Pembrokeshire County Council

LOCAL FLOOD RISK MANAGEMENT STRATEGY

Draft

5170-LFRMS-001
MAY 2024

PUBLIC

Pembrokeshire County Council

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Draft

TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70115170

OUR REF. NO. 5170-LFRMS-001

DATE: MAY 2024

This item is also available in Welsh / Mae'r eitem hon ar gael yn Gymraeg hefyd

Pembrokeshire County Council

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	Draft for PCC Review			
Date	April 2024			
Prepared by	BS			
Signature				
Checked by	CS			
Signature				
Authorised by				
Signature				
Project number	70115170			
Report number	0.1			
File reference				

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Prepare for flooding and what to do if your home or business has been flooded

The Welsh Government provides guidance on what to do before, during and after a flood.

Who to contact for further information

For more information, please visit the following website
https://www.pembrokeshire.gov.uk/emergency-planning/flooding

Or contact –

- Email Address: enquiries@pembrokeshire.gov.uk / emplun@pembrokeshire.gov.uk
- Telephone Number: 01437 764551 / 0345 6015522

1 INTRODUCTION

1.1 THE NEED FOR A LOCAL STRATEGY

The Flood and Water Management Act 2010 requires all 22 Lead Local Flood Authorities (LLFAs) in Wales to produce a Local Flood Risk Management Strategies (Local Strategy).

The Welsh Government's National Strategy for Flood and Coastal Erosion Risk Management (FCERM) in Wales (National Strategy) sets out that over 245,000 properties across Wales are at risk of flooding from rivers, the sea and surface water, with almost 400 properties also at risk from coastal erosion. The National Strategy explains that, as the climate changes, we can expect those risks to increase, with more frequent and severe floods, rising sea levels and faster rates of erosion of the coast.

The National Strategy sets out the legislative context to FCERM activities in Wales. In certain cases, Local Authorities are also required to produce Flood Risk Management Plans (FRMP), under the 2009 Flood Risk Regulations. A summary of the legislative context to FCERM activities in Wales is provided in Appendix B – Legislative Context.

Different Risk Management Authorities (RMAs) in Wales are responsible for different sources of flood risk. LLFAs are responsible for "local flood risk" which is defined as flood risk from:

- Surface water runoff
- Groundwater; and
- Ordinary watercourses (generally smaller watercourses)

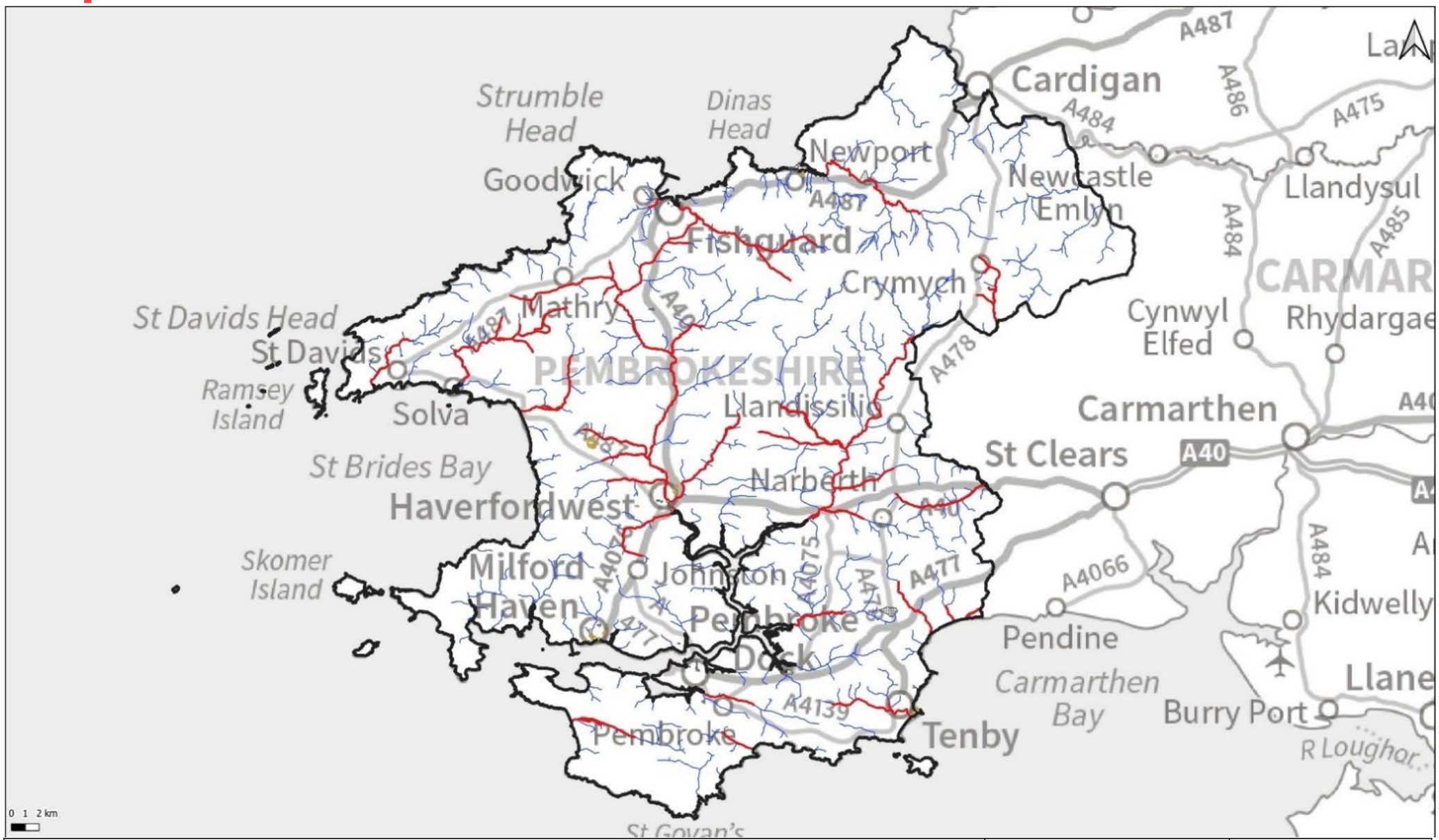
This Local Strategy focuses on these local sources of flood risk but acknowledges and considers other sources of flood risk (including the sea, larger watercourses and sewers) and associated RMAs.

The Local Flood Risk Management Strategy is defined by the administrative boundary of Pembrokeshire County Council, shown in Figure1-1.

The county of Pembrokeshire covers a land area of 1,618km^2 with an extensive length of coastline, the majority of which (420km) comprises Pembrokeshire Coast National Park. The Pembrokeshire ports of Fishguard, Milford Haven and Pembroke Dock are all international assets critical to energy security within the UK. Pembrokeshire has a thriving tourist economy, with approximately £585 million spent by visitors per year meaning a large transient population during peak holiday seasons.

There are two predominant river catchments entirely within the county, the Eastern and Western Cleddau. The headwaters of the River Taf are within Pembrokeshire and the River Ritec and River Gwaun are other notable enmained rivers. Pembrokeshire is bordered by Carmarthenshire to the east and Ceredigion to the north east. The highest point of the county is the Preseli Hills in the north west of the county at 536 metres above sea level. These hills are the headwaters of the Eastern and Western Cleddau, as well as the River Gwaun and River Nevern. The rest of the county is at a lower elevation, with an undulating landscape.

Due to the relatively low density of population, flood risk in Pembrokeshire is generally low. The county is however at risk from river, surface water and coastal flooding and erosion, with the risk from small watercourses and surface water being the highest risk source to residential property.



Key:

PCC Boundary

Watercourses

NRW Main River

Ordinary Watercourse

Drawing Details		
Date	Mar 2024	
Revision	001	
Status	Draft	
Location	PCC	
Drawn BS	Checked CS	Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

Figure1-1 Overview of LFRMS Area

Table 1-1 shows a high level summary of area at risk in the county and Chapter 3 provides a more detailed summary of flood risk.

Table 1-1 – High level summary of flood risk

Risk Level	High		Medium		Low	
Flood Source	Area at Risk (km^2)	Residential Properties at Risk (no.)	Area at Risk (km^2)	Residential Properties at Risk (no.)	Area at Risk (km^2)	Residential Properties at Risk (no.)
Coastal	8.8	60	9.7	113	12.0	198
Main River	29.9	114	33.6	159	40.7	365
Surface Water and Small Watercourse	15.2	367	18.9	538	27.4	1448

1.2 THE PURPOSE OF THIS LOCAL STRATEGY

We published our first Local Strategy in 2015, setting out our overarching approach to managing local flood risk. We also published our Flood Risk Management Plan in 2017. Our FRMP developed the objectives and high-level actions outlined in our Local Strategy into a more detailed plan for managing flooding in our communities.

This document is our second Local Strategy. Whilst we previously published our Local Strategy and FRMP separately, this new Local Strategy integrates the two documents into one. This reduces complexity and enables us to communicate and manage local flood risk more effectively.

In this document we explain how flooding will be managed across our Local Authority area, consistent with the objectives, measures and related policies and legislation set out in the National Strategy. This Strategy published in 2024 will be reviewed in six years, but the Action Plan (Chapter 9 and Appendix C) will be reviewed every two years.

1.3 STRUCTURE OF THIS LOCAL STRATEGY

This document is structured as follows:

- Chapter 2 summarises how this Local Strategy aligns with our other strategic plans, for example our Local Development Plan and Shoreline Management Plan(s). It also summarises how we have developed the Local Strategy in coordination with other stakeholder plans, such as NRW's River Basin Management Plans (RBMPs) and DCWW's forthcoming Drainage and Wastewater Management Plan (DWMP).
- Chapter 3 presents an assessment of the risk of flooding across our Local Authority.
- Chapter 4 gives an overview of climate change flood risk in our area and how this Local Strategy seeks to address these risks.
- Chapter 5 sets out the roles and responsibilities for managing flood risk in our area. It also highlights some of the key policies we have in place for managing local flood risk.
- Chapter 6 summarises the different ways in which flood risk management activities can be funded, as well as how we prioritise these activities.

- Chapter 7 describes our strategic Objectives or ambitions for managing flood risk in the coming years, and how these align with the objectives set out in the National Strategy.
- Chapter 8 sets out our flood risk management Measures. These are broad activities and ways of working which help us to meet our strategic objectives.
- Chapter 9 sets out our flood risk management Action Plan. This is a focused plan, detailing specific actions required to meet our measures.
- Chapter 10 sets out the environmental assessments undertaken to accompany this strategy.
- Chapter 11 describes how we will measure and monitor our progress in delivering the objectives, measures and actions set out in this Local Strategy.

1.4 TARGETS WITHIN THIS LOCAL STRATEGY – OBJECTIVES, MEASURES AND ACTIONS

This Local Strategy sets out our flood risk management Objectives, Measures and Actions. These three groupings provide different levels of detail on how flood risk will be managed. The meaning of each is summarised below:

Objectives

- Overarching targets or outcomes of flood risk management during, or beyond, the Local Strategy cycle.
- Statements of Local Authority ambition for flood risk management.
- Specific to the Local Authority but linked to the National Strategy Objectives.

Measures

- Broad activities and ways of working to meet the Objectives.
- Typically apply to the Local Authority area rather than specific communities/locations within it.
- Are loosely time-bound and are measurable at a high-level, with indicative costs and benefits.

Actions

- Specific tasks, activities or initiatives, planned and tracked, to meet the Measures.
- Reviewed and progress reported on annually and updated every two years.
- Short, medium and long term with clearly defined outputs/outcomes.
- Typically location-specific within the local authority area.

2 COORDINATION OF FLOOD RISK MANAGEMENT

2.1 LEGISLATIVE AND POLICY CONTEXT

There are a number of European, national and local legislation and policies which influence and inform flood and water management in Pembrokeshire. The key legislation and policies that have informed the production of this Strategy are detailed in Appendix B.

The Flood and Water Management Act 2010 sets out the requirement for a Local Strategy which should be consistent with the National Flood and Coastal Erosion Risk Management Strategy prepared by Welsh Government.

There are also various local strategies and plans that are relevant to this Local Strategy as discussed in section 2.2.

2.2 HOW THIS STRATEGY ALIGNS WITH OUR OTHER STRATEGIC PLANS

This Local Strategy is one of a suite of strategies and plans prepared by the council. The key local documents that have informed the preparation of this Strategy are as follows:

2.2.1 CORPORATE STRATEGY 2023-2028 (JANUARY 2023):

The Corporate Plan is the Council's business plan setting out the vision, objectives, and measures until 2028. The vision is 'working together, improving lives' with a specific objective A5- 'promote and support initiatives to deliver decarbonisation, manage climate adaptation and tackle the nature emergency'. The Council plan to do this by promoting the importance of environmental sustainability, winning hearts and minds so that everyone in the communities are inspired to do their bit.

2.2.2 PEMBROKESHIRE PUBLIC SERVICE BOARD WELL-BEING PLAN 2023 – 2028 (MAY 2023):

The Pembrokeshire PSB was established in April 2016 and is tasked with improving the economic, social, environmental and cultural well-being of Pembrokeshire by contributing to the achievement of the Well-being Goals through the delivery of a Well-being Plan. The PSB is made up of senior representatives from the following organisations:

- Pembrokeshire County Council
- Natural Resources Wales
- Hywel Dda University Health Board
- Mid & West Wales Fire and Rescue Service
- Pembrokeshire Coast National Park Authority
- Pembrokeshire Association of Voluntary Services
- Pembrokeshire College
- National Probation Service
- Port of Milford Haven
- Dyfed Powys Police
- Department for Work and Pensions
- PLANED
- Dyfed Powys Police and Crime Commissioner

- Welsh Government

Their vision is to: "*unlock the power and potential of Pembrokeshire's people and communities so that they are happy, healthy and live well, our communities are kind, safe, resourceful and vibrant, our economy is green and thriving, and our environment is protected and enhanced.*"

One of the four main objectives is to: "*Promote and support initiatives to deliver decarbonisation, manage climate adaptation and tackle the nature emergency.*"

2.2.3 LOCAL FLOOD RISK MANAGEMENT STRATEGY (FEBRUARY 2015) AND FLOOD RISK MANAGEMENT PLAN (APRIL 2017):

This Local Strategy and Action Plan builds upon the previous strategy and management plan published in 2015 and 2017. The strategy has been updated to reflect new information, including aligning with the current national strategy and updating objectives and measures for the County Council to ensure current and future relevance in delivering flood risk management.

