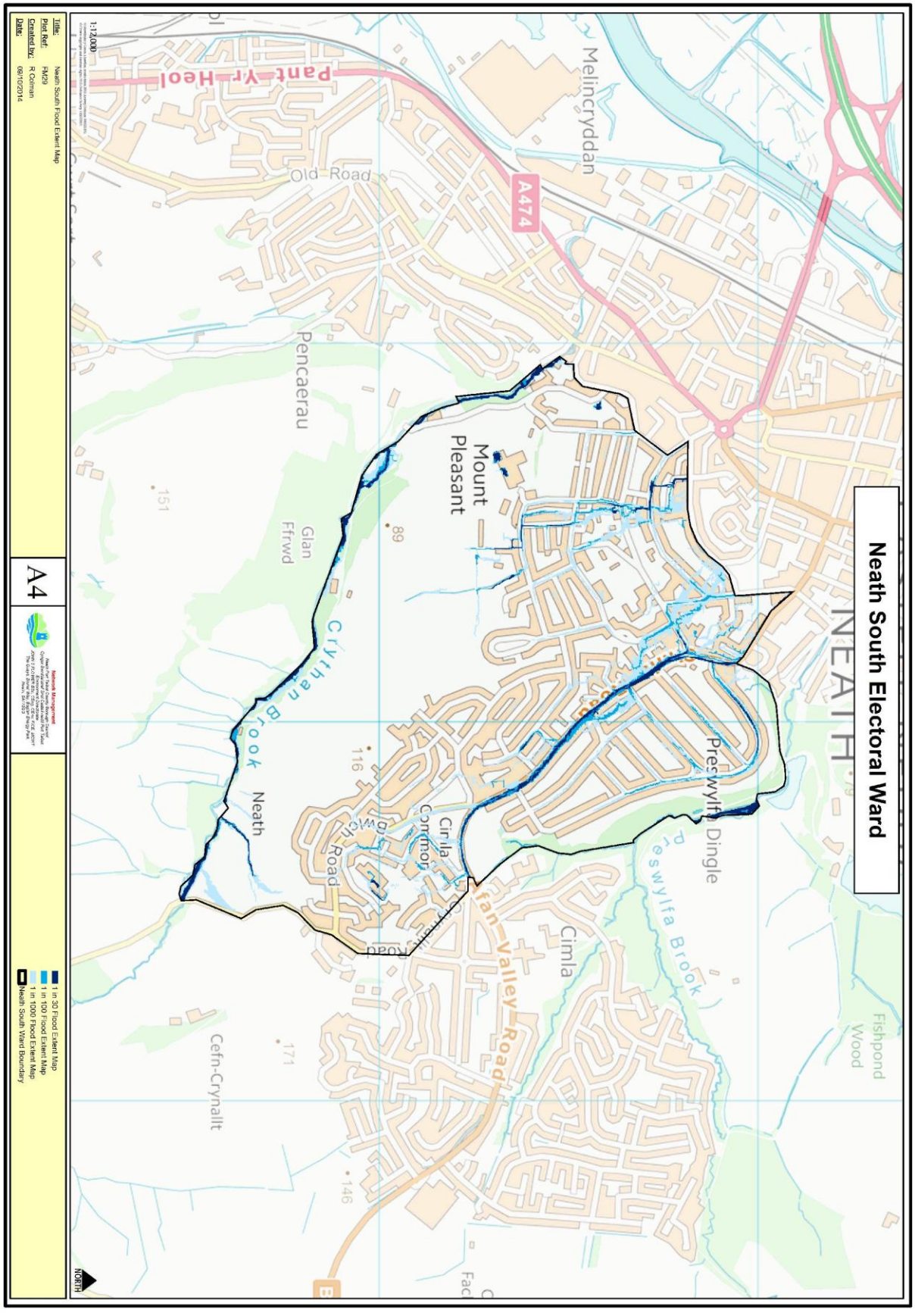


Figure 36: Neath South Flood Extent Map

Table 37: Neath South Property Count

Risk Area - Neath South	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	2116	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	139	125	14	0
People (multiplier 2.35)	327	294	33	0
Residential Properties at Risk of Flooding (200 mm Depth)	20	19	1	0
People (multiplier 2.35)	47	45	2	0
Services	3	0	0	0
Risk to Economic Activity				
Non-Residential Properties	162	15	1	2
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	3.89	0.14	0.06	0.25
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	1	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.30 Onllwyn

11.30.1 Onllwyn Area of Flood Risk

Onllwyn is a rural upland area, populated by approximately 1,250 people, it covers an area of 1,083 hectares. Except for the two small communities of Banwen and Dyffryn Cellwyn the area is rural upland, moorland and wooded hills and mountains. The area is criss-crossed by numerous watercourses, including a tributary of the upper Neath river.

11.30.2 Conclusions from the Flood Extent Map

The extent map indicates that only a small number of properties are likely to be affected by flooding in Onllwyn community.

11.30.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Onllwyn. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Monitoring and maintenance of the Camnant watercourse, Roman Rd, Banwen. Part local authority, part NRW ownership. **See Measures NPT05, NPT06 & NPT07. Measure type: M24, M35**

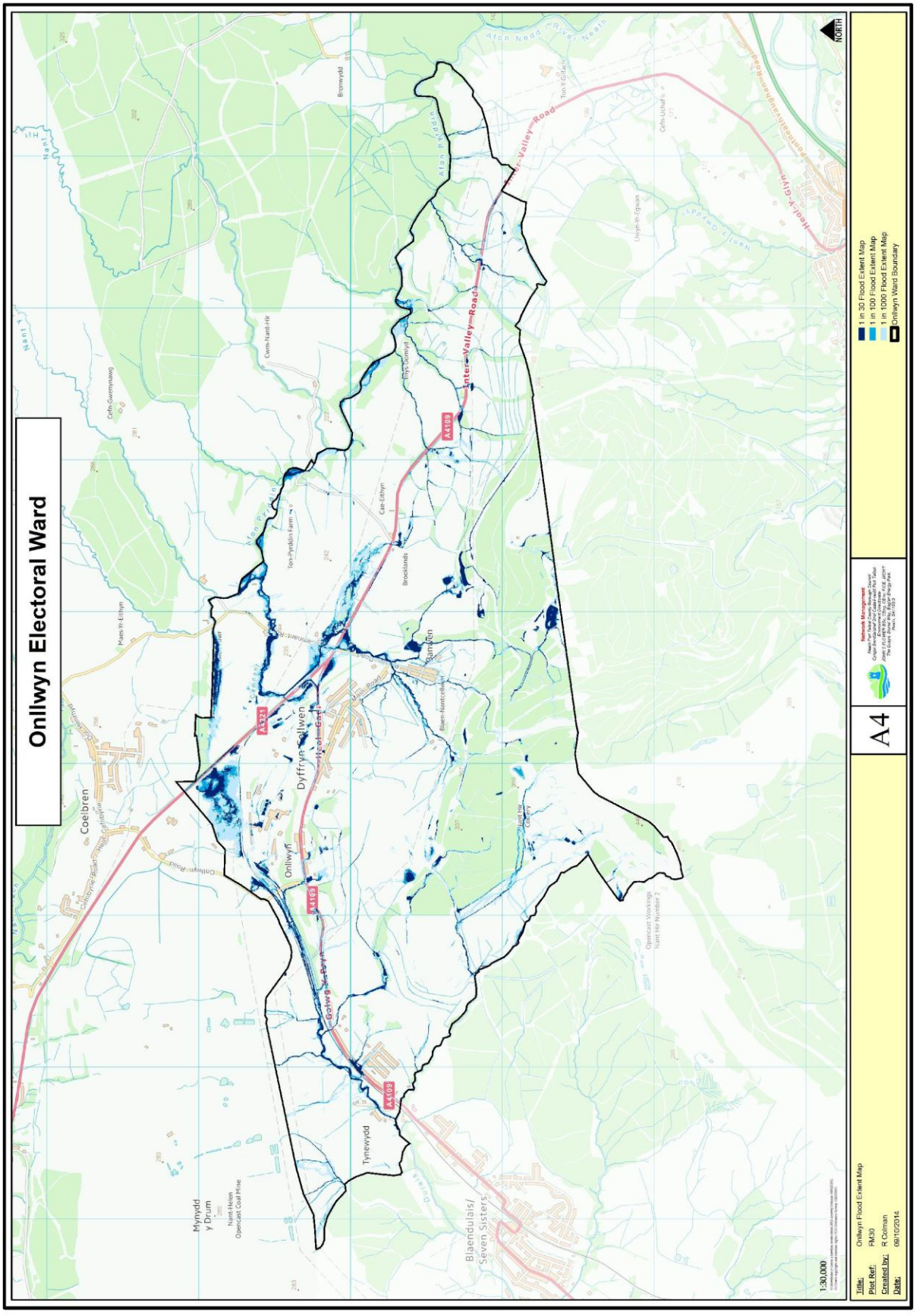


Figure 37: Onllwyn Flood Extent Map

Table 38: Onllwyn Property Count

Risk Area - Onllwyn	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	541	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	37	24	5	8
People (multiplier 2.35)	87	56	12	19
Residential Properties at Risk of Flooding (200 mm Depth)	17	9	2	6
People (multiplier 2.35)	40	21	5	14
Services	1	0	0	0
Risk to Economic Activity				
Non-Residential Properties	214	16	1	7
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	2.61	0.55	0.36	0.52
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	11.98	0.96	0.19	0.85
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	39.38	3.77	1.35	2.65
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	23.93	0.68	0.11	0.12
Listed Buildings	0	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.31 Pelenna

11.31.1 Pelenna Area of Flood Risk

Pelenna ward covers an area of circa 2,000 hectares and includes the communities of Cefn Saeson, Pontrhydyfen and Tonmawr. The River Pelenna flows through Tonmawr and Pontrhydyfen before it joins the Afan. Primarily a rural upland environment, it features steep, heavily forested hills and valley sides with upland moors and lowland marshlands. An extensive mine water remediation scheme has been in place for over ten years, allowing contaminated mine water to deposit its various contaminants in a series of settling ponds and reed beds before out-falling into the river. Previously managed by this Authority it has recently become the responsibility of the Coal Authority.

11.31.2 Conclusions from the Flood Extent Map

The map indicates that the majority of the flood risk in the community is fluvial and would not affect most properties.

A Project Appraisal Report for Dan y Coed, Tonmawr was completed in August 2008. Proposals are subject to future funding.

11.31.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Pelenna. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Rear of housing estate Dan-y-coed, Tonmawr – Several intake structures situated on NRW forestry land/Neath Port Talbot Homes/Private Riparian. **See Measure NPT07. Measure type: M24, M35**