2.2.4 SHORELINE MANAGEMENT PLANS

Shoreline Management Plans (SMPs) set out a strategic approach to managing coastal flooding and coastal erosion over the short (2005-2025), medium (2025-2055) and long term (2055-2105). The plans consider coastal processes, defence condition and the impact of climate change as well as social and economic factors. They are not statutory documents, but Welsh Government recommend that they are considered in local decision making and strategic planning.

There are two SMPs that cover Pembrokeshire: South Wales Coastal Group (Lavernock Point to St Anne's Head) and West of Wales Coastal Group (St Anne's Head to the Great Orme). Each SMP divides the coastline into policy units and applies one of four approaches:

- Hold the Line
- Advance the Line (approach not applied in Wales)
- Managed realignment
- No Active Intervention

The approach to shoreline management can change over time in some locations, where it is not feasible or sustainable to defend a length of coastline in the longer term, so different approaches may be applied over the different time periods.

In Pembrokeshire, the predominant approach is No Active Intervention as the coastline is not widely developed and the coast will be left to behave naturally. Key locations such as Tenby, Milford Haven, Neyland, Pembroke Dock, Fishguard and Goodwick have been identified as locations to 'Hold the Line' over the long term and defences will be maintained and upgraded to ensure the coastline does not recede. Locations such as Newgale and Dale have been identified as locations that are being controlled through 'managed realignment' where the movement of the shoreline backwards or forwards is controlled or limited.

2.2.5 LOCAL DEVELOPMENT PLAN (ADOPTED 2013)

The Local Development Plan is currently being updated. However, the current adopted plan has the following policies that relate to the Local Flood Risk Management Plan.

GN.1 General Development Policy: Development will be permitted where the following criteria are met: 7. It would not cause or result in unacceptable harm to health and safety;

- 6.8 Where there are concerns that a proposal would cause harm to health and safety through contamination, adverse impact on air quality, land instability, flooding or erosion, professional advice will be sought from the relevant authority. Where such concerns relate to fluvial or coastal flooding and / or erosion, the provisions of the relevant Shoreline Management Plan and / or Catchment Flood Management Plan will inform consideration of the health and safety issues. In some instances, anticipated on-site or off-site problems may render development inappropriate; in other cases, development may be possible if mitigation is available, to make the proposal resilient to the identified problems. No housing allocations have been identified within C1 or C2 flood zones in the Plan. A small number of other allocations are located within C1 or C2 flood zones. Where allocations are at risk of fluvial or surface water flooding, this is identified within the Supplementary Planning Guidance (SPG) Development Sites, with requirements establishing the level of information to be provided at application stage.

GN.2 Sustainable Design Development will be permitted where relevant criteria are met: 3. It incorporates a resource efficient and climate responsive design through location, orientation, density, layout, land use, materials, water conservation and the use of sustainable drainage systems and waste management solutions;

- 6.15 Climate change is a key long-term environmental challenge and the need to reduce emissions and use resources more efficiently is essential. New development will be expected to conform to the recognised national sustainable building standards of the Code for Sustainable Homes (CfSH) and/ or the Building Research Establishment Environmental Assessment Method (BREEAM). These are set out in national planning policy 71. Developers will be required to address energy efficient and climate responsive design at an early stage in the design process through sustainable densities and patterns of development and the incorporation of sustainable building design. Consideration should be given to location, layout, orientation, density, land use, materials, construction techniques, landscaping, water conservation and the use of sustainable drainage systems (SuDS) and waste management solutions. New development proposals will be expected to incorporate sustainable drainage systems and, where appropriate, the use of recycled construction materials, including secondary aggregates.

GN.3 Infrastructure and New Development.

Where development generates a directly related need for new or improved infrastructure, services or community facilities and this is not already programmed by a service or infrastructure company, then this must be funded by the development.

- 6.21 New development places additional demands on infrastructure and services and therefore will be expected to make a contribution73 to social, cultural and physical infrastructure. The provision of adequate and efficient facilities, including utilities such as water supply; foul and surface water drainage; waste management; power generation and distribution; telecommunications; public transport; open space and community facilities, underpins the delivery of sustainable development within the Plan area.
- 6.22 It is also important that provision is made for the mitigation of potential adverse impacts of new development upon biodiversity and cultural heritage. Adverse impacts might include, for example, increased erosion, pressures on habitats and species, changes in landscape character, diminishing cultural heritage or linguistic vitality, noise intrusion, air quality and traffic congestion.
- 6.23 Where necessary, developments will be required to contribute towards infrastructure, landscape improvements and mitigation measures, through planning obligations74, unilateral

undertaking or a Community Infrastructure Levy75 as appropriate. The Council is currently assessing its position with regards to the Community Infrastructure Levy and will consider whether to introduce a Charging Schedule for larger projects. Such a Schedule would function alongside the continued use of planning obligations for small-scale infrastructure and to ensure the provision of affordable housing. Requirements for contributions could include affordable housing, transportation, physical infrastructure, flood alleviation schemes, Sustainable Drainage Systems (SuDS)76, energy schemes, education provision, libraries, community safety, creation or improvements of the leisure network, community facilities, and biodiversity / nature conservation.

2.2.6 LOCAL DEVELOPMENT PLAN 2 (2017-2033, DEPOSIT PLAN, CURRENTLY UNADOPTED)

The Deposit Plan for Pembrokeshire County Council LDP2 is currently being rewritten due to new and updated guidance and other matters occurring since 2020. As such, the current published Deposit Plan for LDP2 will not be progressed. LDP2 will however retain significant policies on flooding and coastal change which will become relevant to this strategy upon adoption of the plan. It is anticipated that the new Deposit Plan will be issued for consultation in Autumn 2024.

2.2.7 PEMBROKESHIRE COAST NATIONAL PARK LOCAL DEVELOPMENT PLAN 2, END DATE 2031 (ADOPTED SEPTEMBER 2020)

As a separate Planning Authority, Pembrokeshire Coast National Park have their own Local Development Plan which was updated in 2020.

The latest plan has the following objectives which link to the Local Flood Risk Management Strategy:

Objectives

C. Climate change, sustainable design, renewable energy, flooding

- Pollution, Unstable Land and Contamination
  - To minimise the creation of new sources of pollution and contamination and to address issues relating to the instability of land within the National Park. (Policy 8 and Policy 9)
- Sustainable Design
  - The design of all development in the National Park reflects its special landscape and townscape qualities and local distinctiveness, meets the highest standards for resource use including minimising waste, and takes account of the impact of a changing climate (Policy 9, Policy 29, Policy 30, Policy 31, and Policy 32).
- Coastal Management
  - To avoid development of undeveloped stretches of the coast at risk from flooding and/or erosion and to allow for any necessary adaptation by taking account of known and predicted climate change impacts on the coast (Policy 8, Policy 17, Policy 18, Policy 33, Policy 34, Policy 35, Policy 36 and Policy 37).
- Flooding

- To ensure vulnerable development does not take place in locations where it may be at risk from flooding or where it would increase the risk of flooding in another location. (Policy 34).

The key outcomes of the LDP that relate to the Local Strategy are:

- (6) Development achieving high standards in terms of sustainable design with all new dwellings meeting the standards set out in national planning policy.
- (8) No highly vulnerable development in areas at risk of flooding both now and in the long term and with no negative impacts elsewhere.

Relevant policies from the plan include:

Policy 32 Surface Water Drainage

- Development will be required to incorporate sustainable drainage systems for the disposal of surface water on site.

Policy 34 Flooding and Coastal Inundation (Strategy Policy) In planning for the future development of the National Park

- a) development will be directed away from those areas which are at risk from flooding now or as predicted for the future by TAN15 Development Advice Maps or Shoreline Management Plan 2 unless there are sound social or economic justifications in accordance with the advice set out in Technical Advice Note 15 (see Policy 35, Policy 36 and Policy 37)
- b) sustainable defence of the coast will be permitted where it can be demonstrated that the works are consistent with the management approach for the frontage presented in the relevant Shoreline Management Plan and there will be no unacceptable adverse effect on the environment.

2.2.8 LOCAL BIODIVERSITY ACTION PLAN (JANUARY 2015):

The Biodiversity Action Plan is the driver for continuing and increasing effort to protect, enhance and manage sources of biodiversity in Pembrokeshire. It sets out the objectives, targets and actions for the conservation of biodiversity within Pembrokeshire.

2.2.9 NATURE RECOVERY ACTION PLAN FOR PEMBROKESHIRE (JUNE 2018)

Pembrokeshire's Strategy for Nature Recovery highlights the key pressures on nature within the county and provides suggested themes of action to address them.

Objective 3 relates to the Local Strategy: Increase the resilience of our natural environment by restoring degraded habitats and habitat creation. For example, by using soft engineering installations and Natural Flood Management (NFM) to restore natural river processes to reduce flood risk with wider environmental benefits.

2.3 COORDINATION WITH OTHERS

PCC are committed to working with other Risk Management Authorities, local stakeholders and action groups to achieve the flood risk objectives, measures and actions within this Local Strategy.

The management of flood risk within Pembrokeshire is developed through a catchment-based approach aligning with the National Strategy to improve environmental, social and economic resilience. This catchment based approach supports interventions such as (NFM) with wider benefits.

The Local Strategy has been developed in consultation with the Risk Management Authorities and other organisations, with reference to their strategic plans as outlined below. Further information on the roles and responsibilities of the Risk Management Authorities is provided in section 5.1.

Pembrokeshire will continue to coordinate with the other RMAs to deliver its strategy, working in partnership where possible.

Pembrokeshire has also undertaken public engagement and consultation activities with the local community in development of this local strategy. The details of which are discussed in Appendix D.

2.3.1 NATURAL RESOURCES WALES

- Flood Risk Management Plan (FRMP) 2023 to 2029

Under the Flood Risk Regulations (2009) (now revoked under the Retained EU Law Act) NRW had a duty to identify areas at significant risk of flooding via a Preliminary Flood Risk Assessment (PFRA) and the produce a FRMP outlining its objectives and measures for managing flood risk over the next six years. The plan covers flooding from rivers, reservoirs, and the sea. The FRMP outlines the priorities and actions proposed to manage the risk of flooding at a national and local level. Pembrokeshire falls under the South West Wales region. No communities within Pembrokeshire have been identifies as specific Flood Risk Areas, however Tenby has been identified as an additional community at risk from flooding where actions are planned in the coming years to help manage and reduce the risk of flooding.

- Western Wales River Basin Management Plan (RBMP) 2021 to 2027

The Western Wales RBMP is a requirement of the Water Framework Directive 2000 (WFD) and has been produced by Natural Resources Wales. The main focus of the plan is the protection, improvement and sustainable use of the water environment. Pembrokeshire is located in the south western section of the RBMP area. During Cycle 3 (2021) the waterbody classifications for the majority of the county are moderate. Three catchments are specified as poor (Nyfer, Wern and Millin Brook) with fish listed as the primary factor for these poor classifications.

The majority of bathing water classifications for Pembrokeshire are classed as excellent within the RBMP Cycle 3 data with Tenby North and Nolton Haven classified as good.

Pembrokeshire contains two of the six priority Opportunity Catchments identified in the RBMP: Cleddau and Milford Haven which covers much of the county, and Teifi (which cross borders with Ceredigion). The priority issues for water quality within Cleddau and Milford Haven are addressing nitrate, phosphorus and sediment pollution from point and diffuse sources, physical modifications to river channels and banks (including historic channel realignment, in-channel structures, floodplain disconnection, barriers to fish passage and the removal/disruption of natural habitats), grazing, trampling and cultivation to bank edge (loss of riverine wildlife corridor) and the widespread presence of invasive species. For the Teifi, the issues are acidification, impact from historic metal mining, diffuse rural pollution from agriculture and forestry, point source pollution from sewage

discharges from wastewater treatment works, intermittent assets and areas away from mains sewerage areas, physical modification and invasive non-native species. Also, priorities include communities at risk of flooding, abstraction demands due to increasing water usage, climate change pressures and taking an integrated approach to riverine and coastal flood risk management.

2.3.2 DWR CYMRU - WELSH WATER

- Water Resource Management Plan (WRMP)

Under the Water Industry Act (1991) water companies are required to produce and maintain a WRMP every five years and review it annually. Dwr Cymru Welsh Water (DCWW) are in the process of updating their WRMP and have published a draft version online (dWRMP24). The overarching objective of the WRMP is to ensure that public water supply is secured. DCWWs main objective for the updated WRMP is to ensure that they will always be able to provide a sufficient water supply to meet customers' demands over the next 25 years by making supply systems resilient to drought in light of climate change and embed sustainable water management.

- Drainage Waste Management Plan (DWMP)

Water and sewerage companies must produce a DWMP which provides a basis for long-term planning looking at current and future capacity, pressures and risks to the networks including climate change and a changing population. To deliver a successful DWMP collaborative working with key stakeholders is vital including NRW and LLFAs. In both 2025 and 2050, the risk of flooding due to blockages and sewer collapses are the biggest concern in the Western Cleddau and Pembrokeshire strategic planning area. The strategy looks at solutions to mitigate flooding and current and future costs of those solutions, incorporating sustainable drainage where possible.

3 RISK OF FLOODING

Flooding remains a key threat to communities across Wales with the potential to cause harm to human health, the environment and economic activity. It can be caused by a number of factors depending on the source of flooding but often it occurs during or in the hours following prolonged and heavy rainfall events.

During the very wet winter of 2023/24, particularly during Storm Ciaran (November 2023) and Storm Henk (January 2024), intense and consistent rainfall and high tide levels restricting the tidal outfall caused very high river levels within the River Ritec in Tenby. As such Severe Flood Warnings were issued, surrounding roads closed and Kiln Park Caravan site evacuated.

Flood risk is the combination of the probability and the potential consequences of flooding.

3.1 SOURCES OF FLOODING IN PEMBROKESHIRE

Figure 3-1 summarises the different types (sources) of flooding affecting Pembrokeshire and the main point of contact for each. Flooding is often due to a combination of these sources. This Local Strategy primarily covers surface water and ordinary watercourses which are under the responsibility of PCC as Lead Local Flood Authority. PCC already have responsibility for groundwater flooding, however risk of flooding from groundwater in Pembrokeshire is very low.

Ordinary watercourses are any watercourse, stream, ditch or culvert which carries water and is not designated as a Main River or public sewer. Flooding occurs when flows exceed the capacity of the channel or culvert and overtop the banks or breach flood defences. Blockage of channels or structures can exacerbate flooding.

Contact **PCC as the LLFA in this case.**

Main Rivers are watercourses which have been classified as Main Rivers due to their importance for land drainage and flood risk. They tend to be larger rivers but not exclusively. Within Pembrokeshire there are several main rivers, which are shown on the map in Figure 3.1.1. Flooding occurs in the same way as for Ordinary watercourses.

Contact **NRW** in this case.

Coastal flooding occurs when high tides combine with severe weather leading to storm surges and large waves. Defences may be overtopped or low-lying land next to the coast may be flooded.

Contact **NRW** in this case.

Coastal Erosion is the wearing away of land by wave action, weathering or high winds. This can cause significant changes to coastlines and expose locations to flood risk.

Contact **NRW and PCC** in this case.

Sewer flooding is often caused by excess surface water entering the public sewer network and overwhelming the capacity of the drainage network. It can also be caused by collapse or blockages in the network or if pumps fail to operate as intended. Flooding can occur from foul, surface water and combined sewers.

Contact **DCWW as the water and sewerage undertaker** in this case.

Road flooding occurs when heavy rainfall exceeds the capacity of the highwater drainage systems and can result in pooling of water on roads and hazardous driving conditions.

Contact the **South Wales Trunk Road Agent** for flooding on motorways or major trunk roads and **PCC as the Highway Authority** for other roads.

Reservoir flooding occurs when there is a failure in above ground storage areas (such as breach in an embankment) which releases water affecting surrounding land and areas downstream. This can occur with little warning and result in very hazardous flooding but is rare in the UK as large reservoirs are strictly managed. Smaller ponds and storages areas could also be a source of flooding.

Contact the **Reservoir owner** in this case.

Groundwater flooding occurs when the natural water table rises above ground level or where water flows from natural springs. This tends to occur after longs periods of heavy rainfall affecting low-lying areas. A type of groundwater flooding can also occur on steep hillsides where water that has soaked into the ground emerges further downhill.

Contact **PCC as the LLFA** in this case.

Figure 3-1 - Sources of Flood Risk

3.2 HOW WE ASSESS FLOOD RISK

Pembrokeshire County Council, as LLFA, uses a number of datasets, along with local knowledge and historic evidence to assess flood risk within the local area. These datasets help Pembrokeshire understand the areas that flooding is more likely to occur and aids in effective management and reduction of flood risk.

Following the previous Local Strategy and FRMP there have been updates and improvements to available mapping and the method that flood incidents are recorded, which has provided the LLFA with a better understanding of flood risk in Pembrokeshire. The available datasets are listed below:

3.2.1 FLOOD RISK ASSESSMENT WALES (FRAW) NATIONAL FLOOD HAZARD AND RISK MAPS

The maps were updated in 2020 following the completion of NRW's national-scale Flood Risk Assessment Wales project.

The National Flood Hazard Maps show the risk of flooding from rivers, the sea, and surface water and small watercourses. For each source the outputs include the extent of flood risk, depth of flooding, hazard rating mapped into four bands (low, danger for some, danger for most and danger for all), and velocity magnitude. Each output is standardised and is mapped for three risk categories, High, Medium and Low risk.

The National Flood Risk Maps include NRW's Economic Toolset data which looks at a number of metrics including impact on people, economic impacts (non-residential properties, key services, transport links) and environmental impacts (WFD protected areas, parks and gardens and historical and heritage sites) for the present-day for three sources of flooding, rivers, the sea and surface water and small watercourses. This information is displayed at community scale using the Communities at Risk Register (CaRR) polygons.

3.2.2 FLOOD MAP FOR PLANNING

The Welsh Government are due imminently to implement a revised TAN15 which will be supported by the Flood Map for Planning and will replace the current Development Advice Map (DAM). The Flood Map for Planning shows the potential extent of flooding, assuming no defences are in place, from rivers and sea and surface water and small watercourses incorporating climate change allowances. The Flood Map for Planning also includes a layer showing the defended zones which are areas benefitting from RMA flood defences with a minimum Standard of Protection of 1 in 100 year (present day) for rivers and 1 in 200 year (present day) for the sea.

3.2.3 SECTION 19 FLOOD INVESTIGATIONS AND HISTORIC FLOODING INCIDENTS

The LLFA under the Flood and Water Management Act (2010) has a duty, insofar that it considers necessary or appropriate, to investigate flooding incidents, including identifying the causes, whether the relevant RMA's have performed their duties in response to the flood and the actions required to reduce or prevent flooding in the future. It should be noted that not every flood incident will trigger a formal Section 19 flood investigation, however Pembrokeshire make best endeavours to attend and investigate all flooding incidents reported to understand the cause and any actions that are required. Records of reported flood incidents are held on Pembrokeshire's online system.

Section 19 Flood Investigations and historical flood incidents records can be useful in providing additional local context and identification of additional areas that may not be highlighted at risk of flooding from national mapping.

3.2.4 STRATEGIC FLOOD CONSEQUENCE ASSESSMENT (SFCA)

The SFCA, which has been prepared to support the forthcoming LDP2 also assesses flood risk from all sources during the baseline and future scenario, using the latest available information and historical incidents records.

3.2.5 CONSULTATION WITH OTHER RMAS

Consultation with other RMAs such as NRW and DCWW also helps to determine additional areas that may not be shown at risk of flooding on national mapping but where there may be issues identified or incidents recorded.

3.2.6 COMMUNITY AREA BOUNDARIES

In line with the National Flood Risk and Hazard mapping and the National Strategy, Pembrokeshire has been split into sixteen community area boundaries which have been delineated taking into consideration the boundaries used in the Communities at Risk Register as well as hydrological catchments. This allows for local scale quantification of flood risk and ensures that the communities at highest risk are identified.

3.3 OVERVIEW OF FLOOD RISK IN OUR AREA

This section summarises the different sources of flooding across Pembrokeshire with a particular focus on the local flood risk.

Flooding is determined by a number of factors: the topography, geology and land use can have a significant impact on where flooding is likely to occur.

The topography of Pembrokeshire varies with higher elevations in the Preseli hills in the northern and north-eastern part of the county, with the remaining area generally lower lying rolling plateau. The coastline is characterised by sea cliffs along the majority of its length.

The geology of Pembrokeshire largely comprises sedimentary and igneous bedrock. The Pembrokeshire Coalfield extends from Saundersfoot to Broad Haven. The bedrock is not particularly permeable.

Land use across the county is predominantly farmland with small, rural isolated villages and settlements. The few major urban centres, Haverfordwest, Pembroke, Milford Haven, Neyland, Fishguard and Goodwick and Tenby make up much of the population centres and as such, given their increased population density, the flood risk to people and property in these locations is generally higher.

Table 3-1 shows the assessment of flood risk to each risk receptor for Pembrokeshire from rivers, small watercourses and surface water, and the sea. The counts are cumulative, i.e. counts at low risk are inclusive of those also at medium and high risk. The majority of flood risk to property is associated with small watercourses and surface water flooding. The counts show that around 370 residential properties within Pembrokeshire are at high risk of flooding from small watercourses and surface water, 114 properties at high risk from river flooding, and 60 residential properties at high risk from coastal flooding. There is more agricultural land at risk from river flooding than other

sources. There may be some duplicate counting of receptors where they are shown at risk on multiple datasets.

3.3.1 FLOOD RISK FROM MAIN RIVERS

Flooding from rivers happens when river levels increase sufficiently to overtop banks or defences, or defences fail.

The Preseli Hills are the headwaters for the largest river catchments in the county with rain falling in this area flowing into tributaries of the Eastern and Western Cleddau, the Gwaun and the Nevern. The floodplains for these rivers are relatively well defined within their incised valleys, though there is some flood risk to property from the Western Cleddau in Haverfordwest.

The River Ritec in the south of the county has a wider floodplain as it flows through Tenby. Flooding is exacerbated by constrictions caused by culverts beneath the A4139 and the railway line which narrows the route available to river flow.

NRW has Flood Alert Areas that cover all the main rivers, with alerts issued when flooding is possible. There are only a few fluvial Flood Warning Areas within the county, limited to the Ritec at Tenby, River Solva at Solva, Western Cleddau at Haverfordwest and Fords Lake at Stepaside. These warnings are issued when flooding is expected, and immediate action is required.

3.3.2 FLOOD RISK FROM ORDINARY/SMALL WATERCOURSES AND SURFACE WATER

Ordinary watercourses are watercourses that are not designated Main River, and also include streams, ditches, lakes, ponds, drains and culverts. Flooding from ordinary watercourses occurs when watercourses exceed their capacity and water levels overtop the bank levels or breaching of flood defences. Flooding can also be caused by blockages in the drainage network, and this most commonly occurs from blockage of grids at the entrance to the culverts but also silt and debris build up inside culverts.

Surface water flooding occurs when prolonged heavy rainfall exceeds the capacity of the drainage network of the local area. Water flows across the ground and means that lower lying areas are more susceptible to flooding as the surface water ponds in dips and hollows. Flooding from surface water can be exacerbated by impermeable surfaces which is why it tends to occur more frequently in urban centres or on roads.

Flooding from smaller ordinary watercourses and surface water are often treated together as they are closely related having similar flooding mechanisms and this is the case for the national mapping. For larger ordinary watercourses the national flooding from rivers mapping can give a better representation.

Within Pembrokeshire, the highest risk of flooding from small watercourses and surface water is generally within the urban centres where drainage infrastructure can become exceeded.

3.3.3 FLOOD RISK FROM THE SEA

Coastal flooding occurs when high tides combine with severe weather leading to storm surges and large waves. Defences may be overtopped or low-lying land next to the coast may be flooded. In addition, high tidal water levels can exacerbate fluvial and surface water flooding by tide locking outfalls.

As much of the Pembrokeshire coastline comprises sea cliffs, coastal flood risk to property is generally concentrated to low spots along the coastline at locations including Tenby, Goodwick, Fishguard, Haverfordwest, Pembroke, Pembroke Dock and Newport.

3.3.4 FLOOD RISK FROM SEWERS

Sewer flooding occurs from manholes and gullies when sewers become overwhelmed by heavy rainfall or when they become blocked, and the capacity of the drainage network is exceeded. Land and properties can be flooded, and this can also sometimes contain raw sewage particularly where there are combined sewers within the county.

There are several recorded sewer flooding incidents that have occurred in the county, these are shown in the Community Area maps in Appendix A.

3.3.5 FLOOD RISK FROM RESERVOIRS

Reservoir flooding occurs when there is a failure in above ground storage areas (such as a breach in an embankment) which releases water affecting surrounding land and areas downstream. This can occur with little warning and result in very hazardous flooding but is rare in the UK as large reservoirs are strictly managed. Smaller ponds and storage areas could also be a source of flooding.

National mapping is available which shows a worst-case scenario if a large reservoir were to fail and release the water it holds. This generally follows the valley bottoms with some larger areas shown at risk where reservoirs are located close to urban areas. However, this reservoir flooding is extremely unlikely to happen as NRW ensures that reservoirs are regularly inspected, and essential safety work is carried out. Llys-y-Fran is the largest reservoir within Pembrokeshire and is owned and operated by Dŵr Cymru Welsh Water.

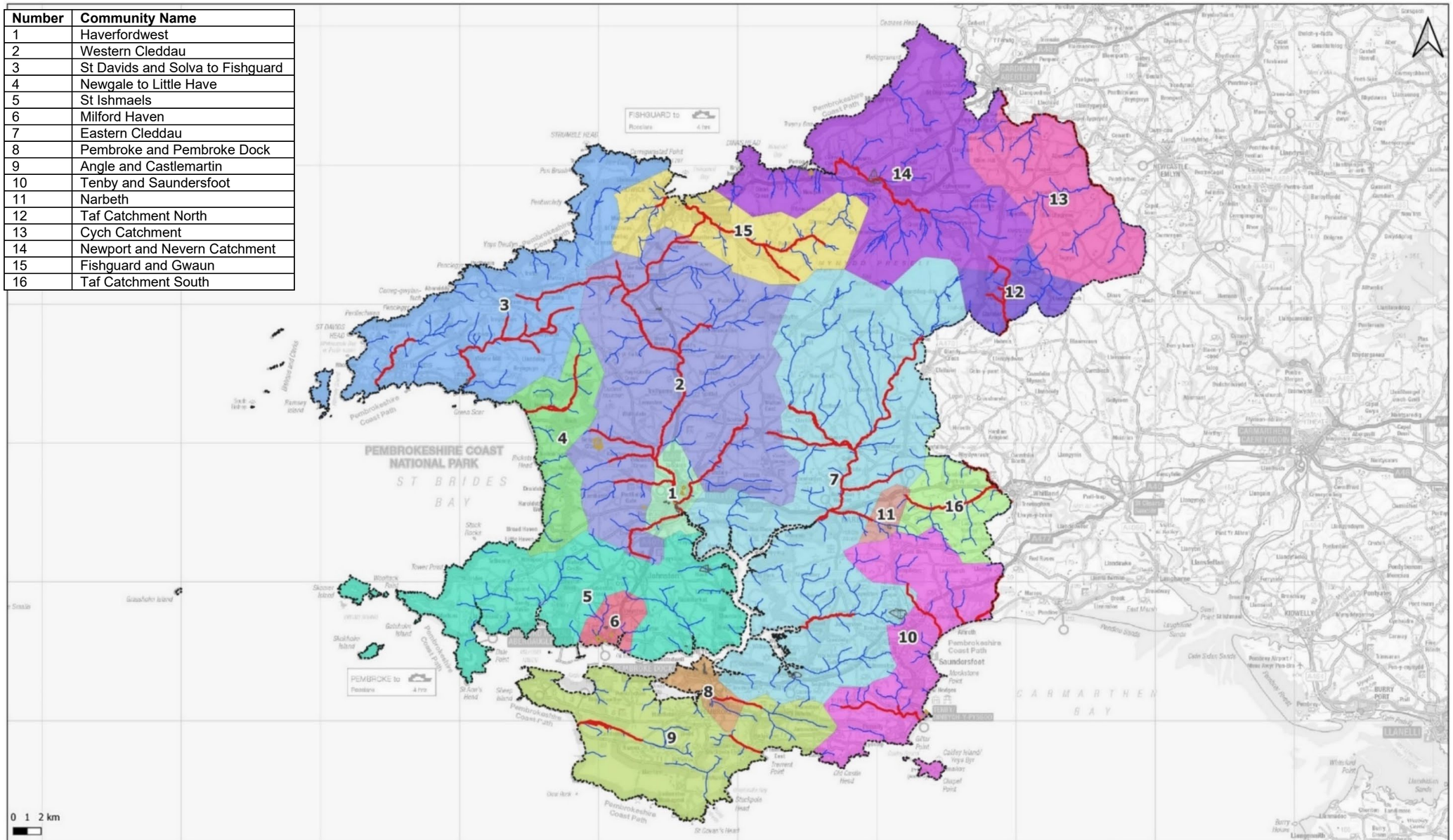
Table 3-1 – Overview of Flood Risk in Pembrokeshire