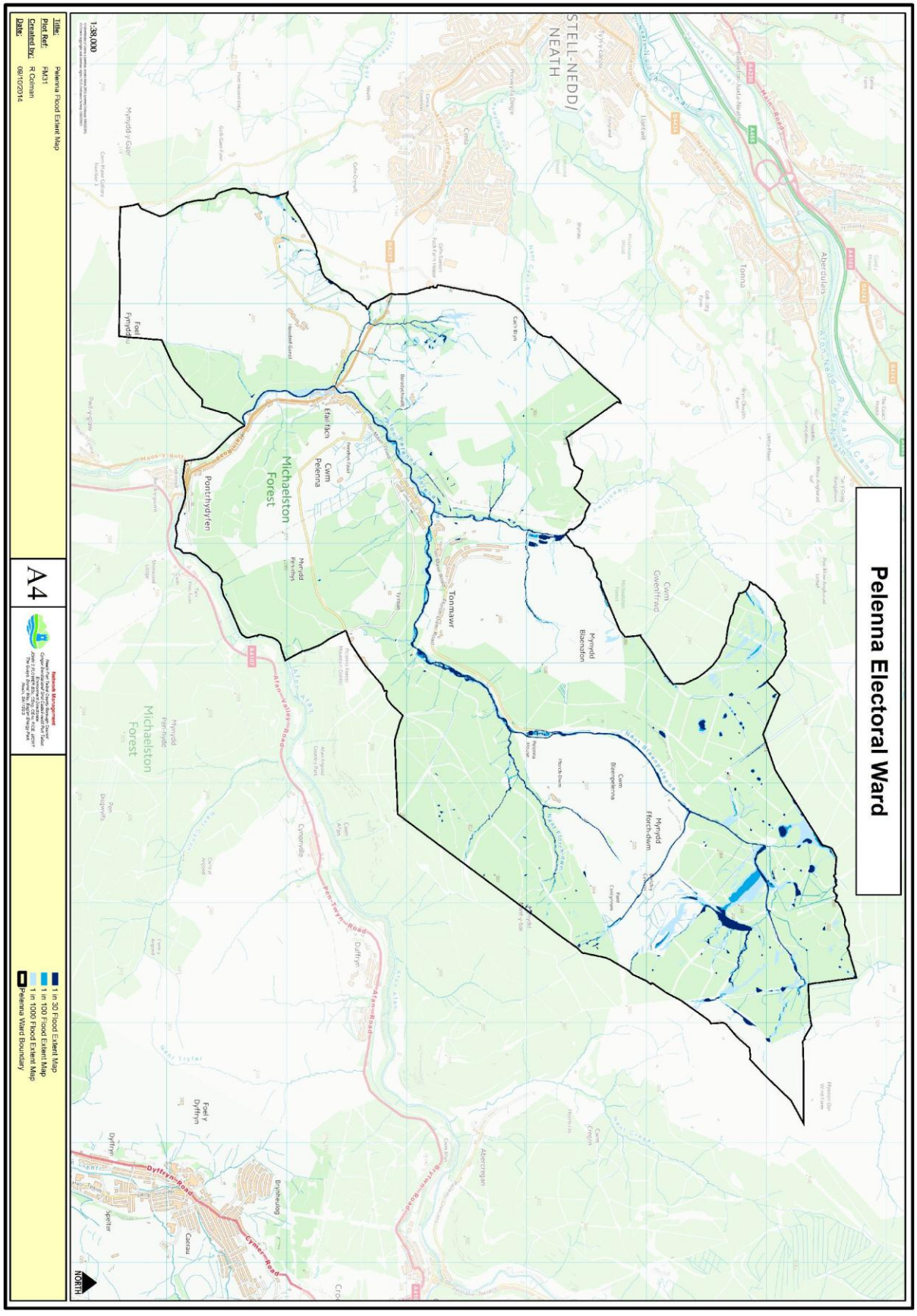


Figure 38: Pelenna Flood Extent Map

Table 39: Pelenna Property Count

Risk Area - Pelenna	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	536	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	14	14	0	0
People (multiplier 2.35)	33	33	0	0
Residential Properties at Risk of Flooding (200 mm Depth)	8	8	0	0
People (multiplier 2.35)	19	19	0	0
Services	4	0	0	0
Risk to Economic Activity				
Non-Residential Properties	255	7	3	0
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.80	0.00	0.00	0.00
Listed Buildings	4	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.32 Pontardawe

11.32.1 Pontardawe Area of Flood Risk

Pontardawe ward covers 2,903 hectares and is home to approximately 5,100 people. The town sits upon the banks of the River Tawe in the south of the ward, with the landscape rising to the north and west. The land use is predominantly rural upland, with extensive hill farms, moorland and woodland. The Amman valley holds the Upper Clydach River which joins the Tawe at Pontardawe. The Swansea canal also cuts through the town roughly parallel to the Tawe. Historically there have been significant, flooding events in and around the town due to its location on the side of the flood plain, the confluence of two rivers and a canal system all in proximity.

11.32.2 Conclusions from the Flood Extent Map

The flood extent map does not indicate significant flood risk in Pontardawe, however historic flood events suggest there is a potential for serious flooding.

A Project Appraisal Report for Hunter's Lodge & Ashwood Drive, Gellinudd was completed in January 2008. Proposals are subject to future funding.

11.32.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Pontardawe. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

A number of important structures along Swansea Canal. Liaise with British Waterways – Monitoring and cleansing of various culverts within and around the urban conurbation. **See Measures NPT05, NPT06 & NPT07. Measure type: M24, M35**

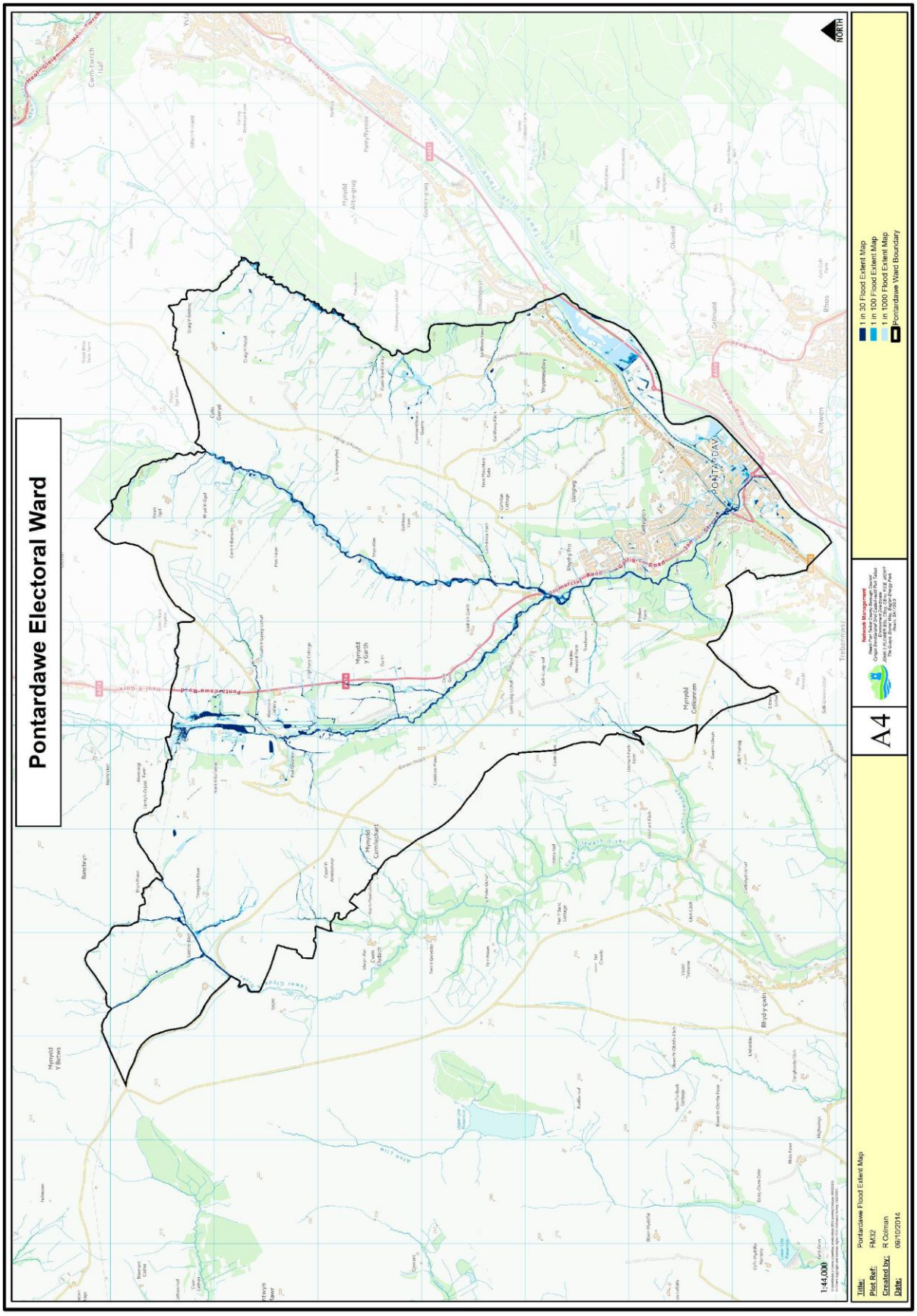


Figure 39: Pontardawe Flood Extent Map

Table 40: Pontardawe Property Count

Risk Area - Pontardawe	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	2459	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	156	131	13	12
People (multiplier 2.35)	367	308	31	28
Residential Properties at Risk of Flooding (200 mm Depth)	58	43	6	9
People (multiplier 2.35)	136	101	14	21
Services	5	0	0	0
Risk to Economic Activity				
Non-Residential Properties	889	86	15	17
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	1	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	175.75	3.19	1.26	2.08
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.52	0.12	0.01	0.00
Listed Buildings	18	0	2	2
Licenced Abstractions (LA)	1	0	0	0

11.33 Port Talbot

11.33.1 Port Talbot Area of Flood Risk

Port Talbot ward encompasses the town centre of the same name and the district of Pen-y-Cae. To the east it consists of upland moorland and farmland with some managed woodland in the east. It covers an area of 393 hectares and hosts a population of approximately 5,300. The town centre is relatively low lying, with the majority of the populated parts being found there. The River Afan flows through the town centre.

11.33.2 Conclusions from the Flood Extent Map

The predominant flood risk in Port Talbot is related to the Afan River which flows through the town and has historically been the cause of a number of significant flood events. National Resources Wales are responsible for the river, the associated flood defences and any related flood risk.

11.33.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Port Talbot. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

The following have also been identified:

Station Road – Monitor and liaise with Welsh Water to improve flood resilience. **See Measures NPT04 & NPT07. Measure type: M24, M35**

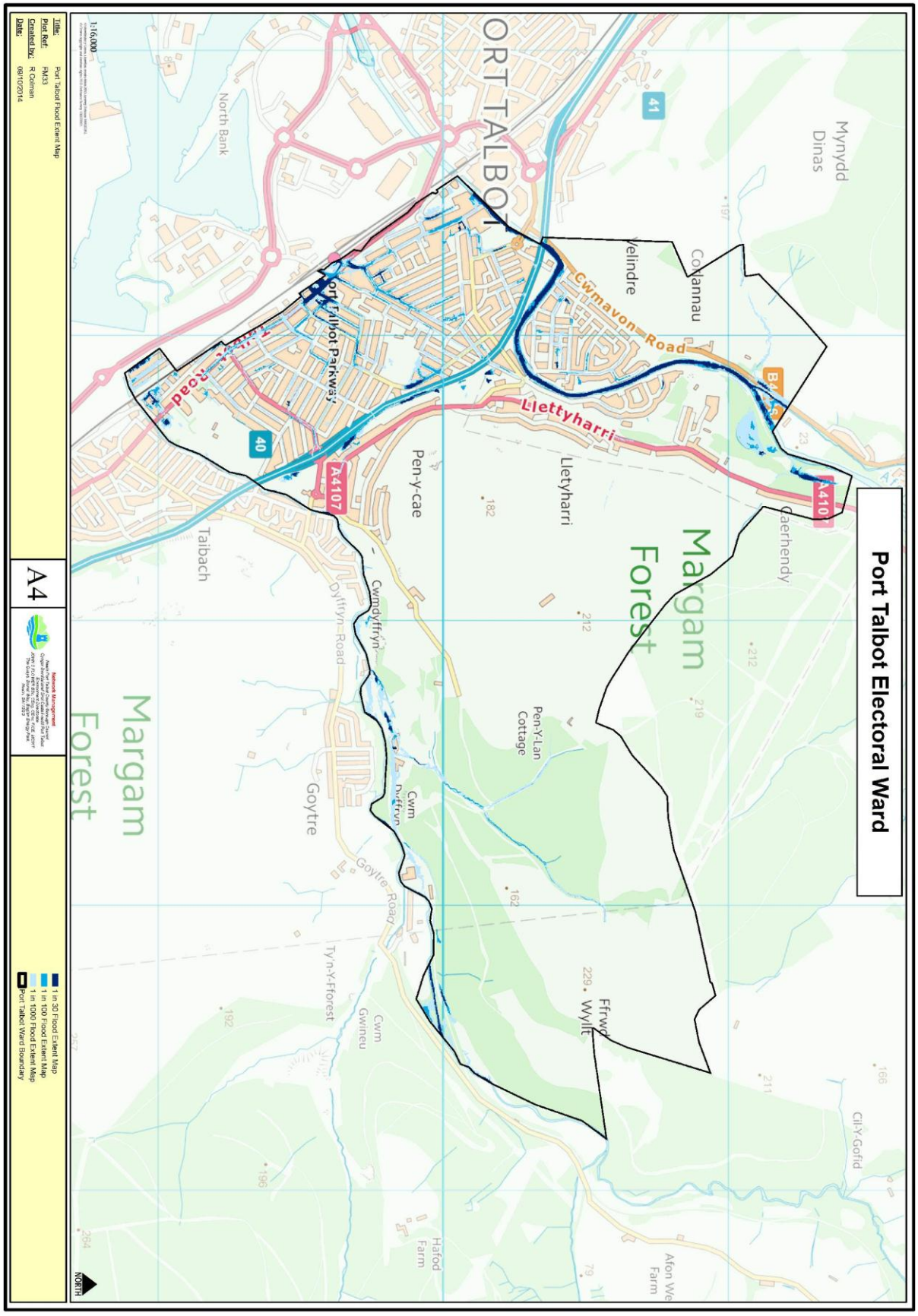


Figure 40: Port Talbot Flood Extent Map

Table 41: Port Talbot Property Count

Risk Area - Port Talbot	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	2598	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	178	148	28	2
People (multiplier 2.35)	418	348	66	5
Residential Properties at Risk of Flooding (200 mm Depth)	74	55	18	1
People (multiplier 2.35)	174	129	42	2
Services	6	1	1	0
Risk to Economic Activity				
Non-Residential Properties	773	83	17	19
Airports	0	0	0	0
Motorway/Trunk Roads *km*	3.56	0.14	0.02	0.04
Mainline Railways *km*	0.18	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	3.07	0.16	0.02	0.03
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	16	1	1	1
Licenced Abstractions (LA)	0	0	0	0

11.34 Resolven

11.34.1 Resolven Area of Flood Risk

Resolven ward is a large area of the upper Neath valley. It is home to the communities of Resolven, Clyne and Melincourt, these are strung along the route of the A465 trunk road. The total population is approximately 3,200. The ward covers an extensive 2,975 hecatres, the majority of which is rural. The valley floor is largely given over to the meandering River Neath and farmland. There are also numerous woodlands and as the terrain rises to either side the pasture and woods give way to rural upland and moorland. Neath canal also runs along the valley in proximity to the trunk road. In addition to these there are numerous streams, brooks and sources of mine water flowing into the valley and thereafter into the river. There are two large, deep lakes that were created from the borrow pits excavated during the construction of the new trunk road.

11.34.2 Conclusions from the Flood Extent Map

The flood extent map suggests some extensive flood risks in the Resolven community.

The fluvial flood risk from the main river is the responsibility of the N.R.W. and the threat to the community from this source may be overstated on the extent map. The general measure for Resolven is as follows:

11.34.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Resolven. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Grid situated on Neath Rd, Resolven. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Intake structure situated at Pentwyn Rd, Resolven. **See Measures NPT05 & NPT06. Measure type: M24, M35**

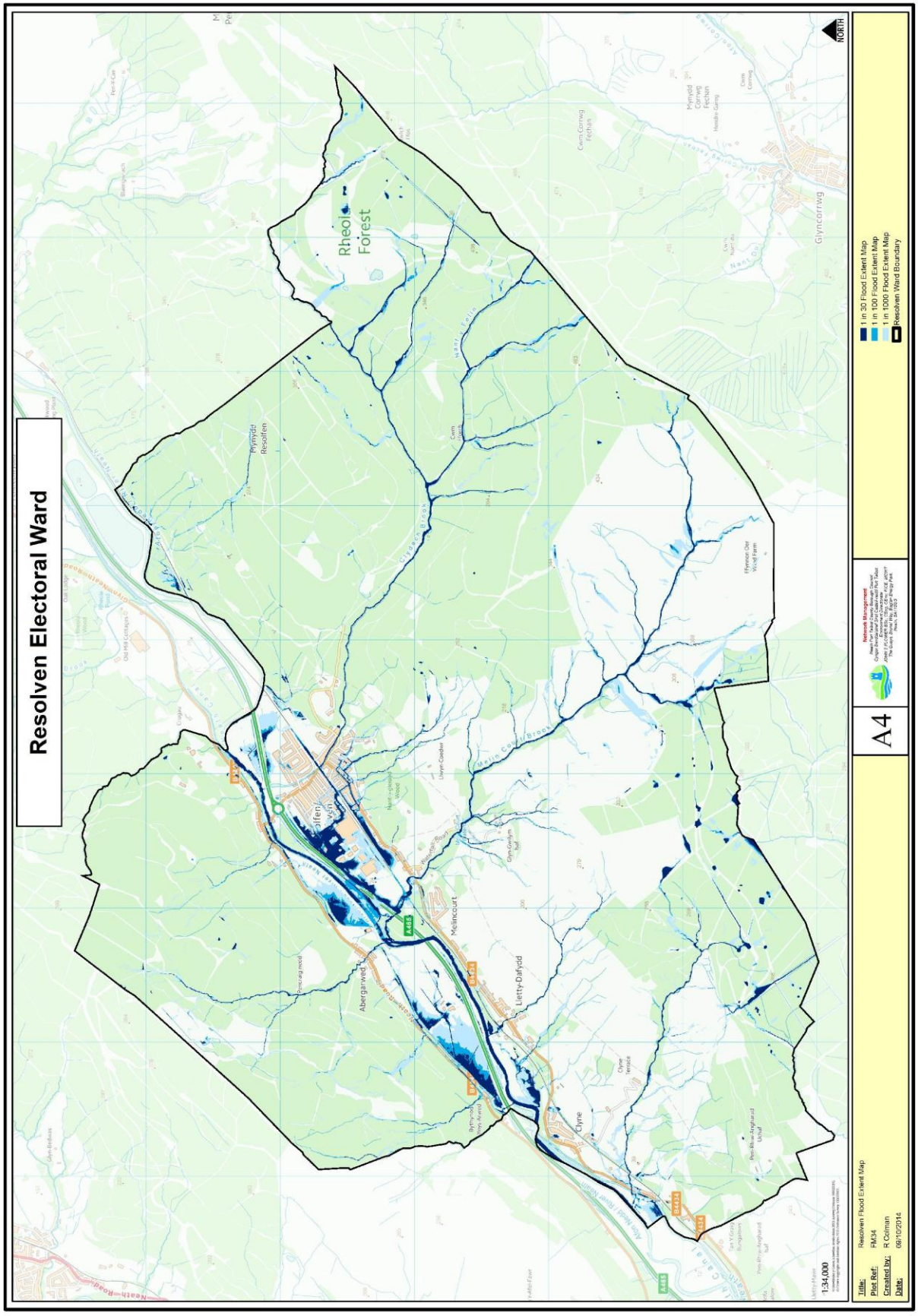


Figure 41: Resolven Flood Extent Map

Table 42: Resolven Property Count

Risk Area - Resolven	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1459	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	200	148	30	22
People (multiplier 2.35)	470	348	71	52
Residential Properties at Risk of Flooding (200 mm Depth)	75	61	11	3
People (multiplier 2.35)	176	143	26	7
Services	5	2	1	0
Risk to Economic Activity				
Non-Residential Properties	380	34	18	13
Airports	0	0	0	0
Motorway/Trunk Roads *km*	7.57	0.42	0.20	0.22
Mainline Railways *km*	6.31	0.80	0.38	0.32
Agricultural Land - Grades 1, 2 & 3 *ha*	126.91	19.88	5.41	15.36
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	7.08	0.23	0.03	0.04
Listed Buildings	12	0	1	2
Licenced Abstractions (LA)	3	2	0	0

11.35 Rhos

11.35.1 Rhos Area of Flood Risk

Rhos sits on the higher ground east of Pontardawe, populated by the communities of Rhos, Gellinudd and Cilybebyll. The majority of the ward is rural upland, farmland, woods and managed forestry. Covering an area of 1,623 hectare, the population is approximately 2,500. The River Clydach passes through the ward as it moves south. Several other streams and brooks also rise in the ward.

11.35.2 Conclusions from the Flood Extent Map

The flood extents shown on the map show that for the most part the risk in Rhos is fluvial and mainly confined to the numerous small watercourses criss-crossing the community.

Hunter's Lodge – Subject of a P.A.R. - £40,000 of proposed completed in 2012. Proposals estimated at £900,000.

11.35.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Rhos. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Lon Catwg – investigate drainage network, verify unnamed watercourse flooding shown on extents map. **See Measures NPT02 & NPT04. Measure type: M24, M44**

New Road – maintain two high priority culverts. **See Measure NPT06. Measure type: M24, M35**

Gelli Geiros estate – investigate flood map showing high risk flooding. **See Measure NPT04. Measure type: M24**

March Hwyel – known flooding, maintain two high priority inlets. Asset survey completed. **See Measures NPT06 Measure type: M24, M35**

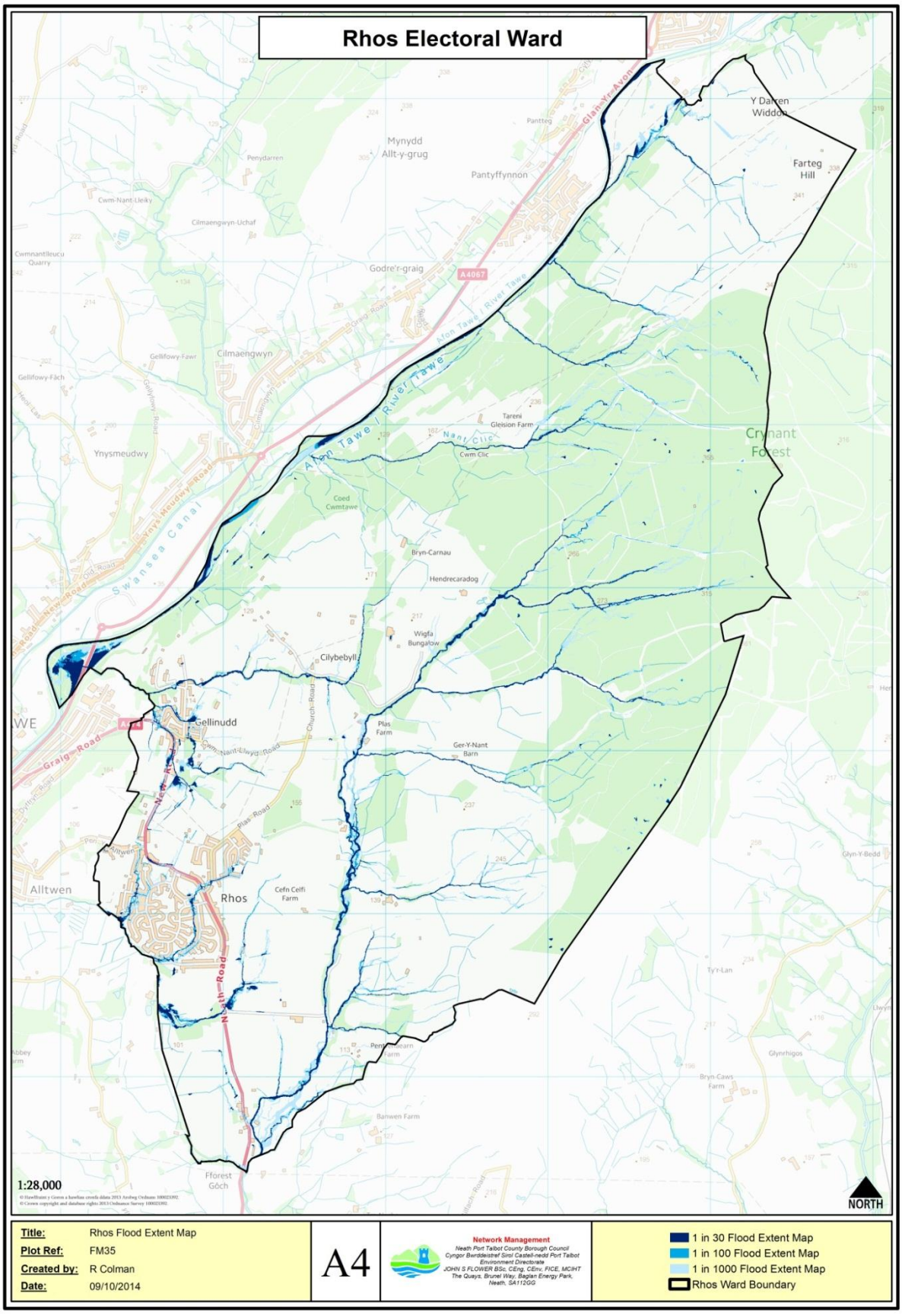


Figure 42: Rhos Flood Extent map

Table 43: Rhos Property Count

Risk Area - Rhos	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1084	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	123	90	26	7
People (multiplier 2.35)	289	212	61	16
Residential Properties at Risk of Flooding (200 mm Depth)	36	31	3	2
People (multiplier 2.35)	85	73	7	5
Services	2	1	0	0
Risk to Economic Activity				
Non-Residential Properties	320	16	10	2
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	20.79	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.63	0.02	0.01	0.02
Listed Buildings	3	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.36 Sandfields East

11.36.1 Sandfields East Area of Flood Risk

Sandfields East ward covers roughly the eastern half of the sandfields estate, so is essentially all urbanised. The ward is 166 hectares in area and houses a population of approximately 6,700. The housing estate extends to the beach front at Aberavon and to the docks entrance to the south-east. The estate is entirely built on a sand dune system, which has a number of effects on the local drainage. In addition, the whole area is very flat and low lying.

11.36.2 Conclusions from the Flood Extent Map

The Sandfields is densely populated, yet the flood extent map shows only a small number of properties at risk.