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	114	159	365	367	538	1448	60	113	198
Essential Services (n)	25	34	51	63	78	134	14	20	30
Non-Residential Properties (n)	128	179	277	144	218	401	64	111	147
Primary/Trunk Roads (km)	30	41	66	44	66	152	23	32	37
Main Line Railways (km)	1	1	6	5	6	13	0	0	0
Agricultural Land - Grades 1, 2 and 3 (ha)	1875	2139	2627	967	1258	2186	1002	1067	1157
Special Areas of Conservation (SAC) (ha)	557	610	706	197	229	306	459	473	484
Special Protection Areas (SPA) (ha)	6	6	7	5	6	12	44	46	48
Ramsar Sites (ha)	0	0	0	0	0	0	0	0	0
Sites of Special Scientific Interest (SSSI) (ha)	660	723	834	219	258	354	509	526	571
National Nature Reserves (NNR) (ha)	54	59	65	19	19	23	12	13	13
Local Nature Reserves (LNR) (ha)	16	17	19	1	1	1	11	11	12
Ancient Woodland (ha)	140	159	194	106	129	176	30	34	39
Registered Parks and Gardens (ha)	61	70	87	37	41	49	26	28	29
Country Parks (ha)	82	83	84	80	80	80	0	0	0
Scheduled Ancient Monuments (SAM) (ha)	4	4	5	2	3	5	5	6	6
Listed Buildings (n)	101	113	182	10	15	26	77	96	122
National Park (ha)	809	923	1111	425	558	881	528	573	670
Conservation Areas (ha)	39	42	56	12	16	25	57	64	73
Caravans (n)	128	356	601	75	89	134	5	6	515

3.4 FLOOD RISK IN YOUR COMMUNITY

To summarise risk at a more local level, we have divided Pembrokeshire into sixteen community areas. These areas are shown in Figure 3-2. Table 3-2 shows a high level summary of the community area and residential properties at risk. Appendix A provides detailed maps with flood risk outlines for each source for each community area, and full tables of risk receptors.

Number	Community Name
1	Haverfordwest
2	Western Cleddau
3	St Davids and Solva to Fishguard
4	Newgale to Little Have
5	St Ishmaels
6	Milford Haven
7	Eastern Cleddau
8	Pembroke and Pembroke Dock
9	Angle and Castlemartin
10	Tenby and Saundersfoot
11	Narbeth
12	Taf Catchment North
13	Cych Catchment
14	Newport and Nevern Catchment
15	Fishguard and Gwaun
16	Taf Catchment South



Key:

PCC Boundary

Watercourses

NRW Main River

Ordinary Watercourse

Drawing Details		
Date	Mar 2024	
Revision	001	
Status	Draft	
Location	PCC	
Drawn BS	Checked CS	Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

Figure 3-2 Community Areas

Table 3-2 – Overview of Flood Risk in Community Areas

Area No.	Community Area	Size (ha)	Notable Settlements	Description	Sources of Flood Risk			River			Small Watercourse and Surface Water			Coastal		
					River	Small Watercourse and Surface Water	Coastal	High	Medium	Low	High	Medium	Low	High	Medium	Low
All	**PEMBROKESHIRE**	**161,791**	**-**	**Entire county**	**Y**	**Y**	**Y**	**114**	**159**	**365**	**367**	**538**	**1448**	**60**	**113**	**198**
1	Haverfordwest	1,913	Haverfordwest	Urban centre of Haverfordwest including Merlins Bridge and Withybush. Key transport connections of A40, A487 and A4086 road and Milford Haven branch of the West Wales railway line. Risk is predominantly from small watercourse and surface water runoff and fluvial risk from the Western Cleddau.	Y	Y	Y	19	33	90	12	29	159	1	5	7
2	Western Cleddau	25,414	Wolf's Castle, Letterston	Incorporates the majority of the Western Cleddau catchment excluding Haverfordwest. Catchment is essentially rural with village settlements throughout. Key transport links include A40 between Haverfordwest and Fishguard. Risk is predominantly from small watercourse and surface water.	Y	Y	N	3	3	8	16	20	48	-	-	-
3	St Davids and Solva to Fishguard	15,524	St Davids, Solva, Porthgain, Abereiddy, Abercastle	Scattered settlements including the city of St Davids in north west Pembrokeshire extending from to St Davids Head to Goodwick. There is a long stretch of coastline, however there are limited low points meaning low coastal risk. Risk is predominantly from small watercourse and surface water.	Y	Y	Y	19	24	30	20	25	66	0	0	0
4	Newgale to Little Haven	5,076	Newgale, Roch, Nolton Haven, Broad Haven, Little Haven	Rural stretch of coastline between Newgale and Little Haven. Previous flooding on A487 at Newgale due to tide and wave action overcoming coastal defences. Risk is centred on Newgale and predominantly from small watercourse and surface water.	Y	Y	Y	1	1	1	32	35	45	0	0	0
5	St Ishmaels	14,208	Neyland, St Ishmaels, Marloes, Dale, Tiers Cross, Johnston	Predominantly rural area covering from Marloes to the Western Cleddau. Includes the larger settlement of Neyland and nationally important South Hook, Dragon and Milford Haven fuel terminals. Risk is predominantly from small watercourse and surface water.	Y	Y	Y	0	0	2	22	28	91	2	8	12
6	Milford Haven	1,332	Milford Haven	Urban centre of Milford Haven which includes Milford Haven branch of West Wales railway line and A4076 trunk road. Risk is predominantly from small watercourse and surface water.	Y	Y	Y	3	4	4	8	14	55	1	3	5
7	Eastern Cleddau	32,576	Clynderwen, Sageston, Cosheston	Large but essentially rural area draining the Preseli Hills in the north and extending south down to the Daugleddau incorporating the Eastern Cleddau catchment. Area contains important transport links of A40 and A477, plus the Fishguard branch of the West Wales railway line. Risk is predominantly from small watercourse and surface water.	Y	Y	Y	3	7	19	24	39	87	1	2	2
8	Pembroke and Pembroke Dock	1,304	Pembroke and Pembroke Dock	Urban centre of Pembroke and Pembroke Dock. Highest coastal flood risk to residential property within the county and relatively high small watercourse and surface water risk.	Y	Y	Y	0	0	5	16	37	141	22	43	88
9	Angle and Castlemartin	12,097	Angle, Castlemartin, Freshwater East, Jameston	Predominantly rural area with nationally critical infrastructure including Pembroke Refinery and Pembroke Power station. Also includes Castlemartin Military Ranges and the Pembroke Dock branch of the West Wales railway line. Risk is generally low, with predominant risk from small watercourse and surface water	Y	Y	Y	1	2	3	6	10	56	2	6	13

Area No.	Community Area	Size (ha)	Notable Settlements	Description	Sources of Flood Risk			River			Small Watercourse and Surface Water			Coastal		
					River	Small Watercourse and Surface Water	Coastal	High	Medium	Low	High	Medium	Low	High	Medium	Low
10	Tenby and Saundersfoot	9,452	Tenby, Saundersfoot, Ludchurch, Templeton, Amroth, Manorbier	Coastal towns of Tenby and Saundersfoot, extending up to Amroth and county border. Includes A477 and A478 trunk roads, as well as Pembroke Dock branch of the West Wales railway line. Fluvial flood risk occurs from the River Ritec which inundates the holiday park north of the railway line, and properties in the Clicketts. There is also risk of flooding from small watercourses and surface water as well as some coastal flood risk.	Y	Y	Y	5	16	65	53	83	175	6	11	21
11	Narberth	848	Narberth	Urban centre of Narberth. Area contains a short length of A40 trunk road. Flood risk is low, and generally limited to small watercourse and surface water flooding.	Y	Y	N	0	0	2	5	10	35	-	-	-
12	Taf Catchment North	2,926	Hermon, Llanfyrnach, Glandŵr	Rural area in the northern headwaters of the River Taf. No significant urban conurbations or infrastructure. Flood risk is low from all sources.	Y	Y	N	0	0	1	5	6	13	-	-	-
13	Cych Catchment	8,575	Bwlch-y-groes, Boncath, Cilgerran, Bridell	Rural area covering the western catchment of the River Cych. No significant urban conurbations or infrastructure. Flood risk is predominantly from small watercourses and surface water.	Y	Y	Y	3	4	21	17	20	48	0	0	0
14	Newport and Nevern Catchment	18,887	Newport, Crymych, St Dogmaels, Dinas Cross	Area covers coastline between Cardigan and Newport and inland to Crymych at head of River Nevern catchment in the Preseli Hills. Infrastructure includes A487 Cardigan to Fishguard road. Highest residential property risk from small watercourses and surface water within the county with some fluvial risk in communities along the River Nevern and some coastal risk in Newport.	Y	Y	Y	49	52	63	82	99	211	5	8	15
15	Fishguard and Gwaun	7,856	Fishguard, Goodwick	Urban centres of Fishguard and Goodwick including River Gwaun catchment. Flood risk is centred on Fishguard and Goodwick, particularly in Lower Town. Significant infrastructure includes A40 and A487 trunk roads, Fishguard branch of West Wales railway line and Fishguard Harbour and ferry port. Risk is present from all three main sources, with relatively high risk compared to the rest of the county from small watercourse and surface water.	Y	Y	Y	8	13	49	40	71	199	20	27	35
16	Taf Catchment South	3,804	Llandewi Velfry, Lampeter Velfry	Rural area in the southern headwaters of the River Taf. No significant urban conurbations but does contain A40 trunk road and Pembroke Dock branch of the West Wales railway line. Flood risk is low from all sources.	Y	Y	N	0	0	2	9	12	19	-	-	-

4 CLIMATE CHANGE

The Senedd was the first Parliament in the world to declare a climate emergency. Climate change is likely to increase the risk of flooding across Wales, not only through sea level rise but also from more frequent and intense storms, flash flooding and storm surges. The National Strategy highlights how Wales is already experiencing adverse impacts from climate change such as sea level rise, flooding and heatwaves.

In winter, rainfall in Wales is expected to increase by approximately 6% by the 2050s from a 1981-2000 baseline. Conversely, summer rainfall is expected to decrease by approximately 15% by the 2050s, and between 18% to 26% by the 2080s[1].

Pembrokeshire County Council declared a climate emergency on the May 2019 and went on to create an action plan to steer PCC towards becoming a net zero carbon local authority by 2030. The South Wales Energy Strategy provides a strategic pathway and the Pembrokeshire Local Area Energy Plan (LAEP) builds upon this work describing actions needed to reach energy and climate goals.

Higher rainfall will place increased pressure on the capacity of existing drainage systems and flood risk management infrastructure leading to more frequent and severe flooding incidents. Furthermore, increasing sea levels will increase the risk of coastal flooding and erosion. The available flood mapping indicates climate change will lead to increases in flooding with flood risk from the sea encroaching further into low lying land at Newgale, Tenby, Haverfordwest and Pembroke. The risk from rivers is shown to increase, particularly around Haverfordwest. Increasing river levels are also likely to affect the operation of drainage systems leading to increased flooding from surface water and ordinary watercourses.

4.1 HOW OUR STRATEGY ADDRESSES THESE RISKS

This Local Strategy will help to manage some of the effects of climate change in our area. The strategy takes a long-term view with objectives, measures and actions to help us to reduce the risk of flooding where we can, as well as adapt our communities and infrastructure to become more resilient to flooding when it occurs.

The Local Development Plan is being developed with consideration of the effects of climate change on flood risk. A revised TAN15 is expected to come into force imminently. The revised definition of Flood Zones specifically includes for the effect of climate change with guidance and policies that define appropriate development for each zone.

Welsh Government's guidance on Adapting to Climate Change stipulates allowances that should be applied in the assessment and development of flood alleviation schemes. The allowances allow for the uncertainty in climate change forecasts and ensure the effects are considered early in the process and consider the resilience of the scheme to high end forecasts. Similar guidance is

[1] Adapting to Climate Change Progress in Wales, Climate Change Committee, September 2023

provided for the allowances that should be applied when assessing the effects for new development in Flood Consequence Assessments.

5 ROLES AND RESPONSIBILITIES FOR MANAGING FLOOD RISK

5.1 RISK MANAGEMENT AUTHORITIES AND THEIR FUNCTIONS

As shown in Figure 3-1, there are several different sources of flooding and different organisations have responsibilities for managing the risk. The term "Risk Management Authority (RMA)" refers to organisations that have legislative powers concerning flood risk management. RMAs across Wales include NRW, the 22 local authorities (both as Lead Local Flood Authority (LLFA) and Highway Authority), water companies and the Welsh Government as Highway Authority for trunk roads (through their trunk road agents). In addition to statutory duties defined in the FWMA the Act sets out a range of permissive powers for RMAs enabling them to undertake defined activities if they so wish and have the resources to do so.

Table 5-1 summarises which RMAs are primarily responsible for managing flood risk dependent on the source. Roles, responsibilities are further described below. Contact details are provided on the council's website[2].