11.36.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Sandfields East. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Victoria Road & Newbridge Road – prone to minor flood events in the past. **See Measures NPT02 & NPT04. Measure type: M24, M44**

Addison Road – further investigation, inspection and maintenance. **See Measures NPT05 & NPT06. Measure type: M24, M35**

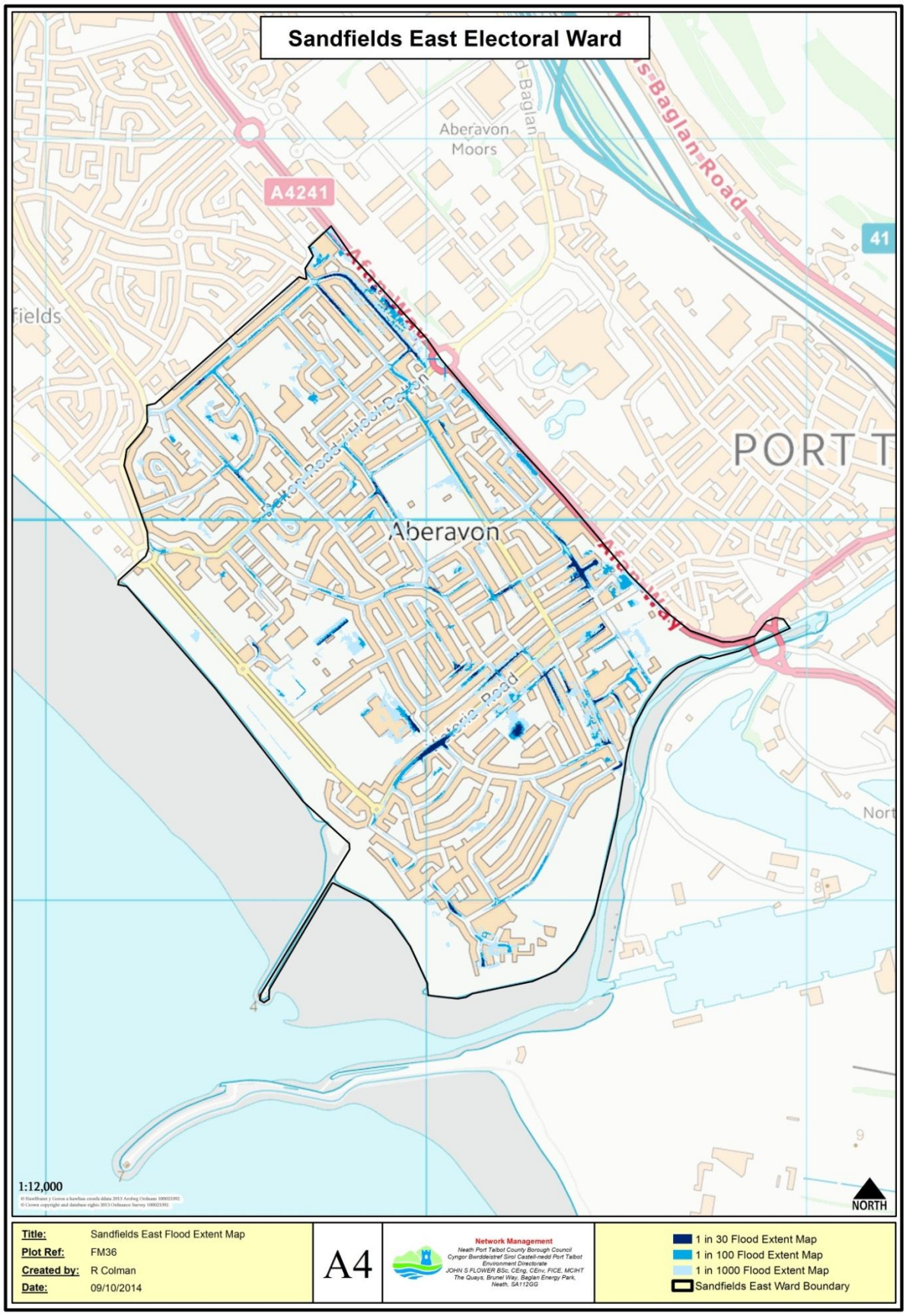


Figure 43: Sandfields Flood Extent Map

Table 44: Sandfields East Property Count

Risk Area - Sandfields East	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	3169	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	101	84	17	0
People (multiplier 2.35)	237	197	40	0
Residential Properties at Risk of Flooding (200 mm Depth)	54	53	1	0
People (multiplier 2.35)	127	125	2	0
Services	3	0	0	0
Risk to Economic Activity				
Non-Residential Properties	363	35	8	2
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	1	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	1	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.37 Sandfields West

11.37.1 Sandfields West Area of Flood Risk

Sandfields West ward covers approximately the western half of the sandfields estate, so is essentially all urbanised. The ward is 172 hectares in area and houses a population of approximately 6,700. The housing estate extends to the beach front at Aberavon and to the energy park to the north-west. The estate is entirely built on a sand dune system, which has a number of effects on the local drainage. In addition, the whole area is very flat and low lying.

11.37.2 Conclusions from the Flood Extent Map

Sandfields West flood extent map shows that despite the high level of population within the community, the predicted flood risk is very low.

11.37.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Sandfields West. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Acacia Avenue & Fairway – Welsh Water combined sewer system. Known flood prone area – Welsh Water have agreed to carry out remedial works to reduce flood occurrence and frequency. Liaise with Welsh Water to monitor progress of improvement works. **See Measure NPT07. Measure type: M24, M35**

Acacia Avenue pumping station – inspect and maintain. **See Measures NPT05 & NPT06. Measure type: M24, M35**

Purcell Avenue – Investigate. **See Measure NPT04. Measure type: M24**

Drainage Infrastructure situated on the new Peripheral Distributor Road – Survey and Maintenance required. **See Measures NPT02, NPT05 & NPT06. Measure type: M24, M35, M44**

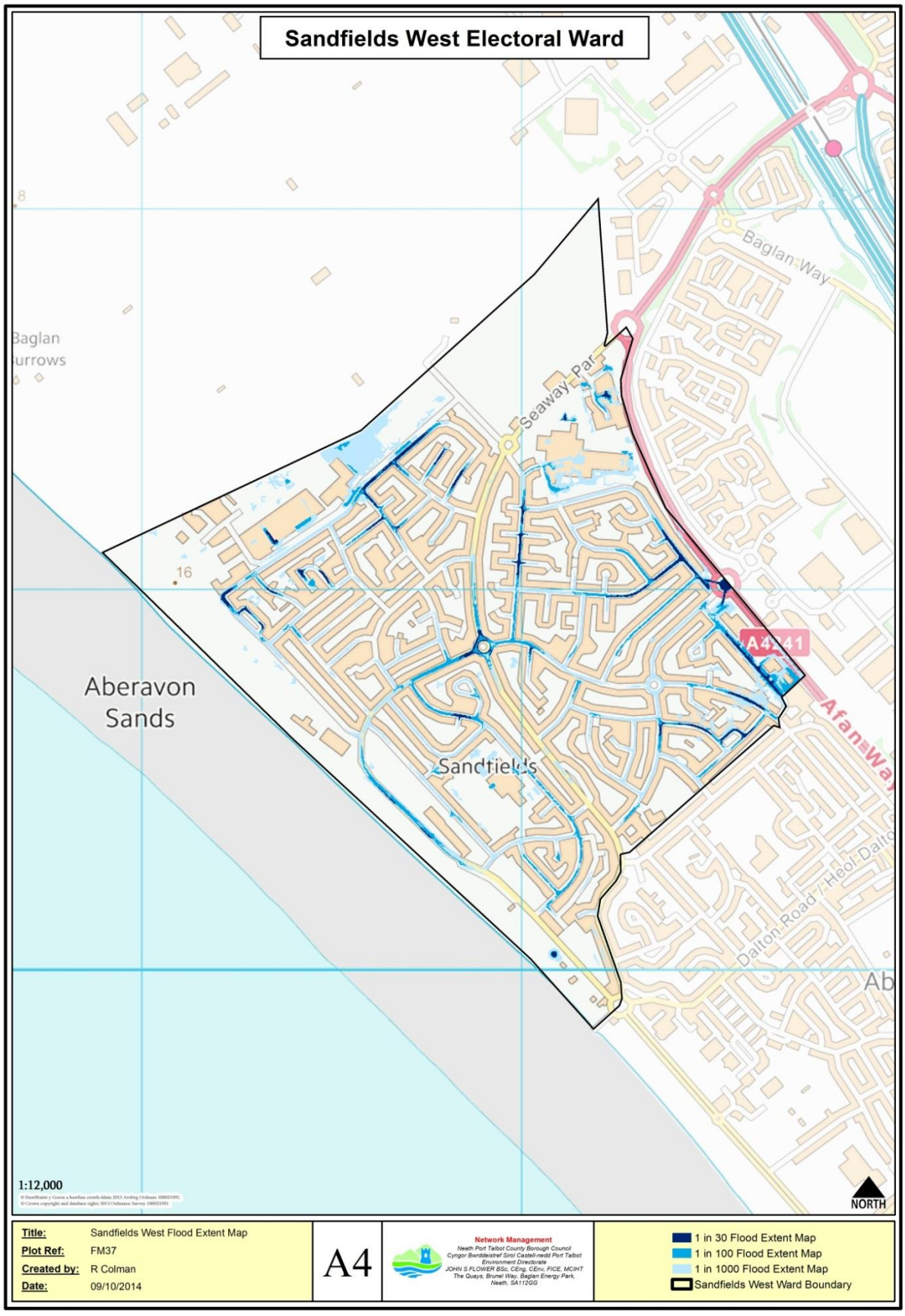


Figure 44: Sandfields West Flood Extent Map

Table 45: Sandfields West Property Count

Risk Area - Sandfields West	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	2966	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	46	45	1	0
People (multiplier 2.35)	108	106	2	0
Residential Properties at Risk of Flooding (200 mm Depth)	11	11	0	0
People (multiplier 2.35)	26	26	0	0
Services	6	1	0	0
Risk to Economic Activity				
Non-Residential Properties	196	12	2	0
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	1	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	0	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.38 Seven Sisters

11.38.1 Seven Sisters Area of Flood Risk

Seven Sisters lies in the north of the Dulais Valley and is home to several small communities that follow the path of the river valley. Covering an area of 1,165 hectares, it has a population of approximately 2,100. The ward is primarily rural upland, with historic coal tips landscaped into the hilltops and mountainsides. The steep terrain channels the numerous springs and streams down to the river.

11.38.2 Conclusions from the Flood Extent Map

Due to the Upland terrain that typifies the community, the potential flood extent is predominantly fluvial and may be over stated by the extent map.

11.38.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Seven Sisters. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Maintain Nant y Cafn business park inlets. **See Measure NPT06. Measure type: M24, M35**

Seven Sisters football ground – extensive flooding shown on flood extent map. Low – High risk. Investigate. **See Measure NPT04. Measure type: M24**

High Street – investigate high risk flooding shown on flood extent map, coming from Network Rail ditch / watercourse. **See Measure NPT04. Measure type: M24**