Table 5-1 – RMA responsibilities across Pembrokeshire

Source of flooding	LLFA	NRW	Water Company (DCWW)	Highway Authority (PCC)	Highway Authority (SWTRA)
Coastal		✓			
Main River		✓			
Ordinary watercourse	✓				
Surface water	✓			✓ (on or coming from local highways)	✓ (on or coming from trunk roads)
Groundwater	✓				
Sewer flooding			✓		
Reservoirs		✓			

[2] https://www.pembrokeshire.gov.uk/emergency-planning

5.1.1 LEAD LOCAL FLOOD AUTHORITY (PCC)

Under the Flood and Water Management Act 2010 Pembrokeshire County Council became the LLFA for its administrative area and is responsible for managing local flood risk from ordinary watercourses, surface water runoff and groundwater.

The Flood and Water Management Act 2010 has placed a number of statutory duties on Local Authorities as LLFA which includes:

- The preparation of local flood risk management strategies (this strategy);
- A duty to comply with the National Strategy;
- A duty to co-operate with other authorities, including sharing data;
- A duty to investigate all flooding within its area insofar as the LLFA consider it necessary or appropriate;
- A duty to maintain a register of structures and features likely to affect flood risk;
- A duty to contribute to sustainable development;
- Regulation of activities that could affect the flow of water in Ordinary Watercourses.

In addition to these each LLFA has a number of permissive powers which include:

- Powers to request information;
- Powers to designate certain structures or features that affect flood or coastal erosion risk;
- The expansion or powers to undertake works to include broader risk management actions; and,
- The ability to cause flooding or coastal erosion under certain conditions.

On the 1st May 2018 (with effect from 7th January 2019) Wales enacted Schedule 3 of the Flood and Water Management Act 2010, which requires surface water drainage for new developments to be approved by the local authority acting as the SuDS Approving Body (SAB) prior to the start of construction work. Surface water drainage systems for new developments must be designed and built in accordance with standards published by Welsh Ministers. The SAB also has a duty to adopt and maintain the approved surface water drainage systems if the proposals are in line with the necessary conditions. These are as follows:-

For SuDS serving more than one property, the SAB will adopt and be responsible for the maintenance of, the system so that the SuDS continues to comply with SuDS Standards. In order to be adopted by the SAB the drainage system must be constructed and function as approved in accordance with the SuDS Standards and any conditions of approval stipulated by the SAB.
Highway authority

PCC is responsible for the non-trunk roads in the county whilst the South Wales Trunk Road Agent (SWTRA) acting on behalf of the Welsh Government is responsible for the network of trunk roads.

Under the Highways Act 1980, the Highways Authority has the responsibility to maintain the highway drainage system and is responsible for carrying out routine and reactive maintenance works to these systems to ensure they are working effectively and to their designed capacity.

5.1.2 NATURAL RESOURCES WALES

Natural Resources Wales has an oversight role for flood and coastal erosion risk management and duties and powers to manage flooding from main rivers, reservoirs and the sea.

The Flood and Water Management Act 2010 has placed a number of statutory duties on NRW:

- Co-operating with other authorities, including sharing data;
- Reporting to the Minister on flood and coastal erosion risks in Wales including the application of the National Strategy; and,
- The establishment of Regional Flood and Coastal Committees (now replaced by the Wales Flood and Coastal Erosion Committee).

Natural Resources Wales also has a number of “permissive powers” which allow them to do the following but do not compel them to:

- Powers to request information;
- The ability to raise levies for local flood risk management works, via the Regional Flood and Coastal Committees;
- Powers to designate certain structures or features that affect flood risk;
- The expansion of powers to undertake works to include broader risk management actions; and
- The ability to cause flooding under certain conditions.

NRW is also responsible for the regulation of activities that may affect the flow of water in Main Rivers.

5.1.3 DWR CYMRU – WELSH WATER

Dŵr Cymru Welsh Water (DCWW) is responsible for the provision of a continuous high-quality supply of drinking water and for taking away, treating and properly disposing of the waste water that is produced. DCWW are responsible for maintaining their assets which along with the above can also include public surface water sewers and combined sewers.

In terms of flooding, they have the responsibility to investigate and respond to floods from water and sewerage systems which include sewer flooding, burst pipes or water mains or floods caused by system failures.

The Flood and Water Management Act 2010 places a number of statutory duties on water and sewerage companies including:

- A duty to act consistently with the National Strategy;
- A duty to have regard to the content of the relevant Local Strategy; and.
- Co-operation with other Authorities, including sharing data.

5.1.4 WELSH GOVERNMENT

SWTRA, working on behalf of Welsh Government, takes on the responsibilities as a Risk Management Authority under the Act as stated above.

Welsh Government prepares the National Flood Risk Management Strategy and manages the grant funding streams for flood risk management schemes and activities which are available to other LLFAs and other RMAs to support their activities.

5.2 OTHER RESPONSIBLE PARTNERS

In addition to the designated Risk Management Authorities, there are also a number of other organisations and individuals who have responsibilities to maintain their assets and contribute to effective flood risk management in Pembrokeshire.

5.2.1 RIPARIAN LANDOWNERS

These are the owners of land adjoining or above a watercourse (including streams, ditches and culverts). Riparian landowners are generally responsible for the land up to the centreline of any watercourse adjacent to their property[3]. They have a number of responsibilities which include:

- Ensuring that water flows through their land without obstruction, pollution or diversion which affects the rights of others;
- Keeping the banks clear of anything that could cause an obstruction and increase flood risk;
- Maintaining the bed and banks of the watercourse and clearing any debris that could cause an obstruction (even if it did not come from their land);
- To accept natural flood flows through their land (even if caused by inadequate capacity downstream);
- Not causing any obstruction to the free passage of fish;
- Ensuring any structures (culverts, trash screens, weirs) are clear of debris.

Landowners need to check with the LLFA (Ordinary Watercourses) or NRW (Main Rivers) for approval requirements for works within or adjacent to watercourses.

5.2.2 RESIDENTS, PROPERTY AND BUSINESS OWNERS

Residents, property and business owners are responsible for the protection of their own properties against flooding and maintaining any private drainage infrastructure such as gutters, down-pipes and soakaways. Property owners have the right to defend their property as long as they do not increase the risk of flooding to other properties.

Residents and owners of properties at high risk of flooding should consider methods of protection to make sure they are adequately resilient to flooding and to help protect themselves from future flooding. The Blue Pages[4] website has further information on how to reduce the risk of flooding to homes and businesses. We also recommend residents and business prepare a flood plan so you know what to do in the event of a flood. Guidance on how to write a plan can be found on NRW's website[5].

5.2.3 NETWORK RAIL AND TRANSPORT FOR WALES

Whilst these organisations are not designated RMAs, they have responsibilities as landowners and infrastructure owners / operators to maintain drainage infrastructure and assets that pose a risk of flooding.

[3] https://naturalresources.wales/flooding/owning-a-watercourse/?lang=en

[4] https://bluepages.org.uk/

[5] https://naturalresourceswales.gov.uk/flooding/preparing-for-a-flood/?lang=en#:~:text=Write%20a%20flood%20plan%20so,to%20call%20in%20an%20emergency.&text=Find%20how%20to%20keep%20your,the%20RSPCA%20and%20Blue%20Cross.

5.2.4 OTHER STAKEHOLDERS / PARTNERS

There are several other council departments or external organisations that have responsibilities as landowners, stakeholder interests or that may work in partnership with the council to manage flood risk as listed below.

Internal teams

- Highways
- Strategic planning
- Development & Building control
- Emergency Planning / Civil contingencies
- Parks & Countryside
- Environmental Health
- Nature & Conservation / Ecology
- Corporate Estates
- Customer Services
- Transport Planning

External organisations

- Pembrokeshire Coast National Park Authority
- South West Wales Flood Risk Management Group
- Emergency Services
- National Farmers Union
- Port Authorities
- Utility providers
- Local partnerships, forums and community groups
- Housing Associations
- National Flood Forum
- Dyfed Powys Local Resilience Forum
- SuDS Working Group for Wales
- Parish & Town councils
- Common Land representatives

5.3 HOW WE MANAGE FLOODING IN OUR AREA

This section describes how we currently manage local flood risk across the County. This includes our approach to flood reporting and investigations, asset inspections and maintenance and development control (national and local policies) as well as consenting.

5.3.1 FLOOD REPORTS AND INVESTIGATIONS

Flood incidents reported to the council are recorded onto a database where the location, source, cause, problem and impact of flooding can all be included (depending on the detail available). Where we see several reports affecting the same area, or frequent reports of flooding, we aim to investigate further and determine if any mitigation is feasible and justified. The incident reports are

used to support grant applications where applicable. Incidents can be reported through our council contact centre with details available on our website[6].

When there is a significant flood event then a formal FWMA Section 19 (S19) Flood Investigation will be carried out. The threshold for undertaking a S19 investigation can be set by individual LLFAs and for Pembrokeshire has been set as:

- 20 properties flooded internally from the same source of flooding within the same geographical area; or
- Critical infrastructure (such as hospitals, ports, or sections of the A40, A4076, A477 or A478) are shut due to flooding for 1 hour or more; or
- Communities are cut off, without vehicular access, for 24 hours; or
- There is risk to human life.

The Section 19 flood investigation seeks to identify the cause of flooding and whether the relevant RMAs have performed their duties in response. Where relevant, the S19 report will also make recommendations and identify further actions to reduce the risk of flooding in the future. The council has a duty to publish the findings of the S19 investigation. To date the council has completed one S19 investigation into flooding which affected Lower Town, Fishguard in January 2014.

5.3.2 ASSET RECORDS AND DESIGNATION

We have a comprehensive record of watercourse and drainage infrastructure within the county and have identified the flood risk associated with these assets in accordance with Section 21 of FWMA. These have been provided to NRW and are listed on the National Flood Asset Database[7]. New SuDS schemes, which go through the SAB, are also entered into our records.

5.3.3 MAINTENANCE AND IMPROVEMENT SCHEMES

Our Highways Maintenance team have an inspection programme for all our watercourse and drainage assets. They record their findings on our asset data management system and activate any maintenance works if the outcome of the inspection requires it.

We tend to complete improvement schemes or repairs on an ad-hoc basis when flooding occurs, or significant defects have been identified from surveys. A recent example is Lower Priory and Havens Head where, following the flooding in November 2018 that flooded residential properties, we are in the final stages of designing and constructing a new culvert and outfall to help mitigate flood risk in the area.

5.3.4 DEVELOPMENT CONTROL

The management of flood risk associated with new developments which go through planning is enforced through development control policies, which reflect national policy (TAN15). The council is considering the requirements and implications of the forthcoming TAN15 revision whilst preparing

[6] Resident - Pembrokeshire County Council

[7] Natural Resources Wales / Find flood defence structures near you (The National Flood Asset Database)

the revised Local Development Plan. The flood risk management team is consulted on the majority of proposals.

Schedule 3 of the FWMA now requires that all new developments over 100m^2 incorporate sustainable drainage in accordance with the national standards. Well-designed sustainable drainage schemes mimic natural drainage processes to manage flood risk and reduce the pressure on downstream watercourses or traditional drainage systems. They can also provide further water quality, biodiversity and amenity benefits.

Pembrokeshire County Council, in its role as a SAB, is responsible for technical approval of the sustainable drainage schemes and subsequent adoption and ongoing maintenance where the schemes meet relevant conditions for both Pembrokeshire and Pembrokeshire Coast National Park LPA areas. The council completes the technical reviews internally. The implementation of Schedule 3 is increasing the use of sustainable drainage for new development across the county.

The council welcomes the increased use of SuDS but recognises it places a long-term maintenance responsibility on the council and plans and procedures will need to be put in place to manage this.

The council also regulates work affecting ordinary watercourses with consents required for works that may cause an obstruction to the watercourse.

5.3.5 FLOOD RESPONSE

The council's Emergency Planning Unit co-ordinate the council response when a flood incident is forecast or occurs. The council provide sandbags if the source of flooding is from a Council owned asset:

The response is prioritised as follows:

1. Prevent loss of life or serious injury
2. Protection of vulnerable populations
3. Protection of key infrastructure i.e. electrical substations, drinking water supply, key highways, to maintain access for emergency services.
4. Protection of key facilities and buildings within the community
5. Protection of residential property (priority to vulnerable people)
6. Protection of business/commercial property

The council strongly encourages residents and property owners to make their own arrangements and flood plans to protect their properties as it is not the council's responsibility to do so.

5.3.6 COORDINATION

The council is a member of the South East Wales Flood Risk Management Group which typically meets every 2-3 months to share experiences and the approaches each LLFA is adopting to deliver their responsibilities.

The council contacts NRW and DCWW as relevant in case of flooding or problems with infrastructure. At present there are no regular RMA group meetings or a process of regularly sharing data between RMAs. Previously there was a process of sharing data with Mid West Wales Fire and Rescue Service, to understand and collate flood related calls, however this has not occurred recently.

The council works with local community flood groups and flood wardens where possible.

6 STRATEGIC OBJECTIVES

6.1 NATIONAL STRATEGY OBJECTIVES

The National Strategy sets out an overarching aim to reduce the risk to people and communities form flooding and coastal erosion. It identifies five objectives for delivering this aim. These are summarised in Figure 6-1.