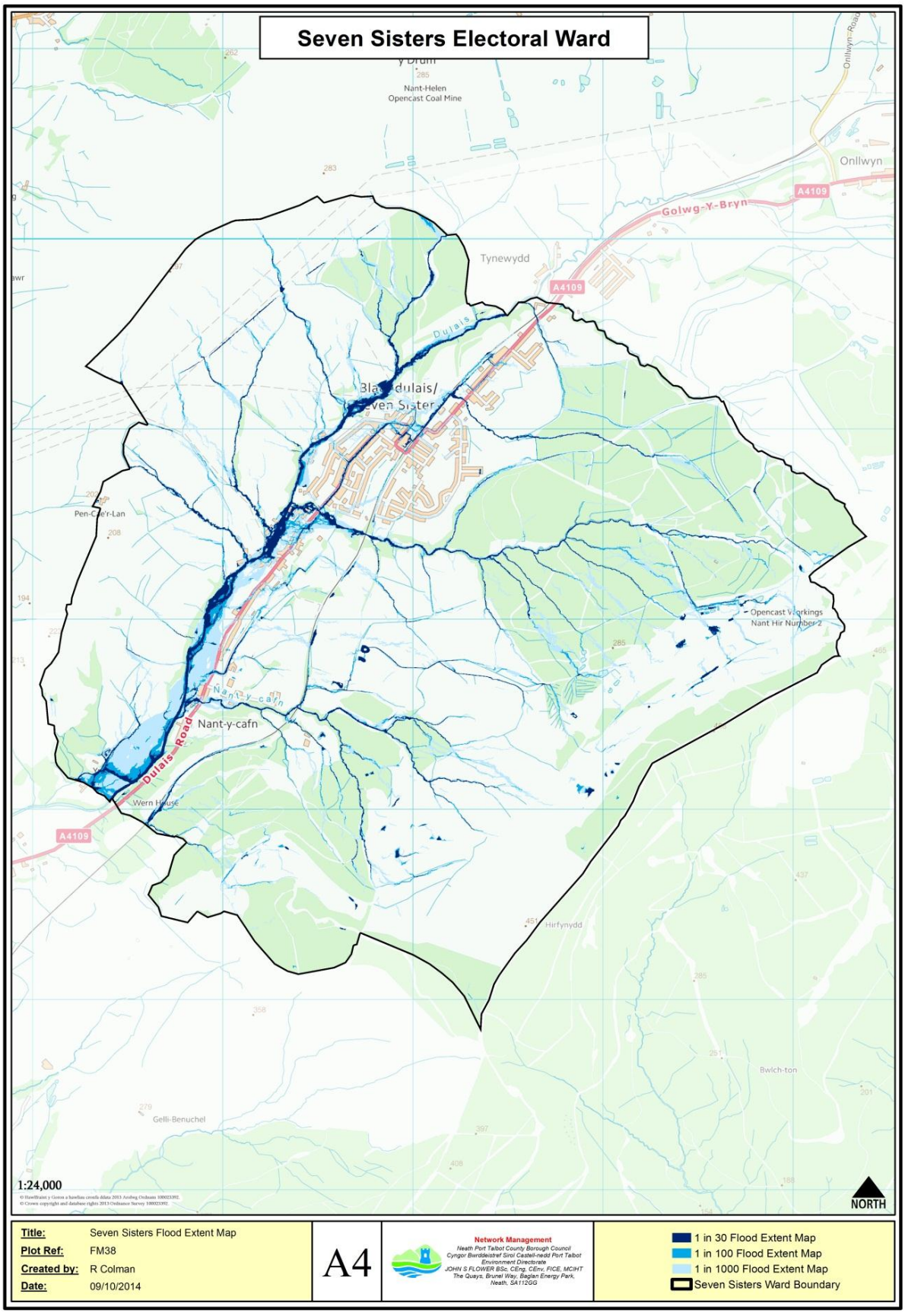


Figure 45: Seven Sisters Flood Extent Map

Table 46: Seven Sisters Property Count

Risk Area - Seven Sisters	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	937	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	108	57	45	6
People (multiplier 2.35)	254	134	106	14
Residential Properties at Risk of Flooding (200 mm Depth)	28	25	3	0
People (multiplier 2.35)	66	59	7	0
Services	5	0	0	0
Risk to Economic Activity				
Non-Residential Properties	318	48	7	11
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	3.65	0.75	0.62	0.54
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	2.27	0.17	0.06	0.29
Listed Buildings	2	1	0	0
Licenced Abstractions (LA)	0	0	0	0

11.39 Taibach

11.39.1 Taibach Area of Flood Risk

Taibach is a suburban district of Port Talbot town that sits between Aberavon and Margam. The ward is split quite distinctly with the majority of the 4,600 population residing in the low lying, flat area south-west of the motorway. North east of the motorway lies the other two thirds of the ward – the terrain rises steeply and for the main part the land is rural upland and moorland overlooking the motorway and suburbs below. The ward is 551 hectares in area. Several small watercourses make their way down to the urban areas and through to the docks and sea beyond.

11.39.2 Conclusions from the Flood Extent Map

There are a number of areas of potential surface water flooding and fluvial flood risks across the community.

11.39.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Taibach. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Accumulations of flood water illustrated on the flood extent maps at Tal-y-Wern. An asset survey has recently been undertaken. Further investigation required to establish if the flood maps give a good representation. **See Measure NPT04. Measure type: M24**

Prince Street / Duke Street Inlet known surface water flooding – interaction with Welsh Water sewer system and Network Rail culvert. Further investigation, monitoring and maintenance. **See Measures NPT05, NPT06 & NPT07. Measure type: M24, M35**

Prince Street inlet is to be reviewed for maintenance schedule. **See Measure NPT06. Measure type: M24, M35**

Cwm-y-Geifr Inlet: North of M4 at Lansbury Avenue. Inspected and maintained by SWTRA – confirmed January 2015. **See Measure NPT07. Measure type: M24, M35**

Maintain Arnallt Brook and Toronto Avenue culverts. **See Measure NPT06. Measure type: M24, M35**

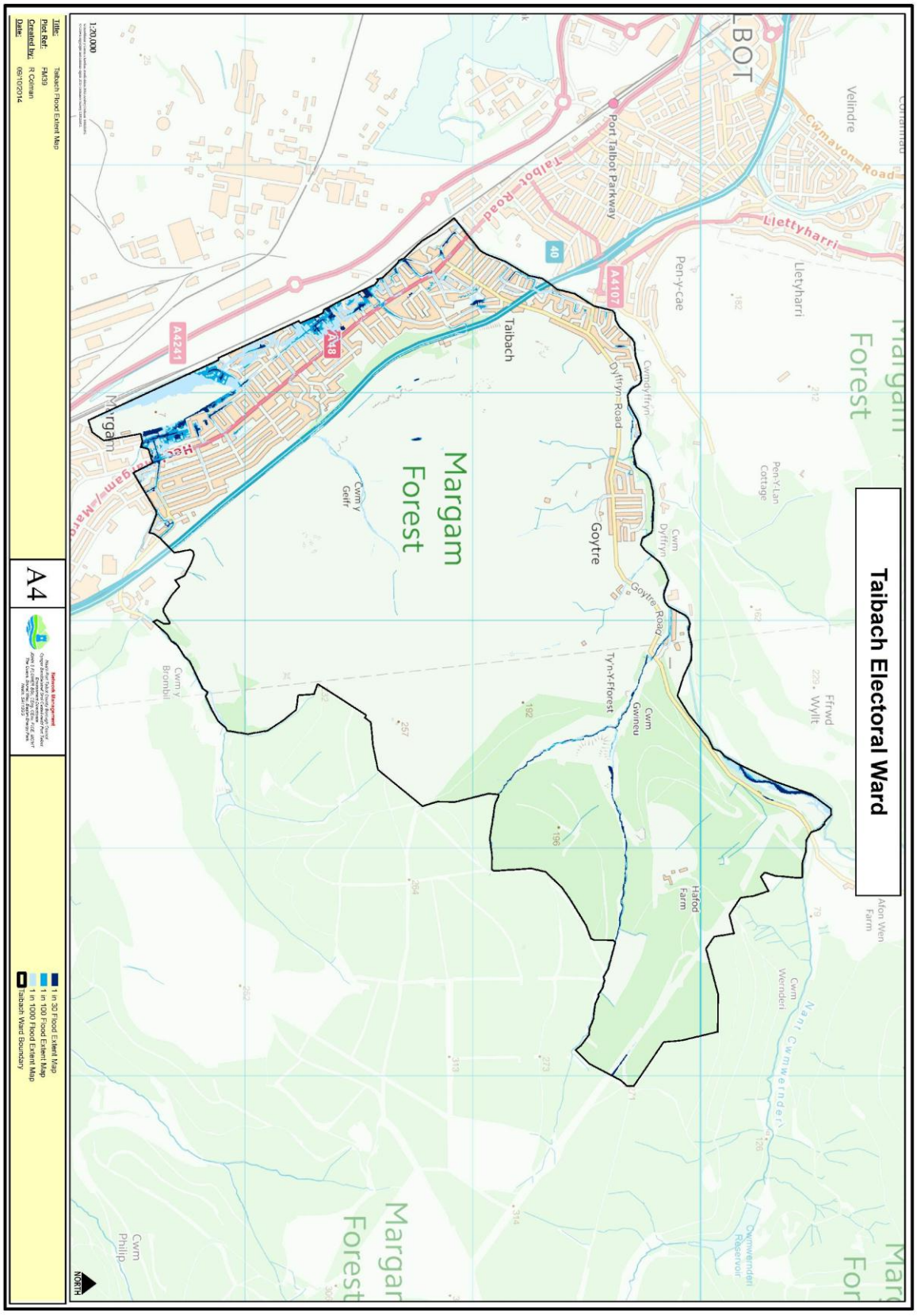


Figure 46: Taibach Flood Extent Map

Table 47: Taibach Property Count

Risk Area - Taibach	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	2236	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	297	201	87	9
People (multiplier 2.35)	698	472	204	21
Residential Properties at Risk of Flooding (200 mm Depth)	208	138	63	7
People (multiplier 2.35)	489	324	148	16
Services	1	0	0	0
Risk to Economic Activity				
Non-Residential Properties	413	44	10	6
Airports	0	0	0	0
Motorway/Trunk Roads *km*	4.12	0.31	0.01	0.01
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.14	0.00	0.00	0.00
Listed Buildings	3	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.40 Tonna

11.40.1 Tonna Area of Flood Risk

Tonna is a largely rural ward with the village of Tonna being the only centre of population, spread along the valley road that leads into Neath. The terrain rises steadily south-east of the road and is given over to rural upland, farms and woodland. Numerous small watercourses criss-cross the landscape, are then re-directed or channelled through the urban areas as they descend to the river that runs along the ward boundary. The ward is home to approximately 2,500 people and covers an area of 755 hectares.

11.40.2 Conclusions from the Flood Extent Map

The listed building is the Tennant Canal aquaduct, which by its nature contains the canal and straddles the river. So it is likely to have experienced numerous flood events and is likely to do so in the future but it should not be adversely affected.

11.40.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Tonna. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Heol Cerredig – A flood aleviation scheme has recently been undertaken to combat the historical flooding in the area. (Flood extent map closely matches recent flood events). Miantenance of the flood assets required. **See Measure NPT06. Measure type: M24, M35**

Dulais Fach Road. Improvement to 2 No. inlets and respective culverts. **See Measures NPT05 & NPT06. Measure type: M24, M35**

The Paddocks. Further Investigation and maintenance. **See Measures NPT04 & NPT06. Measure type: M24, M35**

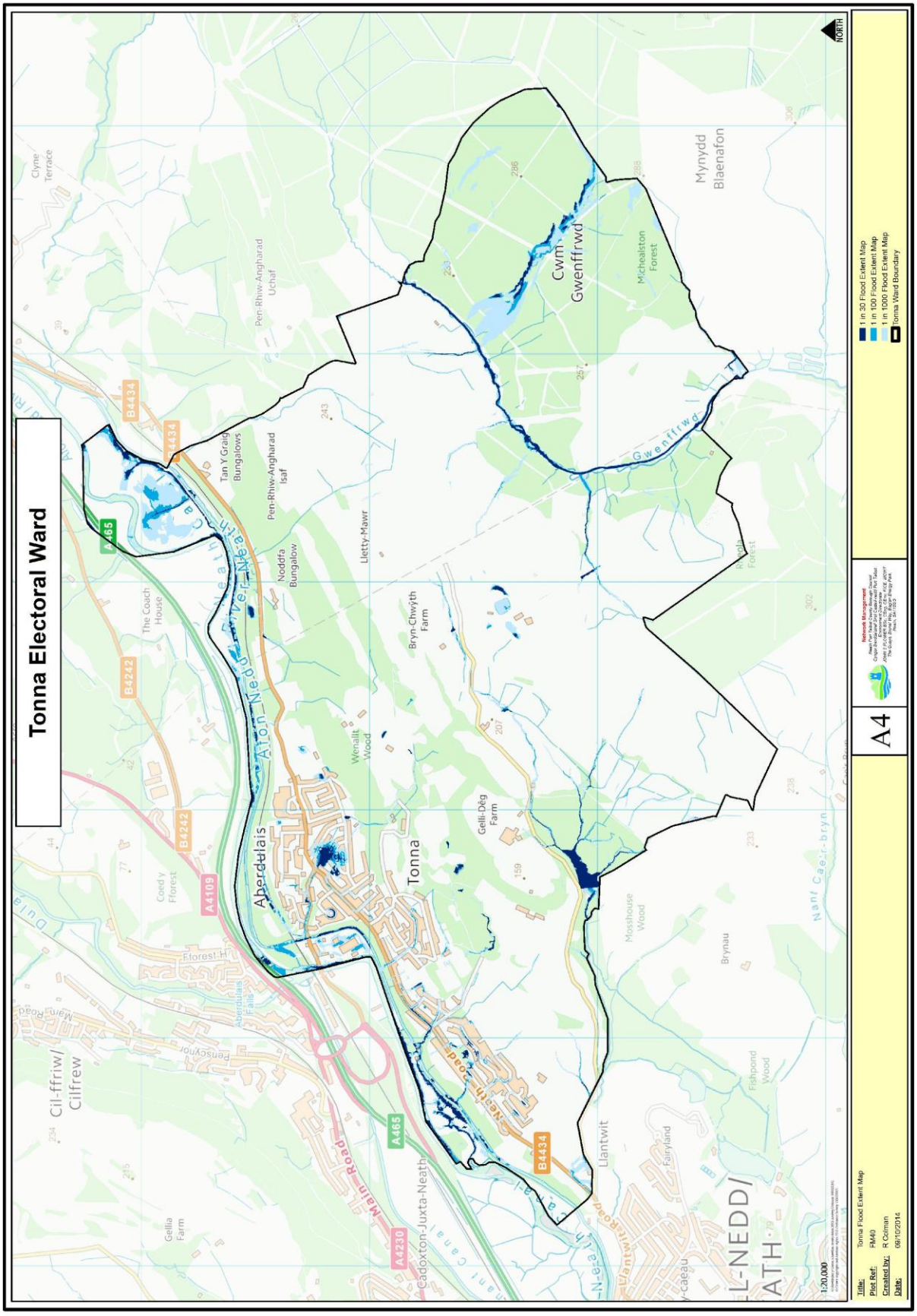


Figure 47: Tonna Flood Extent Map

Table 48: Tonna Property Count

Risk Area - Tonna	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1037	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	121	81	20	20
People (multiplier 2.35)	284	190	47	47
Residential Properties at Risk of Flooding (200 mm Depth)	66	34	18	14
People (multiplier 2.35)	155	80	42	33
Services	1	0	0	0
Risk to Economic Activity				
Non-Residential Properties	259	13	4	1
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.78	0.05	0.00	0.00
Mainline Railways *km*	2.43	0.26	0.07	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	223.08	14.87	5.27	5.32
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	20.87	0.69	0.30	1.48
Scheduled Ancient Monuments *ha*	30.30	0.36	0.04	0.02
Listed Buildings	21	3	2	1
Licenced Abstractions (LA)	3	1	1	0

11.41 Trebanos

11.41.1 Trebanos Area of Flood Risk

Trebanos ward is only 192 hectares in area and sits south-west of Pontardawe on the River Tawe. The population is approximately 1,400. The village has grown to become an outlying suburb of Pontardawe and makes up about a third of the area of the ward, the rest is woodland, pastureland and rural uplands. The Swansea canal also runs alongside the river through this area.