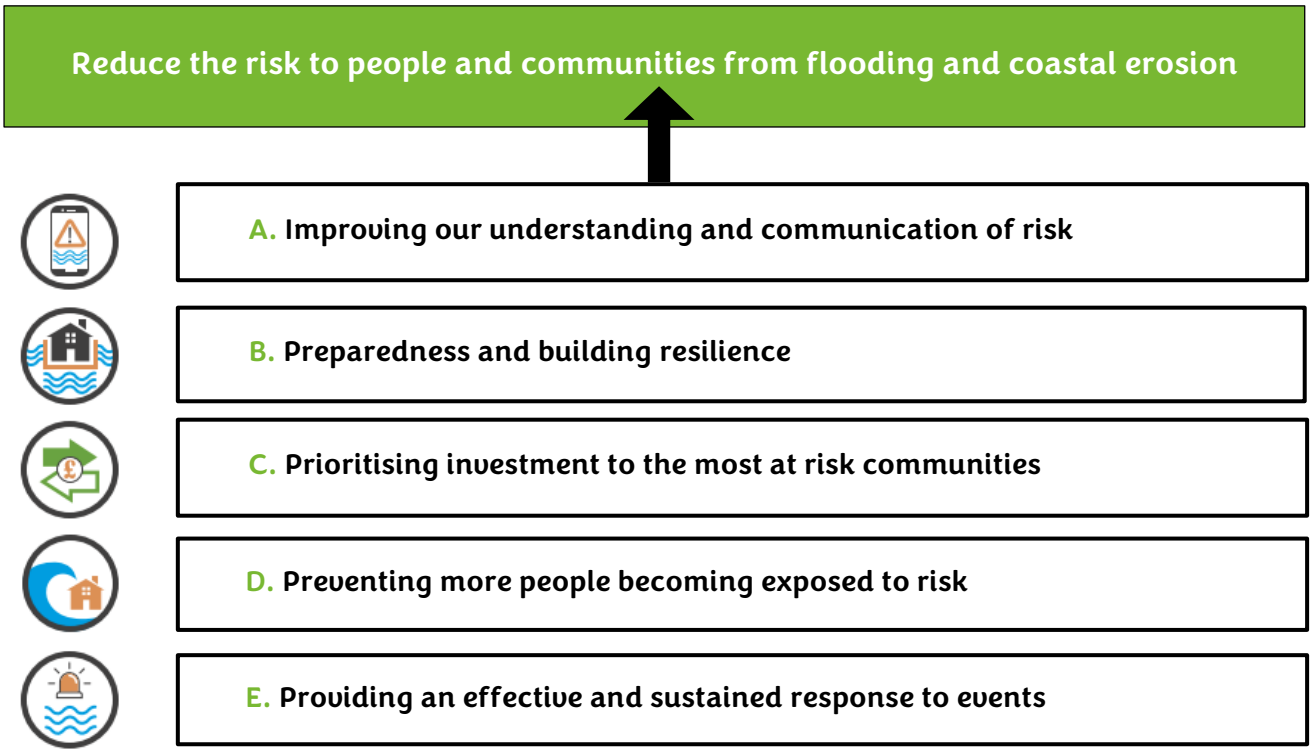


Figure 6-1 - National Strategy Objectives

For this Local Strategy, we have developed our own strategic objectives which both align with the National Strategy objectives and reflect our local context and priorities.

6.2 OBJECTIVES IN OUR AREA

Table 6-1 summarises our local objectives and how they link to national objectives.

Table 6-1 – Local Strategy Objectives

PCC Objectives		Description	National Objectives				
			A	B	C	D	E
1	Minimise people becoming exposed to high risk of flooding	Minimise the impact of climate change and other socio-economic factors increasing the high risk of flooding.	X	X	X	X	
2	Improve understanding of local flood risk in Pembrokeshire and how this may change in future	Continue to develop and improve how flood risk is changing across the county due to climate change to inform communities, future strategies, investment plans and emergency planning.	X		X		
3	Improve preparedness, resilience and mitigation of current and future flood risk	Ensure resilience and efficiency within the LLFA now and in the future to be able to prepare for and respond to flooding.	X	X			X
4	Enable communities and landowners to understand, manage, prepare and respond to flood risk	Raise awareness of existing and future flood risk within Pembrokeshire and provide tools to empower communities and landowners to prepare and respond to flooding.		X		X	
5	Risk Management Authorities establish a collaborative and holistic approach to Flood Risk Management throughout Pembrokeshire	Ensure that maximum benefits are gained from working together across RMAs to provide betterment in all schemes and maintenance.	X	X			X
6	Ensure a risk-based approach to capital and revenue investment decisions	Prioritise investment (in both capital and revenue) to communities most at risk in accordance with Welsh Government guidance.	X	X	X	X	X

7 FUNDING AND PRIORITISATION

7.1 FUNDING OPTIONS

Measures to manage local flood risk are funded from a range of sources.

Welsh Ministers may provide revenue and capital grants in relation to FCERM activities. The Welsh Government will work with RMAs to develop a 5 to 10 year investment programme of future FCERM capital schemes, justified in accordance with the FCERM Business Case Guidance[8].

The following are the main sources of funding available to the council to support FCERM activities.

PCC Revenue funding – Core funding covering staff salaries and day to day activities, strategic assessments and planning (such as this Local Strategy). Revenue funding also covers regular maintenance activities and flood response.

PCC Capital funding – Potentially available to fund new improvement schemes or significant refurbishment costs. PCC capital funding would also typically be used to provide the match funding under WG capital grants.

Welsh Government FCERM Revenue grant – This grant supports Local Authorities to deliver their FCERM activities and duties under the FWMA that are not eligible for capital grants. The grant may cover staff costs and other activities such as raising community awareness, surveys and data base improvements.

Welsh Government FCERM Capital grants – This grant supports the development, design and implementation of new flood alleviation schemes or major maintenance of existing assets. The grants typically require an element of match funding. Proposed schemes must go through a business case process to demonstrate the preferred scheme has been selected with proper consideration of alternatives and provides value for money. This process can take a number of years. Applications for funding are considered by WG who prioritise and allocate funding considering applications received from all RMAs across Wales.

Welsh Government Small Scale Works Grant - This supports Local Authorities to carry out smaller works, resilience measures on a community scale, NFM and essential maintenance through a simplified process. Funding is available annually for works up to £200,000 (2022/23) and has proved successful in driving delivery and risk reduction, with £4.3 million allocated for such schemes across Wales in 2020-21.

Welsh Government Resilient Roads fund – This is available for projects that reduce disruption to the highway network from severe weather and flooding, especially to the public transport network. It is intended to improve resilience and adaptation to climate change.

[8] The Welsh Government, June 2019, Flood and coastal erosion risk management (FCERM): business case guidance

Welsh Government Local Transport fund – This supports the delivery of the Wales transport strategy which, amongst others, seeks to deliver a sustainable transport system that adapts to and mitigates for climate change.

Community Infrastructure Levy (CIL) – The majority of new developments over 100m^2 are charged the CIL which is held in a central council fund and is available to council departments to bid for, to deliver infrastructure improvements, which can include improvements to the strategic drainage network.

Developer contributions (Section 106 payments) – These are sometimes required of developers and can take the form of financial contributions towards infrastructure improvements or a requirement the developer undertakes the works themselves. Unlike CIL, these improvements must directly relate to works needed to offset the effects of the development and make it acceptable in planning terms.

Local contributions - This may include contributions from private individuals or organisations or community groups. Partnership working and partnership contributions are encouraged under the terms of the Welsh Government FCERM grants.

7.2 HOW WE PRIORITISE MEASURES AND ACTIONS

We have not explicitly prioritised our measures and actions, nor our community areas as risk is generally low across the county.

The Welsh Government prioritises FCERM schemes which primarily reduce risk to homes. Businesses and public buildings can also benefit from schemes, in particular those which reduce risk to a mix of development types such as homes and shops along a high street or local district centre. Schemes which only reduce risk to businesses remain eligible but should not be prioritised over schemes which reduce risk to homes. Funding is not available to enable new development. RMAs applying for funding are encouraged to identify wider benefits such as regeneration opportunities, improvements to habitats/biodiversity, mental health or recreational benefits. Early consideration of aligning multiple benefits to secure wider funding is encouraged. Where significant benefits are identified to third parties, it is expected RMAs will work both internally and externally (for example with infrastructure providers, utilities, industry and commerce) to identify and secure appropriate partnership funding contributions from those benefitting from a scheme.

Welsh Government prioritise funding to FCERM schemes based on the following considerations:

- Communities at Risk Register ranking
- Details of previous flood events
- Properties benefitting (existing properties, new development is not supported)
- Benefit to cost ratio
- Opportunities for wider benefits (e.g. public amenity or recreational and biodiversity benefits)
- Opportunities for wider funding (e.g. working with utilities or infrastructure providers)

Welsh Government promotes the use of Communities at Risk Register dataset as a consistent way of ranking and considering flood risk from all sources, but also acknowledge that it is only one tool and that locally available information on past flood events is just as important. Funding is currently available to reduce risk to existing homes and businesses, it is not available for future development or temporary residences. We will continue to use the Welsh Government guidance to prioritise schemes based on risk and multiple benefits.

8 FLOOD MEASURES

8.1 INTRODUCTION TO FLOOD MEASURES

The strategic objectives outline in Section 6.2 will be delivered through implementation of a wide range of measures.

The measures have been grouped by the following flood management themes:

- Prevention
- Protection
- Preparedness
- Recovery and Review

The measures are presented in the following sections, categorised according to the management theme.

Each measure has been provided with an indicative timescale and cost for implementation or delivery. These have been banded as follows:

Timescales

- Recurring – Ongoing activities or repeated regularly throughout lifetime of Local Strategy
- Short (1-2 years) – Planned for delivery within Action Plan period (2 years)
- Medium (2-5 years) – Planned for delivery within Strategy lifetime (6 years)
- Long (5+ years) – Planned for delivery after the lifetime of this strategy

Costs

- Existing Resources – Already covered within LLFA funding
- Very Low Cost (<£10k) – Minimal cost
- Low Cost (£10k-£75k) – Suits revenue funding and feasibility studies
- Medium Cost (£75k-£200k) – Within small scale scheme limit
- High Cost (£200k-£1m) – Suits medium schemes which exceed small scale funding limit
- Very High Cost (£500k+) – Large scale schemes

All measures and subsequent actions are subject to funding and capacity.

8.2 PREPAREDNESS MEASURES

Measure 1	Maintain an effective incident register
Description	PCC has a flood incident register where incidents reported by the public and council staff are recorded. The current information is variable in quality and consistency. This measure aims to develop (as far as possible) a consistent and comprehensive incident register, including reports from other organisations, such as DCWW and Mid West Wales Fire and Rescue Service which can be used to improve understanding of flood risk across Pembrokeshire and inform investment decisions. This register also needs to have a protocol for updating and ownership within PCC.

Benefits incl. multiple/wider benefits	- Comprehensive, easily accessible list of all flood incidents within the county - Informed decision making for targeted investment
Indicative timescale	Recurring
Indicative cost	Low Cost (<£10k)
Related objectives	1, 2, 3, 5, 6
Funding option(s)	Revenue
Delivery partners	DCWW MWW FRS NRW
Type(s) of flood management	Preparedness

Measure 2	**Investigation of Flood Incidents**
Description	PCC has a duty to investigate all flooding within its area in so far as it is considered necessary or appropriate. These investigations help to identify the cause and mechanisms of flooding and potential preventative actions, and responsible parties (where relevant). Where the consequences of the incident exceed a certain threshold, the council will complete a formal Section 19 flood investigation as required under the FWMA which will be published. The investigation must identify which RMAs have relevant flood risk management functions and whether they have exercised those functions in response to the incident. PCC has defined the following threshold for S19 investigations (in line with WG guidance): - 20 properties flooded internally within the same geographical area; or - Critical infrastructure (such as hospitals, ports, or sections of the A40, A4076, A477 or A478) are shut due to flooding for 1 hour or more; or - Communities are cut off, without vehicular access, for 24 hours; or - Risk to life Incidents that don't meet the threshold for a S19 will still be investigated as to the cause, and the details noted to inform the flood incident register and future investment. S19s contribute as evidence towards applying for small scale scheme grants.
Benefits incl. multiple/wider benefits	- Enabling clear understanding of flood risk hot spots - Enabling targeted investment for flood mitigation
Indicative timescale	Recurring
Indicative cost	Low Cost (£10k-£75k)

Related objectives	1, 2, 3, 5, 6
Funding option(s)	Statutory, Revenue
Delivery partners	
Type(s) of flood management	Preparedness

Measure 3	**Understanding of risk in the future**
Description	Flood risk is a result of a combination of factors. PCC need to understand how risk may change in the future, and subsequently how management of this risk might change. To do this, the council should undertake assessments including climate change, asset condition, development and growth, population change and environmental targets.
Benefits incl. multiple/wider benefits	- Better understanding of risk enabling better response, communication and education - Better targeting of investment
Indicative timescale	Short (1-2 years)
Indicative cost	Low Cost (£10k-£75k)
Related objectives	1, 2, 3, 5, 6
Funding option(s)	Revenue, Capital
Delivery partners	NRW
Type(s) of flood management	Preparedness

Measure 4	**Emergency Response**
Description	Effective flood warning and response to increase resilience to flooding. Incident response is led by emergency planning team but many teams within PCC have responsibility to prepare and respond to incidents.
Benefits incl. multiple/wider benefits	- Effective and coordinated response to flooding - Structured plan to collaborate with Professional Partners - Prepared responders
Indicative timescale	Recurring
Indicative cost	Existing Resources
Related objectives	3
Funding option(s)	Revenue
Delivery partners	LRF

	NRW RMAs WG Resilience Framework
Type(s) of flood management	Preparedness

Measure 5	**LLFA resource and capability**
Description	A resilient and fully resourced council will enable efficient and effective delivery of the strategy, statutory obligations and aspirational activities. It will also provide added resilience to prepare, respond and recover from flood events within the county.
Benefits incl. multiple/wider benefits	- Resilient and knowledgeable teams across the council who work together to reduce flood risk across the County
Indicative timescale	Medium (2-5 years)
Indicative cost	Low Cost (£10k-£75k)
Related objectives	1, 2, 3, 4, 5, 6
Funding option(s)	Revenue
Delivery partners	
Type(s) of flood management	Preparedness

Measure 6	**Communities understand the flood risk to their property and how to reduce the impact physically and psychologically**
Description	RMAs have statutory duties to warn and inform the public regarding flooding. However, residents and property owners also have responsibility to protect themselves. Each flood event highlights that many residents expect the LLFA to go beyond their statutory duty to protect them, rather than residents taking their own measures. There is opportunity to work with other RMAs, Welsh Government and NRW to increase public awareness of steps they can take to reduce the impact of flooding on their property.
Benefits incl. multiple/wider benefits	- Encouragement of proactive flood risk management at a community and individual level - Reduction of physical and psychological impacts to communities.
Indicative timescale	Medium (2-5 years)
Indicative cost	Low Cost (£10k-£75k)
Related objectives	1, 2, 3, 4
Funding option(s)	Revenue
Delivery partners	

Type(s) of flood management	Preparedness

8.3 PREVENTION MEASURES

Measure 7	Development
Description	The county of Pembrokeshire has two Local Planning Authorities, Pembrokeshire County Council and Pembrokeshire Coast National Park Authority. As such there are two Local Development Plans. PCNPA LDP2, end date 2031, was adopted in September 2020. A key outcome from this LDP is (8) No highly vulnerable development in areas at risk of flooding both now and in the long term and with no negative impacts elsewhere. The currently adopted plan for Pembrokeshire County Council (2013) has a general development policy (GN.1) where development will be permitted where it would not cause or result in unacceptable harm to health and safety through flooding. LDP2 is under development. Deposit Plan 1 (2020) for LDP2 is not being taken forward but Deposit Plan 2 is anticipated to be a focus for consultation in autumn 2024. All proposed development should be sustainable as per national and local policy. Proactive consultation by developers with the LLFA should be promoted to consider flood risk at early stages of master planning and ensure adherence to SAB requirements. The LLFA should also consider inputting to potential SPGs to help guide smaller developments toward better allocation of space for flood risk management and biodiversity.
Benefits incl. multiple/wider benefits	- Development directed away from risk areas - Efficiency in planning process through early consultation with developers
Indicative timescale	Short (1-2 years)
Indicative cost	Existing Resources
Related objectives	1, 5
Funding option(s)	Statutory, Revenue
Delivery partners	LPAs
Type(s) of flood management	Prevention

Measure 8	Fulfil SAB function, including enforcement
Description	Pembrokeshire County Council have a duty under Section 3 of the Flood and Water Management Act to act as the SUDS Approval Body, whereby they approve, adopt, and maintain sustainable drainage systems for the local Planning Authorities. The SAB is an influential role in controlling outflows from proposed development sites through the types of SUDS approved for use.