11.41.1 Conclusions from the Flood Extent Map

The map indicates that the potential for flooding is linked to the small watercourses, river and canal. The flooding may be exaggerated as the model does not factor in the culverts. Further investigation and monitoring are required.

11.41.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Trebanos. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

Graig Road, Trebanos – Subject of a P.A.R., no work undertaken. £367,000 proposed in report.

Pheasant Rd, Lloyd St. - Culvert - privately owned. A Project Appraisal Report for Pheasant Road was completed in November 2007, as a result some works have been completed. Additional works depend on future funding. Liaise with owner to ensure it is maintained. **See Measures NPT05, NPT06 & NPT07. Measure type: M24, M35**

Investigations have been carried out at Glyn Meirch Road due to localised flooding resulting in a minor scheme being proposed. There is an additional

scheme associated on Swansea Rd regarding a Retaining Wall. Further investigation is required. **See Measure NPT04. Measure type: M24**

Canal sheet piles eroding - scheme proposed and maintenance required. (NPT own the canal through this stretch). Monitor. **See Measure NPT06. Measure type: M24, M35**

NPT homes culverts Heol-y-Llywynon riparian responsibility. Liaise to ensure maintenance. **See Measure NPT07. Measure type: M24, M35**

Twin culverts at 279 Swansea Rd - historic capacity problems. **See Measures NPT05 & NPT06. Measure type: M24, M35**

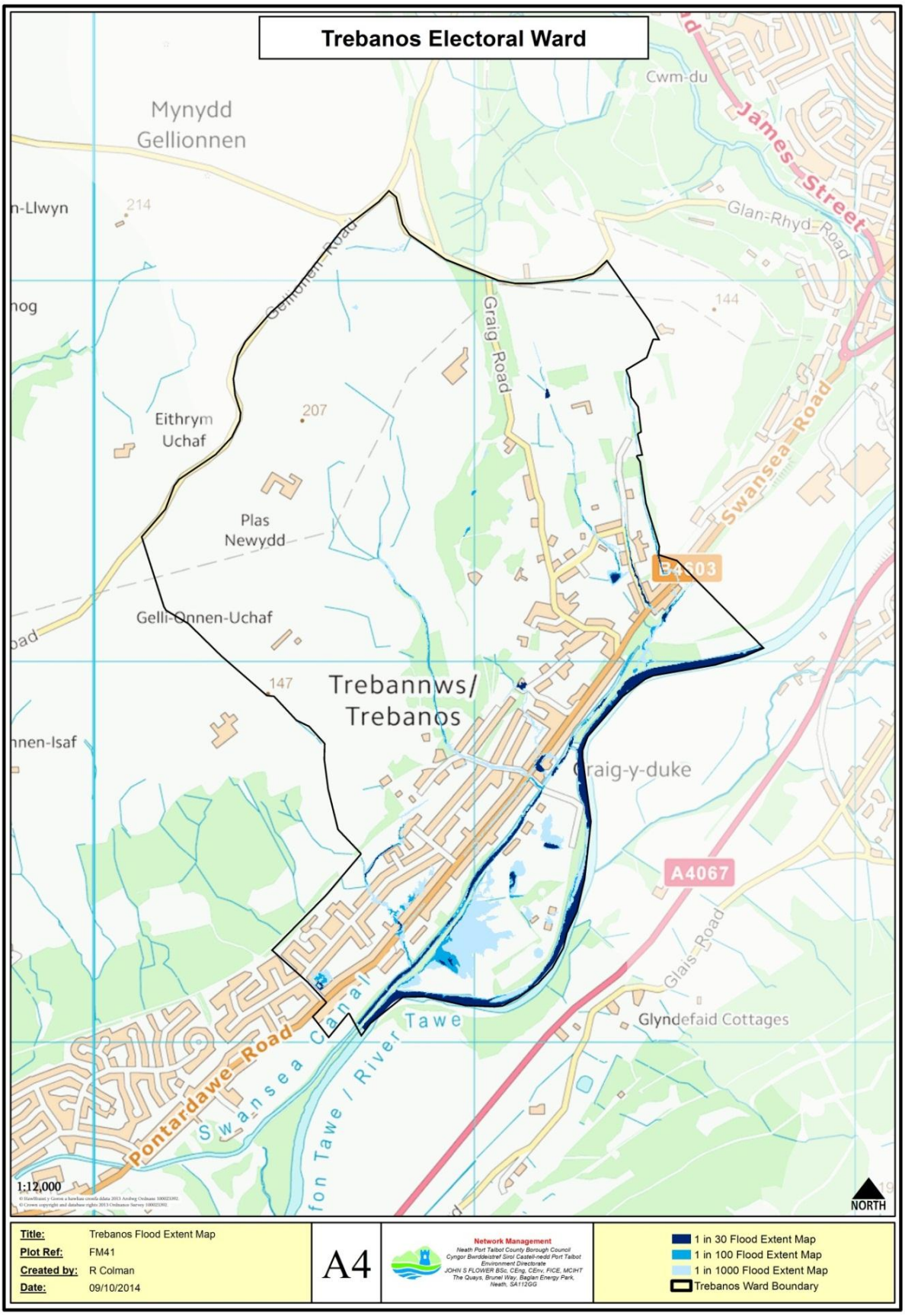


Figure 48: Trebanos Flood Extent Map

Table 49: Trebanos Property Count

Risk Area - Trebanos	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	631	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	26	16	2	8
People (multiplier 2.35)	61	38	5	19
Residential Properties at Risk of Flooding (200 mm Depth)	15	7	1	7
People (multiplier 2.35)	35	16	2	16
Services	1	0	0	0
Risk to Economic Activity				
Non-Residential Properties	169	3	1	1
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	18.33	3.24	0.68	1.85
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.00	0.00	0.00	0.00
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.00	0.00	0.00	0.00
Listed Buildings	1	0	0	0
Licenced Abstractions (LA)	0	0	0	0

11.42 Ystalyfera

11.42.1 Ystalyfera Area of Flood Risk

Ystalyfera lies at the top of the upper Swansea valley, on the River Tawe. Covering an area of 680 hectares and populated by approximately 3,100 people. The villages of Ystalyfera, Mynydd-Bach and Gurnos all cover the bottom of the valley and are overlooked by Allt-Yr-Grug Mountain and adjacent higher ground. The Afon Twrch joins the River Tawe just below Ystalyfera village.

11.42.2 Conclusions from the Flood Extent Map

The flood extent map indicates that the numerous small watercourses may present varying degrees of flood risk. This may be overstated and will require further monitoring.

11.42.3 Measures and objectives to mitigate flood risk

A number of specific locations/assets have been identified from the flood extent map for Ystalyfera. Please refer to Table 6: County Wide Measures to Mitigate Flood Risk (Page 37) for a detailed description of each measure.

There are known flooding incidents at Alltygrug Farm Road via overland/pluvial flows. Clyngwyn Road Disused tip – Several culverts within and around this locality. Define land owners and establish a maintenance regime. **See Measures NPT06 & NPT07. Measure type: M24, M35**

Investigate and verify the High risk flooding shown on the flood extent map at Varteg Road & Heol Ynysdarren. **See Measure NPT04. Measure type: M24**

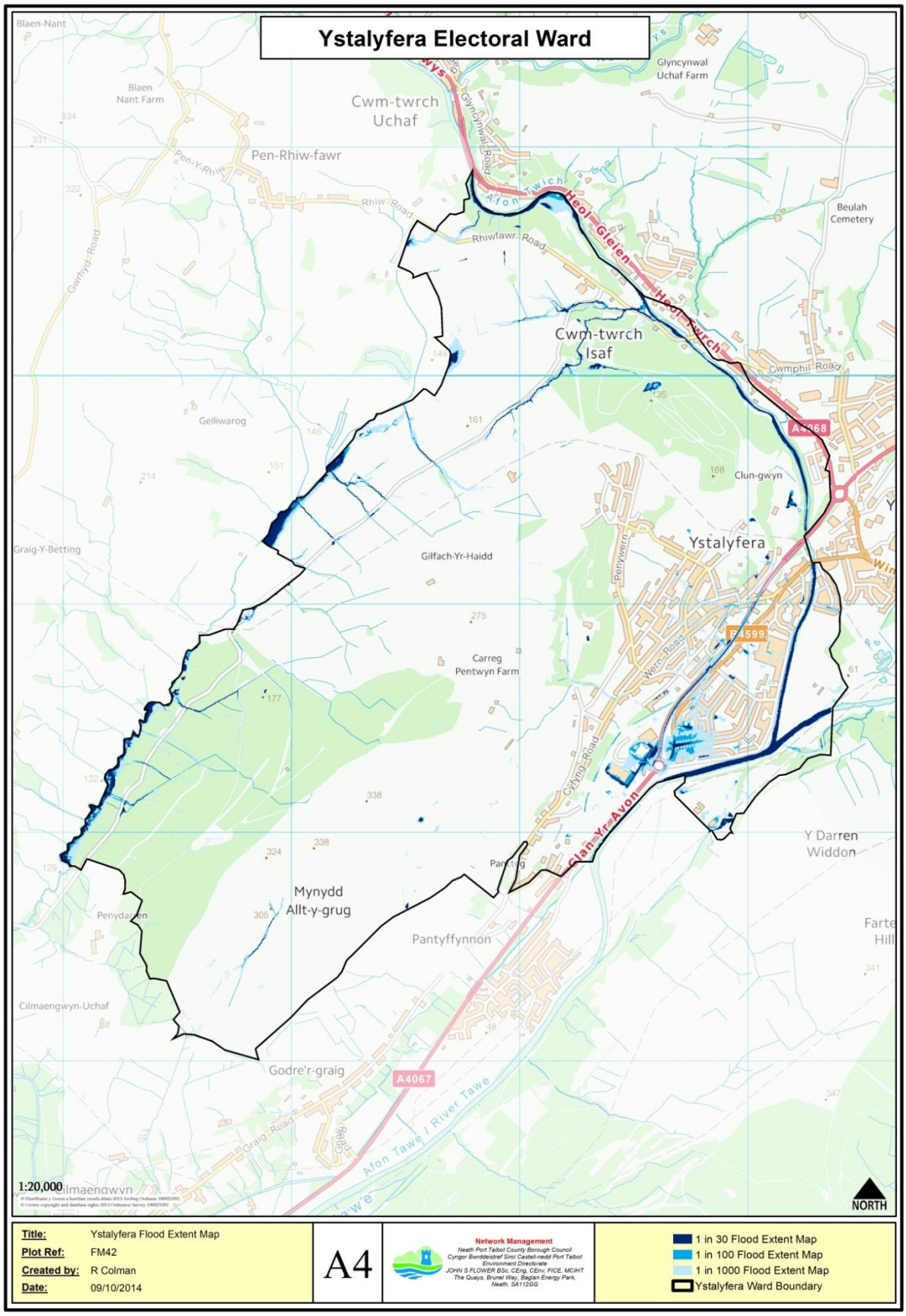


Figure 49: Ystalyfera Flood Extent Map

Table 50: Ystalyfera Property Count

Risk Area - Ystalyfera	Totals For Ward Area	LOW	MEDIUM	HIGH
Risk to People & Property				
Properties	1488	N/A	N/A	N/A
Residential Properties in Areas at Risk of Flooding	170	135	35	0
People (multiplier 2.35)	400	317	82	0
Residential Properties at Risk of Flooding (200 mm Depth)	101	74	27	0
People (multiplier 2.35)	237	174	63	0
Services	2	0	0	0
Risk to Economic Activity				
Non-Residential Properties	374	14	4	2
Airports	0	0	0	0
Motorway/Trunk Roads *km*	0.00	0.00	0.00	0.00
Mainline Railways *km*	0.00	0.00	0.00	0.00
Agricultural Land - Grades 1, 2 & 3 *ha*	0.00	0.00	0.00	0.00
Risk to Natural & Historic Environment				
Bathing Waters	0	0	0	0
Environmental Permitting Regulations (EPR) Installations	0	0	0	0
Special Areas of Conservation (SAC) *ha*	0.00	0.00	0.00	0.00
Special Protection Areas (SPA) *ha*	0.00	0.00	0.00	0.00
Ramsar Sites *ha*	0.00	0.00	0.00	0.00
World Heritage Sites *ha*	0.00	0.00	0.00	0.00
Sites of Special Scientific Interest (SSSI) *ha*	0.01	0.00	0.00	0.01
Parks and Gardens *ha*	0.00	0.00	0.00	0.00
Scheduled Ancient Monuments *ha*	0.03	0.00	0.00	0.01
Listed Buildings	2	1	0	0
Licenced Abstractions (LA)	2	0	0	1

Appendix 2 - Analysing Data

The majority of the data used to undertake the property count exercise for this document was provided to the authority by the Environment Agency/Natural Resources Wales. The dataset represents the most accurate information available at the time this document was produced and the counts reflect this. The EA dataset was accompanied with a number of supporting documents on how the data should be used and how the counts could be replicated to tie into the regional counts which the EA have produced.

The exact procedures and techniques used have been derived from the three EA documents below;

Updated Flood Map for Surface Water – What is the uFMfSW Property Point dataset?

The updated Flood Map for Surface Water (uFMfSW) Property Point dataset.

Risk of flooding from Surface Water – Western Wales Basin District.

The above documents provide a good starting point and offer basis on understanding what the flood risk property counts are, why they have been produced and how they have been generated to assist in identifying people, economic activity and natural/historic environment in areas at risk from surface water flooding.

NPTCBC initially verified the accuracy of the data and the outlined methodology by carrying out its own counts for people, economic activity and Natural and Historic Environment (which can be seen listed below). The results were then cross referenced with the results shown in the EA's Risk of flooding from surface water – Western Wales River Basin District document. These counts were then replicated to a high degree of accuracy across the three main categories – Flood Risk Area, Neath and Port Talbot County Borough Council and the 42 individual Community Areas.

Risk to people and Properties

Number of residential properties and people in areas at risk of flooding – depth >0mm

Number of residential properties and people at risk of flooding – depth>200mm

Risk to economic activity

Non-residential properties in areas at risk of flooding – depth>0mm

Airports

Primary/Trunk Roads

Mainline Railways

Agricultural land – Grades 1, 2 & 3

Risk to Natural and Historic Environment

Bathing Waters

Environmental Permitting Regulations (EPR) Installations

Special Areas of Conservation (SAC) (ha)

Special Protection Areas (SPA) (ha)

Ramsar Sites (ha)

World Heritage Sites (ha)

Sites of Special Scientific Interest (SSSI) (ha)

Parks and Gardens (ha)

Scheduled Ancient Monuments (ha)

Listed Buildings

Licenced Abstractions (LA)

The count types were all assessed on their spatial relationship to the Environment Agency flood extent maps for three rainfall return periods (Risk);

1 in 30 year – P30-High;

1 in 100 – P100-Medium and

1 in 1000 – P1000-Low.

In order to assess the number of people at risk of flooding as well as the number of properties likely to be flooded internally in any given return period, the counts were split into two sub categories; "Properties in areas at risk of flooding from surface water" and "Properties at risk of flooding from surface water". In order to determine the number of people affected, a factor of 2.35, derived from the 2011 UK census, was applied to the total number of properties. The following tables extracted from the updated Flood Map for Surface Water (uFMfSW) Property Point dataset document outline the parameters used to produce these two different counts.

Table 48: Properties in Areas at Risk of Flooding – Definition

Buffer	MasterMap building footprints buffered by 2m to represent the size of a grid square and to reduce the gridded effect of the way that the raised property footprint is represented.
Proportion of property perimeter wetted by a minimum depth of water	50% of the external portion of the buffered property perimeter to be wet to the given minimum depth – balances the desire to include all affected properties with the need to recognise that many borderline properties will not be affected.
Minimum depth of water	No minimum depth threshold applied

Table 49: Properties at Risk of Flooding – Definition

Buffer	MasterMap building footprints buffered by 2m to represent the size of a grid square and to reduce the gridded effect of the way that the raised property footprint is represented.
Proportion of property perimeter wetted by a minimum depth of water	50% of the external portion of the buffered property perimeter to be wet to the given minimum depth – balances the desire to include all affected properties with the need to recognise that many borderline properties will not be affected.
Minimum depth of water	Minimum modelled depth of 200mm – a depth that is broadly between the average airbrick height and average door threshold height.

Appendix 3 – High Priority Culvert Inlets

Table 53: List of High Priority Inlets

OBJECT ID	LOCATION	WARD	GRADE
CUL_0006	YNYS LEE	Bryn & Cwmavon	High Priority
CUL_0006	YNYS LEE	Bryn & Cwmavon	High Priority
CUL_0008	THE STABLES	Bryn & Cwmavon	High Priority
CUL_0008	THE AVENUE	Bryn & Cwmavon	High Priority
CUL_0010	CHESTNUT ROAD	Baglan	High Priority
CUL_0011	WILLOW WAY	Baglan	High Priority
CUL_0018	CRAIG ROAD	Briton Ferry East	High Priority
CUL_0020	PANTEG	Bryn & Cwmavon	High Priority
CUL_0021	MORTIMERS FARM	Bryn & Cwmavon	High Priority
CUL_0022	GOYTRE FARM	Taibach	High Priority
CUL_0023	NO.40 HEOL-Y-GLYN	Cymmer	High Priority
CUL_0024	CYMMER ROAD	Glyncorrwg	High Priority
CUL_0025	PLEASANT VIEW	Glyncorrwg	High Priority
CUL_0026	SIDE NO.24 GADLYS TERRACE	Glyncorrwg	High Priority
CUL_0028	84A NEATH ROAD	Resolven	High Priority
CUL_0034	NO 1 MAIN ROAD	Cadoxton	High Priority
CUL_0040	MARCH HYWEL	Rhos	High Priority
CUL_0040	MARCH HYWEL	Rhos	High Priority
CUL_0042	RHOS SCHOOL	Rhos	High Priority
CUL_0043	PETROL GARAGE	Rhos	High Priority

CUL_0044	NO.13 YNYSWEN TERRACE	Crynant	High Priority
CUL_0045	REAR OF PENY-BONT	Crynant	High Priority
CUL_0048	YNYS-Y-MOND FARM	Alltwen	High Priority
CUL_0051	CEFN SAESON FACH FARM	Cimla	High Priority
CUL_0053	PHEASANT ROAD	Trebanos	High Priority
CUL_0054	73A SWANSEA ROAD	Trebanos	High Priority
CUL_0056	GLYNTEG VILLAS	Pontardawe	High Priority
CUL_0056	GLYNTEG VILLAS	Pontardawe	High Priority
CUL_0057	BIRCHFIELD ROAD	Pontardawe	High Priority
CUL_0058	24 YNYS-Y-MOND ROAD	Alltwen	High Priority
CUL_0060	TROTTING TRACK	Gwaun-Cae-Gurwen	High Priority
CUL_0064	REAR OF 91 DERWYDD AVENUE	Gwaun-Cae-Gurwen	High Priority
CUL_0221	HEOL MABON	Bryn & Cwmavon	High Priority
CUL_0230	DULAIS FACH ROAD	Tonna	High Priority
CUL_0231	DULAIS FACH ROAD	Tonna	High Priority
CUL_0233	LLANTWIT ROAD	Neath North	High Priority
CUL_0237	IVY AVENUE	Neath North	High Priority
CUL_0410	BY-PASS REAR OF LINDEN CLOSE	Bryncoch North	High Priority
CUL_0565	BLAENHONDDAN SCHOOL	Bryncoch North	High Priority
CUL_0597	A4067	Godregraig	High Priority
CUL_0603	HIGH STREET	Blaengwrach	High Priority
CUL_0623	BLAENANT COLLIERY	Crynant	High Priority
CUL_0688	NO 1 LLYGAD-YR-HAUL	Bryncoch	High

		South	Priority
CUL_0766	YNYS-Y-MOND FARM	Alltwen	High Priority
CUL_0769	YNYS-Y-MOND FARM	Alltwen	High Priority
CUL_0833	PROSPECT PLACE	Ystalyfera	High Priority
CUL_0837	REAR OF NO.28 DYNEVOR ROAD	Bryncoch South	High Priority
CUL_0923	TROTTING TRACK	Lower Brynamman	High Priority
CUL_0924	NEW ROAD	Lower Brynamman	High Priority
CUL_1195	NO.14 LLWYN HEN ROAD	Gwaun-Cae-Gurwen	High Priority

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

PART 4

FLOOD RISK MANAGEMENT PLANS

Duty to prepare flood risk management plans: Environment Agency

25. The Environment Agency must prepare a flood risk management plan in relation to each

flood risk area identified by it under regulation 13.

Duty to prepare flood risk management plans: lead local flood authorities

26.—(1) A lead local flood authority must prepare a flood risk management plan in relation to

each relevant flood risk area.

(2) "Relevant flood risk area" means—

(a) the flood risk area identified by the lead local flood authority under regulation 14(1), or

(b) if a referral is made to the Minister, the flood risk area determined by the Minister under regulation 14(6).

(3) The Environment Agency —

(a) must review a flood risk management plan prepared under this regulation, and

(b) may recommend modifications.

(4) Following a review, a lead local flood authority may revise its flood risk management plan.

(5) The Agency's power to require information under regulation 36 includes power to require a

lead local flood authority to provide a flood risk management plan by a specified date.

Flood risk management plans

27.—(1) A flood risk management plan is a plan for the management of a significant flood risk.

(2) The plan must include details of—

(a) objectives set by the person preparing the plan for the purpose of managing the flood risk, and

(b) the proposed measures for achieving those objectives (including measures required by any provision of an Act or subordinate legislation).

(3) In setting the objectives, the person preparing the plan must have regard to the desirability of—

(a) reducing the adverse consequences of flooding for—

(i) human health,

(ii) economic activity, or

(iii) the environment (including cultural heritage), and

(b) reducing the likelihood of flooding, whether by exercising powers to carry out structural work or otherwise.

(4) The measures must, in particular, include measures relating to—

(a) the prevention of flooding,

(b) the protection of individuals, communities and the environment against the consequences of flooding, and

(c) arrangements for forecasting and warning.

(5) In determining the proposed measures for achieving the objectives, the person preparing the plan must have regard to—

(a) the costs and benefits of different methods of managing the flood risk,

(b) the information included in the flood hazard map and the flood risk map,

(c) the river basin management plan for the area,

(d) the effect of floodplains that retain flood water,

(e) the environmental objectives, within the meaning of regulation 2 of the Water Environment Regulations, and

(f) the likely effect of a flood, and of different methods of managing a flood, on the local area and the environment.

(6) A flood risk management plan must include—

(a) a map showing the boundaries of the flood risk area,

(b) a summary of the conclusions drawn from the flood hazard maps and flood risk maps for the area,

(c) a description of the proposed timing and manner of implementing the measures mentioned in paragraph (2)(b), including details of the bodies responsible for implementation,

(d) a description of the way in which implementation of those measures will be monitored,

(e) a report of the consultation under paragraph (7), and

(f) where the person preparing the report thinks it appropriate, information about how the implementation of measures under the flood risk management plan and the river basin management plan for the area will be co-ordinated.

(7) The Environment Agency and each lead local flood authority must consult the following about the proposed content of a flood risk management plan—

(a) authorities listed in regulation 36(3) that may be affected by the plan, and

(b) the public.

(8) A lead local flood authority must have regard to any guidance issued by the Environment Agency about the form of flood risk management plans.

(9) In this regulation "river basin management plan" means a river basin management plan prepared under regulation 11 of the Water Environment Regulations.