	There is scope for integrated working between the LPAs and the SAB when considering the flood risk to and from a development. This may be captured through the development of Supplementary Planning Guidance and improved sharing of information between the SAB and LPAs at application stage.
Benefits incl. multiple/wider benefits	- Reduced number of people at risk of flooding - Sustainable development and drainage allowing for additional development
Indicative timescale	Medium (2-5 years)
Indicative cost	Existing Resources
Related objectives	1, 5
Funding option(s)	Statutory, Revenue
Delivery partners	LPAs
Type(s) of flood management	Prevention

Measure 9	**Develop asset maintenance / management plans**
Description	Under Section 21 of the Flood and Water Management Act, Lead Local Flood Authorities are required to maintain a register and record of all structures and features that are anticipated to have a significant effect on flood risk in the area. The asset register is for public use and the asset record is for use by RMAs. The Council will use flood history, vulnerability and flood modelling where appropriate to determine these assets. The asset record will continue to be updated and use SAB and Ordinary Watercourse consenting as well as flood investigation to maintain the register. This will enable targeted preparation during a forecast flood event.
Benefits incl. multiple/wider benefits	- Allows for targeted investment - Preparedness for flood events
Indicative timescale	Medium (2-5 years)
Indicative cost	Existing Resources
Related objectives	1, 3, 6
Funding option(s)	Revenue
Delivery partners	
Type(s) of flood management	Prevention

Measure 10	**Promote NBS within any new schemes or upgrades**

Description	Increased use of NFM / NBS is likely to be necessary to manage effects of climate change and support other plans / targets. This approach should be considered as default for all schemes and encourage developers to incorporate wetlands etc
Benefits incl. multiple/wider benefits	- Enhancement in ecology and biodiversity - Reduction in flood risk - Amenity benefit to local communities
Indicative timescale	Recurring
Indicative cost	Low Cost (£10k-£75k)
Related objectives	1, 6
Funding option(s)	Revenue, Capital including small schemes
Delivery partners	
Type(s) of flood management	Prevention

Measure 11	**Work in partnership with RMAs to create a resilient Pembrokeshire**
Description	Risk Management Authorities working together will foster a collaborative and co-operative working environment amongst stakeholders that can support the management of flood risk.
Benefits incl. multiple/wider benefits	- Collaborative working will provide greater efficiency in managing flood risk and avoid duplication of effort -Flood risk across the county and RMA remits will be better understood by all stakeholders - Relationships across RMAs will be strengthened - Stakeholders are likely to benefit from multiple benefits delivered through innovative projects.
Indicative timescale	Medium (2-5 years)
Indicative cost	Low Cost (£10k-£75k)
Related objectives	1, 2, 3, 4, 5, 6
Funding option(s)	Revenue
Delivery partners	All RMAs
Type(s) of flood management	Prevention

Measure 12	**Landowners understand their legal obligations and riparian rights**

Description	Landowners with watercourses or culverts routed through their land have rights and responsibilities to which they must adhere. The LLFA will engage and educate riparian owners to raise awareness, establish relationships and ensure responsibilities are carried out.
Benefits incl. multiple/wider benefits	- Improved awareness of riparian ownership rights and responsibilities - Reduction in flood risk where riparian assets are well maintained - Deterrent through enforcement powers to reduce burden on PCC.
Indicative timescale	Medium (2-5 years)
Indicative cost	Low Cost (£10k-£75k)
Related objectives	1, 3, 4
Funding option(s)	Revenue
Delivery partners	
Type(s) of flood management	Prevention

Measure 13	**Maximise cross discipline opportunities**
Description	Engage with PCC teams and other stakeholders to seek to maximise opportunities to provide betterment and increased resilience where possible e.g. retrofit SuDS, / resilient streetscapes; PFR; less damage to roads
Benefits incl. multiple/wider benefits	- Additional benefits and better management of flood risk through non-direct schemes - Efficiency in scheme administration removing the need for multiple feasibility studies and applications for funding
Indicative timescale	Short (1-2 years)
Indicative cost	Low Cost (£10k-£75k)
Related objectives	1, 2, 3, 4, 5, 6
Funding option(s)	Revenue, Capital including small schemes
Delivery partners	
Type(s) of flood management	Prevention

8.4 PROTECTION MEASURES

Measure 14	**Investment decisions**

Description	Investment decisions should be risk based and consider both revenue and capital investment to include maintenance and new schemes or existing scheme improvements.
Benefits incl. multiple/wider benefits	- Targeted investment to those most at risk - Minimising people at high risk of flooding
Indicative timescale	Medium (2-5 years)
Indicative cost	Medium Cost (£75k-£200k)
Related objectives	1, 5, 6
Funding option(s)	Revenue, Capital including small schemes
Delivery partners	
Type(s) of flood management	Protection
Other(s)	

Measure 15	**Caravans/tourist population**
Description	Tourism is a key part of Pembrokeshire's economy, with an estimated £585 million visitor spend per year. Many homes within the county are holiday lets and there are several holiday parks and camping and caravan sites. Furthermore, some residents of Pembrokeshire permanently reside on caravan sites that are at risk of flooding and this risk will increase in the future. WG funding prioritisation for flood schemes is currently aimed at permanent residence/property, however an investigation into raising capital funding for protection of residential caravan sites that are at risk of flooding could be undertaken.
Benefits incl. multiple/wider benefits	- Raise awareness of flood risk both now and in the future to owners of holiday parks and holiday lets to enable them to be better prepared. - Reduce flood risk and hazard to residential caravan sites
Indicative timescale	Medium (2-5 years)
Indicative cost	Low Cost (£10k-£75k)
Related objectives	1, 3, 6
Funding option(s)	Revenue, Capital including small schemes
Delivery partners	
Type(s) of flood management	Protection

8.5 RECOVERY MEASURES

Measure 16	Incident Recovery
Description	Recovery from flooding can take a long time, and affects people physically, economically and psychologically. Many teams across the Lead Local Flood Authority and in the wider Local Resilience Forum are involved in recovery which takes them away from normal duties. Having up to date tools and information readily available for affected residents could support people to recover more quickly following a flood.
Benefits incl. multiple/wider benefits	- Communities are better prepared for flooding and subsequently can recover more quickly
Indicative timescale	Short (1-2 years)
Indicative cost	Very Low Cost (<£10k)
Related objectives	3
Funding option(s)	Revenue
Delivery partners	LRF RMAs
Type(s) of flood management	Recovery and Review

9 FLOOD ACTIONS

9.1 INTRODUCTION TO FLOOD ACTIONS

Flood actions are specific tasks, activities or initiatives that we plan and track and will enable us to deliver our measures listed in section 8. Action plans were previously required in the Flood Risk Management Plans that were mandated by the now revoked 2009 Flood Risk Regulations. Now that the Local Strategy and Flood Risk Management Plan are merged into this Local Strategy update, any previous action plans are superseded.

The actions are attributed with time-based deadlines and are reviewed an updated regularly.

9.2 OUR FLOOD ACTION PLAN

PCC's Flood Action Plan has been organised based on the measures and flood management themes. Some LLFAs choose to organise theirs by catchment or flood risk area, but at this stage the majority of our actions are applicable across the entire county, so the flood management theme grouping is preferred. We have attributed each action with time periods and approximate cost as per the bandings we used for the measures in section 8.

The action plan will be tracked and updated using the 'status column'. The action plan will be updated every two years which is a shorter cycle than the update of the local strategy, so it has been provided as a separate appendix to this strategy document. The flood action plan can be found in Appendix C.

10 ENVIRONMENTAL ASSESSMENTS

Assessments have been undertaken alongside the development of this Local Strategy to ensure the Objectives, Measures and Actions presented take into account the environment within the local authority area, including important designations.

10.1 STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

A Strategic Environmental Assessment (SEA) is a way of assessing and monitoring the likely effects (positive and negative) of plans, programmes and strategies on the environment. It applies at the level of the plan or strategy (i.e. Local Strategy) which sets the direction for future development projects.

An SEA is a legal requirement to accompany a Local Strategy. Such assessments help to enable informed and transparent decision-making for the benefit of plan makers and the wider community in Wales.

The SEA was developed alongside this Local Strategy and is contained within a separate report.

Brief summary of outcomes

11 MONITORING PROGRESS

11.1 HOW WE MEASURE PROGRESS

The progress of our delivery the Local Strategy will be measured against the flood actions which have been developed to achieve the measures and objectives listed within the strategy. Progress on the actions will be measured by the delivery of the action and the success of delivery. Estimated actual costs and timeframes will be recorded to inform future strategies.

11.2 HOW REGULARLY WE MONITOR PROGRESS

The Local Strategy will be updated every six years, in line with the National Strategy which is due to be updated in 2030 bar any major policy changes in the interim.

The action plan will be reviewed on an annual basis, with a brief report published to confirm progress. The action plan will be updated on a two-yearly basis, to reflect completed actions and identify any new actions required to achieve the objectives and measures set out within the Local Strategy.

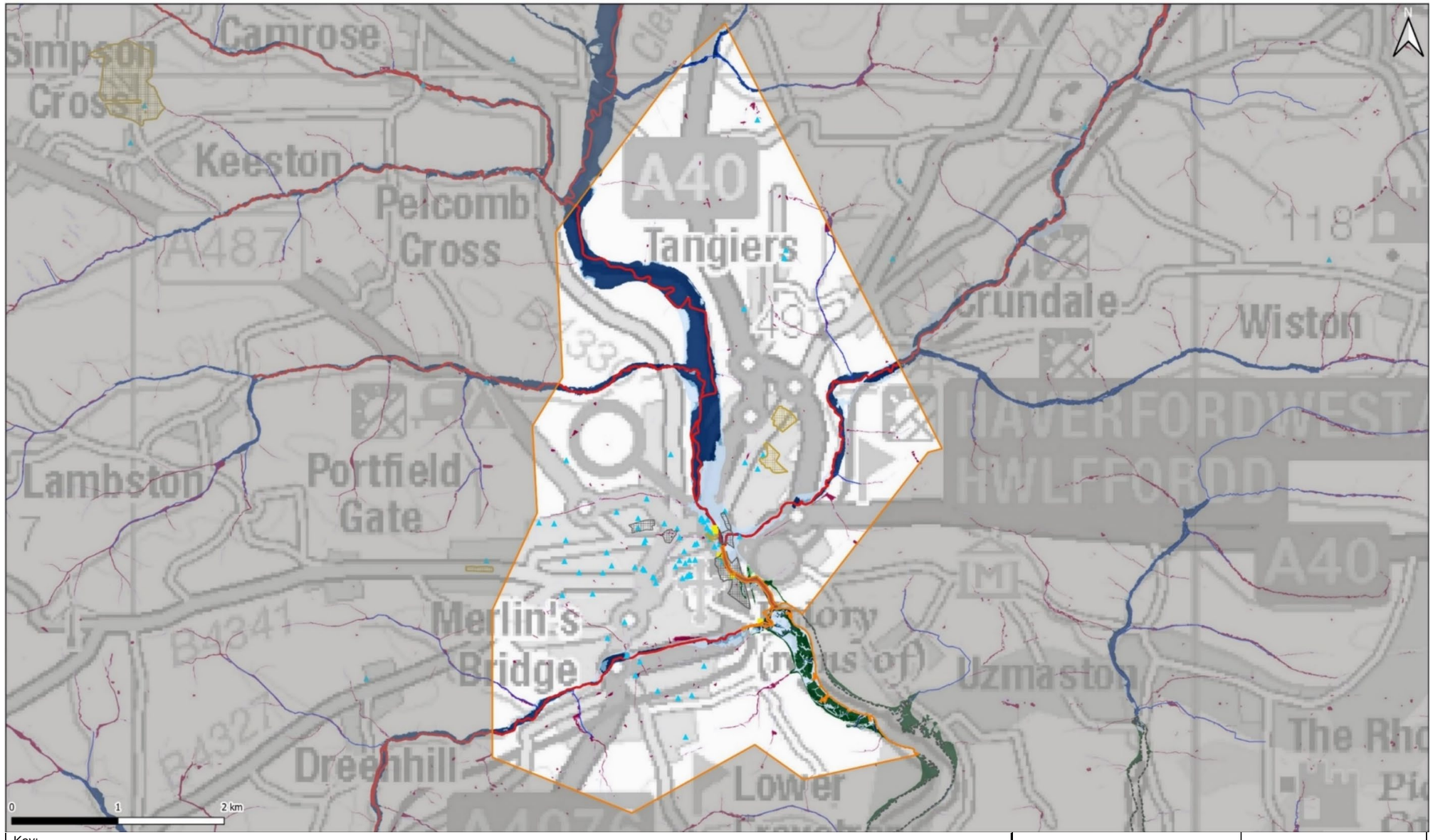
Appendix A

LOCAL FLOOD RISK

#

1 HAVERFORDWEST

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	19	33	90	12	29	159	1	5	7
Essential Services (n)	6	7	10	1	2	7	0	3	4
Non-Residential Properties (n)	90	118	155	21	45	74	8	37	48
Primary/Trunk Roads (km)	4.1	5.4	9.3	0.9	1.8	6.2	0.6	2.2	2.8
Main Line Railways (km)	0.1	0.1	1.3	0.0	0.0	0.2	0.1	0.1	0.1
Agricultural Land - Grades 1, 2 and 3 (ha)	65.2	78.2	114.5	9.4	12.6	22.1	37.5	41.8	44.8
Special Areas of Conservation (SAC) (ha)	24.6	25.8	32.6	1.5	1.9	2.7	26.6	27.3	27.8
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	24.6	25.9	33.1	1.5	1.9	2.7	26.6	27.3	27.8
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ancient Woodland (ha)	2.4	2.7	3.8	0.8	0.9	1.3	0.5	0.6	0.7
Registered Parks and Gardens (ha)	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	0.0	0.0	0.2	0.1	0.1	0.2	0.4	0.5	0.5
Listed Buildings (n)	4	4	40	2	3	6	6	7	18
National Park (ha)	0.1	0.1	0.2	0.0	0.0	0.0	0.2	0.3	0.3
Conservation Areas (ha)	1.6	1.8	8.2	0.4	1.0	2.7	2.3	2.7	5.5
Caravans (n)	0	3	13	0	0	0	0	0	0