Publication

28.—(1) The Environment Agency must publish the flood risk management plans prepared by the Agency and by the lead local flood authorities for each river basin district.

(2) The first flood risk management plans for each river basin district must be published before 22nd December 2015.

Review: Environment Agency

29.—(1) The Environment Agency must review each flood risk management plan prepared by it under regulation 25.

(2) The first review must be completed before 22nd December 2021.

(3) Subsequent reviews must be carried out at intervals of no more than 6 years.

(4) Following a review, the Agency must prepare a revised flood risk management plan.

(5) The revised flood risk management plan must—

(a) take account of the likely impact of climate change on the occurrence of floods,

(b) include an assessment of the progress made towards implementing the measures under regulation 27(2)(b), and

(c) if any measures proposed in the previous flood risk management plan have not been implemented, include a statement of the reasons why those measures have not been implemented.

Review: lead local flood authorities

30.—(1) A lead local flood authority must review a flood risk management plan prepared by it under regulation 26.

(2) The first review must be completed before 22nd June 2021.

(3) Subsequent reviews must be carried out at intervals of no more than 6 years.

(4) Following a review, the lead local flood authority must prepare a revised flood risk management plan.

(5) The revised flood risk management plan must—

(a) take account of the likely impact of climate change on the occurrence of floods,

(b) include an assessment of the progress made towards implementing the measures under regulation 27(2)(b), and

(c) if any measures proposed in the previous flood risk management plan have not been implemented, include a statement of the reasons why those measures have not been implemented.

(6) Regulation 26 applies in relation to a review of a flood risk management plan as it applies to the first such plan.

Appendix 5 – Project Appraisal Reports

Circa 2006 the authority obtained grant money from the Welsh Government to commission a number of project appraisal reports. In response a large number of Pre-Feasibility Reports were commissioned assessing approximately fifty sites. These reports were further assessed and from them the sites to be subject to Project Appraisal Reports were chosen. These were selected based on the experience of the engineering staff, the history of flooding events and how effective improvements would impact the communities at each.

The aim of each P.A.R. was to identify a scheme to provide relief from known flooding that was regularly impacting on the community. Each report identifies and describes the problem along with the existing infrastructure, and a number of proposals to address each aspect of the potential project.

Due to compounded financial constraints in recent years, the majority of proposals have not been financed. The following is a synopsis of the P.A.R.s and the progress of each. It is subsequently noted that fourteen P.A.R.s were completed, of which seven are within Indicative Flood Risk Areas - denoted with an (I) - and seven are not. There was no such classification when the sites were selected for Appraisals.

Baglan Brook, Baglan (I): £1,000,000 worth of work completed in 2015, this is approximately 80% of the works proposed in phase 1 of the report. An estimated £250,000 worth of work remains unfunded to complete phase 1. Phase 2 is estimated at circa £1,000,000.

Depot Road, Bryn & Cwmavon (I): No budget. Proposed works estimated at £360,000.

Heol Crwys, Cwmavon (I): No budget. Proposed works estimated at £346, 000.

Caenant Terrace, Coedffranc Central (I): £20,000 worth of work done on new culvert inlet in 2013. £750,000 proposed in the report.

Drummau Road, Coedffranc North (I): No budget, £627,000 proposed in report.

Days, Dyffryn (I) : Approximately 50-60% of works completed in 2012. No budget for remaining proposals. System is sufficiently improved by completed works that no further flood events have been experienced to-date. Proposed works estimated at £270,000.

Grandison Brook, Neath East (I): No capital works carried out, maintenance on existing only. £808,000 proposed works.

Sunnyside Terrace, Cymmer: No civil works, £7,000 spent on enforcement and inspection of riparian maintenance. £11,000 proposed in report.

Rock Street, Glynneath: No budget, £1,000,000 worth of work proposed in report.

Dan y Coed, Pelenna: No budget. Being monitored.

Hunter's Lodge, Rhos: £40,000 worth of work done in 2012. £900,000 proposed in report.

Graig Road, Trebanos: No budget. £367,000 proposed in report.

Pheasant Road, Trebanos: Phase One begun in 2010. Approximately £70,000 of proposed works completed, total estimate of £377,000 in report.

Ynyswen Terrace, Crynant: £267,000 proposed in report. £300,000 final account – all proposals completed in 2010.

Appendix 6 – Consultation Feedback

The following table contains the itemised feedback from the Public Consultation

Feedback ID	Comments	Feedback
1	*No comment left*	
2	We have severe flooding outside our property whenever there is a sudden heavy downpour or prolonged rainfall. The drains can't cope. I have video and photos of the last major flood. We live on a very busy main road and not only is this a hazard to motorists but also to pedestrians. The drain cannot cope with the amount of water, which is then made worse by the derelict building across the road. Water is just pouring onto the main road. We were told in January that once the new financial year started that they would come and sort out the drains. It is now coming into winter again and nothing has been done!! We pay a heavy council tax here. Please consider what service we are getting back in return? Flood risks to our property!!	*These comments relate to a localised drainage issue and do not fall within the scope of the FRMP. As such this matter has been referred to the Drainage Team for a response and will be addressed privately with the respondent. In the event of work being required, any such work will be programmed in line with the Council's Annual prioritisation of schemes.*
3	Dear Mr.Roberts, I have resided at the above address for 48 years. In this time I have witnessed the Rivers Afan and Pelenna which confluence at the end of my garden in full flood. Not once have I experienced any flooding caused by the rivers on my property nor felt the desire to move home until now. My concern is that with the intended drilling proposed on Foel y Fynedd and the possibility of increased volumes of water entering Pelenna my wife and I are in constant fear of the banks of the river bursting. Two years ago following an inclement spell of constant rain the banks of the river were on the verge of breaking up. Fortunately this did not occur, but the present proposals mean that the residents living in	*These comments relate to a localised drainage issue and do not fall within the scope of the FRMP. As such this matter has been referred to the Drainage Team for a response and will be addressed privately with the respondent. In the event of work being required, any such work will be programmed in line with the Council's*

	Dan y Bont feel under threat to move house after many years of happy safe living. Please would you express our concerns to those who are planning to change our environment and accept responsibility for the safety of the people and their properties. Many Thanks for your anticipated help in dealing with this matter. Yours Sincerely	*Annual prioritisation of schemes.* *The rivers are both the province of the NRW and as such this comment will also be forwarded to their office.*
4	*Translated from a Welsh language letter:* I am writing regarding the above in the village of Lower Brynamman. The River Amman is shown as "Serious flood risk" and an elderly lady living in Amman Cottages has been refused insurance to the house recently. Another pensioner is greatly concerned if he will be rejected in November. Ecclesiastic Insurance has refused insurance to the Old Hall on the Carmarthen side because the River Amman will be shown as "substantial flood risk". I've lived here for 47 years and postcode to my home is SA18 1SN. Because of this can you look into our situation when Insurance companies use these maps showing flooding. I do not think it will be possible for the river to overflow, but he wants the matter to be looked into. In January 1969 we had a landslide when opencast Pengors was working and the majority of the residents had to be moved out. The landslide was behind our home.	*These comments relate to a localised drainage issue and do not fall within the scope of the FRMP. As such this matter has been referred to the Drainage Team for a response and will be addressed privately with the respondent.* *The river is the province of the NRW and as such this comment will also be forwarded to their office.*

5	Having lived in the Glynneath area for 50 years I was amazed to hear that the highest number of properties at risk from flooding in the NPT area is at Glynneath. How were these figures arrived at? Has the local Authority challenged these figures in any way? Did the person who produced the results take into account the large amounts of money spent on constructing the Glynneath Flood Prevention Scheme? I have also spoken with Glynneath residents who have now been informed they live on a flood plain, in reality there has never been any flooding at these locations.	*Glynneath and the majority of the lower Neath Valley are considered within the Flood Plain of the River Neath. The figures were provided by NRW and their derivation and accuracy are all explained in the Appendices of the FRMP. The numbers have not been challenged as they are being employed nationwide. The flood prevention scheme was an NRW scheme to address the risk of river flooding, which is not within the scope of the FRMP.*
6	Would like to see solutions to flooding problems affecting his land caused by the actions taken by various landowners, third parties and developments, which over the years have contributed to increased water flow onto his land.	*These comments relate to a localised drainage issue and do not fall within the scope of the FRMP. The concerns are known to the Authority and are currently under investigation by the Development Control Team.*
7	My elderly mother lives on Heol-y-Nant, Baglan, Port Talbot and has been forced to move out of her home twice due to flooding. She now has poor health and ensuring the prevention of further flooding is critical. NPTC has carried out major work on the culvert to minimise further flooding of the estate. I am therefore very disappointed that my mother's bungalow is still liable to be flooded due to a problem	*These comments relate to a localised drainage issue and do not fall within the scope of the FRMP. As such this matter has been referred to the Drainage Team for a response and will be*

	with the main sewerage system. This has been identified by several camera surveys carried out by Welsh Water, no action has been taken to rectify this. [*This feedback has been edited to omit personal information*]	*addressed privately with the respondent. Welsh Water acknowledges ownership of the problem.*
8.a	**Neath Port Talbot County Borough Council – Flood Risk Management Plan Consultation Draft LLFA FRMP Review comments from NRW** These comments have been collated based on an internal consultation with a number of different teams. **Flood Risk Management Plan Compliance Comments** Please find below draft comments in relation to the compliance of the Neath Port Talbot County Borough Council draft Flood Risk Management Plan with requirements as set out in domestic legislation (The Flood Risk Regulations 2009) or European legislation (The Floods Directive 2007/60/EC). The final review will be undertaken by NRW in accordance with the before mentioned legislation once the final version of the FRMP has been submitted to NRW. Note - page numbers stated within the text refer to those contained within the document itself rather than the pdf page numbers.	
8.b	**NRW comments based upon draft plan:** There is map included on page 14 that shows the boundary of the flood risk area. Additional comment in relation to map on page 13 - you may wish to consider updating this map as it is branded EAW. *Initial review of this draft has deemed this appropriate to meet the requirements.*	*No change required, map was produced by EAW, albeit this now forms part of NRW*

8.c	There are Borough wide conclusions on page 17. These are very high level. There are more conclusions on page 36 which slightly expands on page 17 and there are also conclusions included against each community area in the appendix which in some circumstances includes more detail on severity and reasoning. Some communities are not detailed but others are. It is suggested that more description is added to those conclusions included on pages 17 and 36 to better describe the risk. *Initial review of this draft has suggested that minor amendments are needed.*	*Additional Conclusions and Information added to P.36*
8.d	The objectives from the local Flood Risk Management Strategy are included on page 30. It is not clear that these Objectives have been adopted for the FRMP. If they have, the plan should state that these Objectives have been adopted for the FRMP and are now the FRMP Objectives also. It does state on page 32 that the measures are to deliver the Objectives from section 7.2 and each measure is linked to relevant Objectives, but there needs to be a statement before the Objectives that these are FRMP Objectives now too. *Initial review of this draft has suggested that minor amendments are needed.*	*Section 7.0 -Line added stating LFRMS Objectives are adopted as FRMP Objectives*
8.e	County wide measures are included on pages 38 to 43 and are linked to Objectives. Measures include required fields for EU reporting - code, name, description, type, location, objectives, responsible authority, timescale, implementation status. Each community area is then linked through to the community measures. *Initial review of this draft has suggested that minor amendments are needed.*	*No changes required*

8.f	The review of the FRMP will be undertaken formally every six years. NPT will undertake an internal review annually to check progress. *Initial review of this draft has deemed this appropriate to meet the requirements.*	*No changes required*
8.g	There is currently a description of consultation from pages 52 to 53 which outlines the method. This will need to be updated with a report on Consultation for the final plan.	*Report on Consultation Process Added*
8.h	Pages 27-30 include a statement that NPTCBC has examined the objectives and measures in the River Basin Management Plan (RBMP) and has selected measures in the FRMP that have regard to and do not conflict with the RBMP. It is noted that none of the new measures link to any of the RBMP measures. Considering the list of measures already under way from the LFRMS, some of these will deliver against the RBMP Objectives and Measures (NPT09 - SMPs, NPT18-SUDs, NPT19 - Land Management) therefore it is suggested that you consider making the links between these measures or objectives to strengthen the link between your FRMP and the RBMP. Note: The link to the RBMP will need updating before publication. *Initial review of this draft has suggested that minor amendments are needed.*	*Each measure has now been individually assessed against those contained within the Western Wales RBMP to identify direct links between the measures. Where these have been identified they have been included within section 8.1.3.*
8.i	Mention or reference to the SEA/ HRA seems to be missing from the plan. If the SEA is being adopted from the LFRMS, this needs to be stated that this is the case. If undertaking SEA, this needs to be submitted with the final plan.	*Reference to SEA/ HRA in Section 3.3.7*