Key:

- PCC Boundary
- Community Area
- *Watercourses*
- NRW Main River
- Ordinary Watercourse

SMP Policies

	2020	2050	2100
	HTL	HTL	HTL
	MR	MR	MR
	NAI	NAI	NAI

Recorded Property Flooding

- Non Tidal
- Tidal

Recorded Property Flooding from Sewers (by postcode)

- Active
- Resolved

Flood Risk Sources

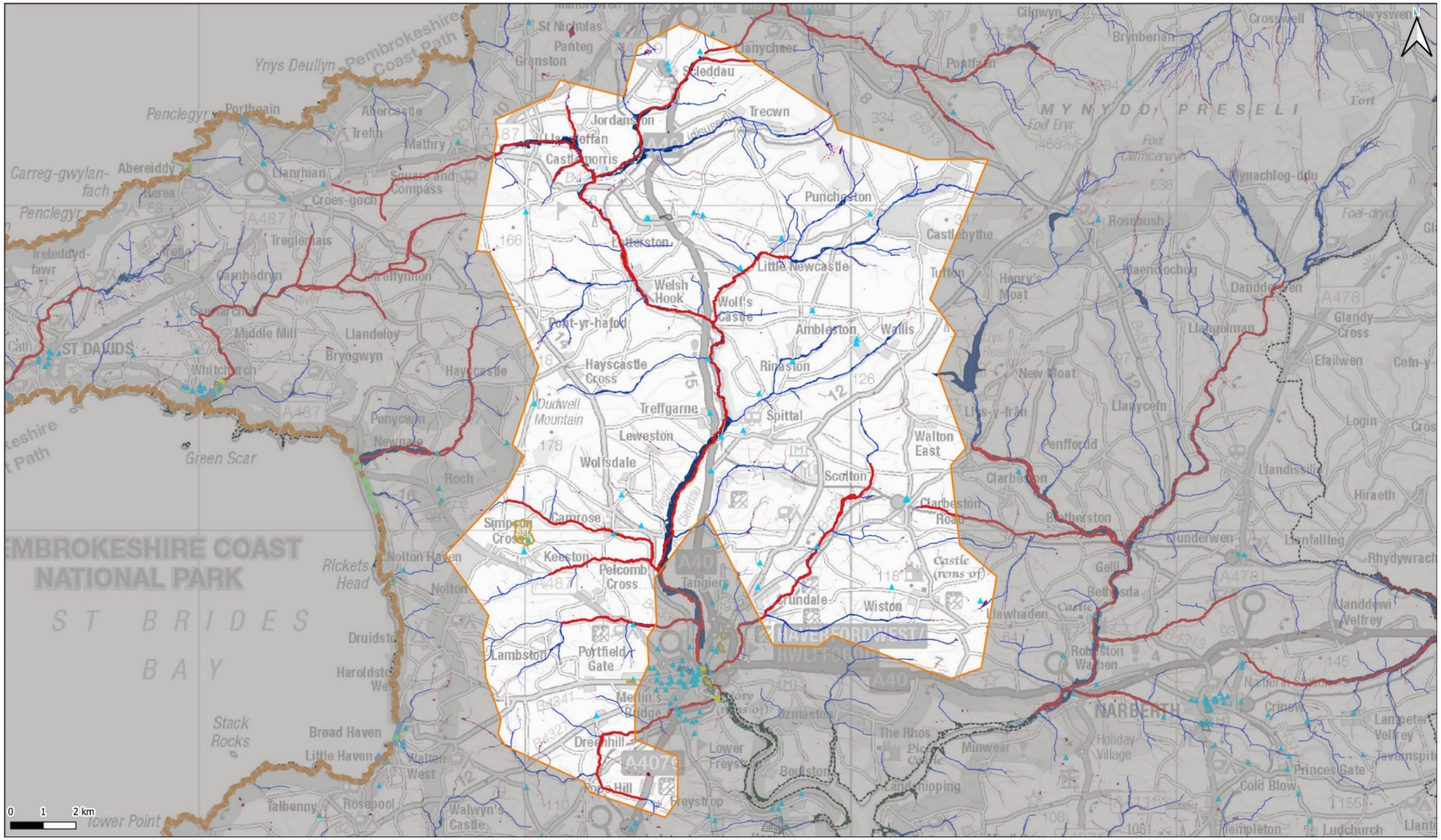
Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

Drawing Details	
Date	Mar 2024
Revisions	001
Status	Draft
Location	HFW
Drawn BS	Checked CS / Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

2 WESTERN CLEDDAU

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	3	3	8	16	20	48	-	-	-
Essential Services (n)	1	1	1	1	2	3	-	-	-
Non-Residential Properties (n)	1	1	3	6	9	11	-	-	-
Primary/Trunk Roads (km)	3.8	5.1	8.8	5.0	7.4	18.1	-	-	-
Main Line Railways (km)	0.1	0.1	2.6	2.0	2.8	4.2	-	-	-
Agricultural Land - Grades 1, 2 and 3 (ha)	380.0	427.7	529.5	144.1	188.1	323.0	-	-	-
Special Areas of Conservation (SAC) (ha)	204.5	224.3	255.5	8.6	11.2	17.3	-	-	-
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Sites of Special Scientific Interest (SSSI) (ha)	208.0	228.6	260.9	9.9	13.2	20.6	-	-	-
National Nature Reserves (NNR) (ha)	14.9	18.7	24.4	0.6	1.0	2.1	-	-	-
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Ancient Woodland (ha)	28.6	32.6	39.6	10.5	13.0	17.6	-	-	-
Registered Parks and Gardens (ha)	0.0	0.0	0.0	0.2	0.3	0.4	-	-	-
Country Parks (ha)	1.1	1.1	1.1	1.1	1.1	1.1	-	-	-
Scheduled Ancient Monuments (SAM) (ha)	0.0	0.0	0.0	0.0	0.1	0.1	-	-	-
Listed Buildings (n)	10	10	12	0	1	1	-	-	-
National Park (ha)	11.7	14.2	18.3	2.6	3.7	7.6	-	-	-
Conservation Areas (ha)	0.0	0.0	0.0	0.0	0.0	0.1	-	-	-
Caravans (n)	1	1	1	0	0	0	-	-	-



Key:

PCC Boundary

Community Area

Watercourses

NRW Main River

Ordinary Watercourse

SMP Policies

2020		*2050*		*2100*	
dotted blue	HTL	dashed blue	HTL	solid blue	HTL
dotted green	MR	dashed green	MR	solid green	MR
dotted brown	NAI	dashed brown	NAI	solid brown	NAI

Recorded Property Flooding

Non Tidal

Tidal

Recorded Property Flooding from Sewers (by postcode)

Active

Resolved

Flood Risk Sources

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

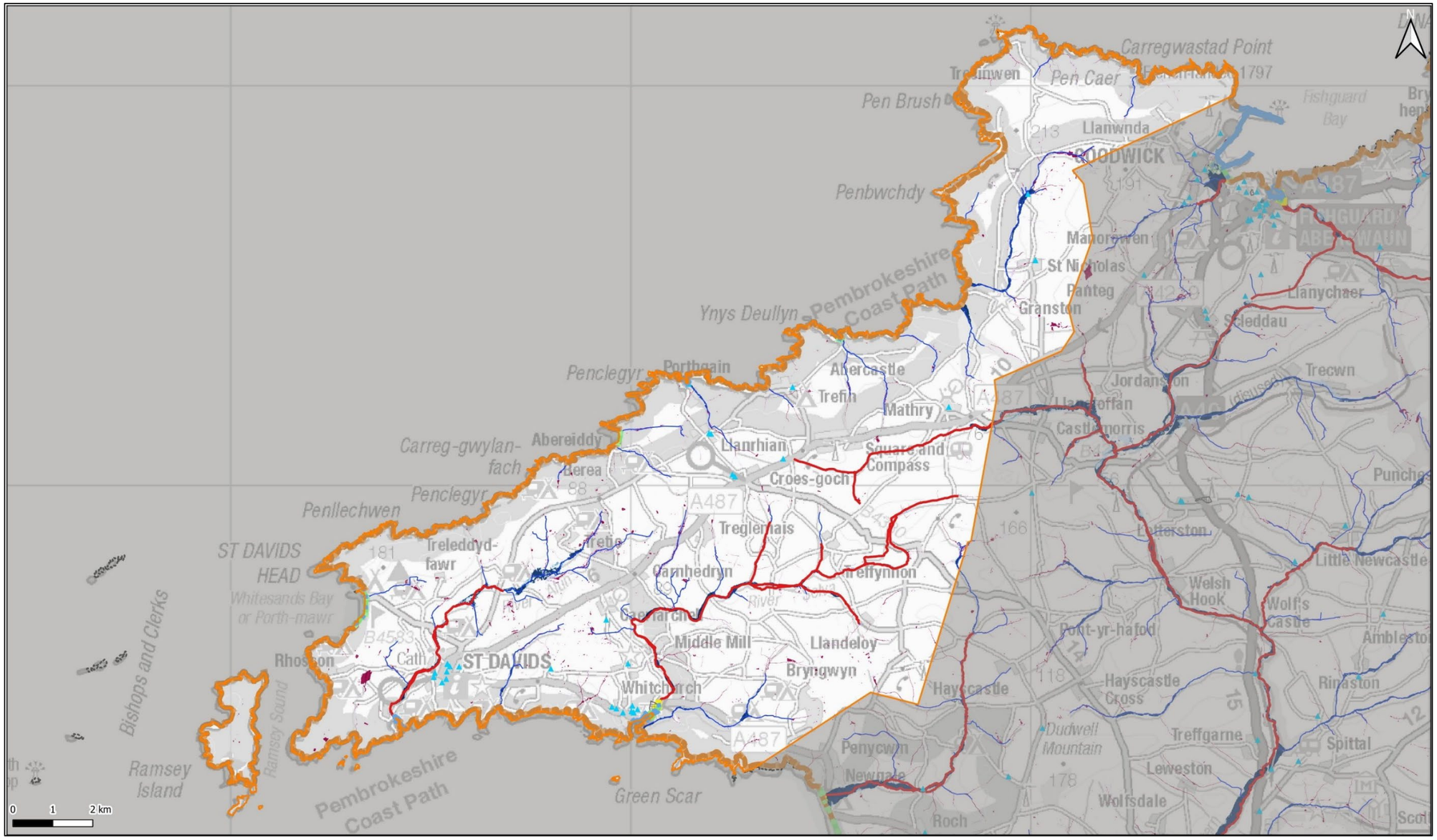
Drawing Details

Date	Mar 2024
Revisions	001
Status	Draft
Location	WCL

Drawn BS | Checked CS | Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	19	24	30	20	25	66	0	0	0
Essential Services (n)	7	10	11	5	5	10	0	0	1
Non-Residential Properties (n)	17	21	23	18	25	34	0	1	2
Primary/Trunk Roads (km)	2.4	3.0	4.2	3.1	5.1	11.3	0.1	0.1	0.1
Main Line Railways (km)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agricultural Land - Grades 1, 2 and 3 (ha)	144.0	170.0	212.5	100.5	134.8	241.0	96.8	98.7	99.9
Special Areas of Conservation (SAC) (ha)	14.0	16.9	21.4	17.7	21.5	30.7	39.8	41.1	41.8
Special Protection Areas (SPA) (ha)	0.2	0.3	0.3	1.3	1.6	2.4	21.8	22.7	23.2
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	20.6	24.3	29.6	20.3	24.9	35.2	42.0	43.5	44.4
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	0.3	0.4	0.5	3.3	3.5	3.6
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ancient Woodland (ha)	0.5	0.6	0.6	0.4	0.6	1.0	0.0	0.0	0.0
Registered Parks and Gardens (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	1.0	1.1	1.4	0.1	0.2	0.4	2.0	2.1	2.1
Listed Buildings (n)	24	25	30	0	0	1	1	2	2
National Park (ha)	102.6	115.5	135.7	67.8	86.5	130.3	0.0	2.2	3.6
Conservation Areas (ha)	8.8	9.6	10.9	0.7	1.0	1.8	2.1	2.5	2.7
Caravans (n)	6	6	7	0	0	0	0	0	0



Key:

PCC Boundary

Community Area

Watercourses

NRW Main River

Ordinary Watercourse

SMP Policies

	2020	2050	2100
	HTL	HTL	HTL
	MR	MR	MR
	NAI	NAI	NAI

Recorded Property Flooding

Non Tidal

Tidal

Recorded Property Flooding from Sewers (by postcode)

Active

Resolved

Flood Risk Sources

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

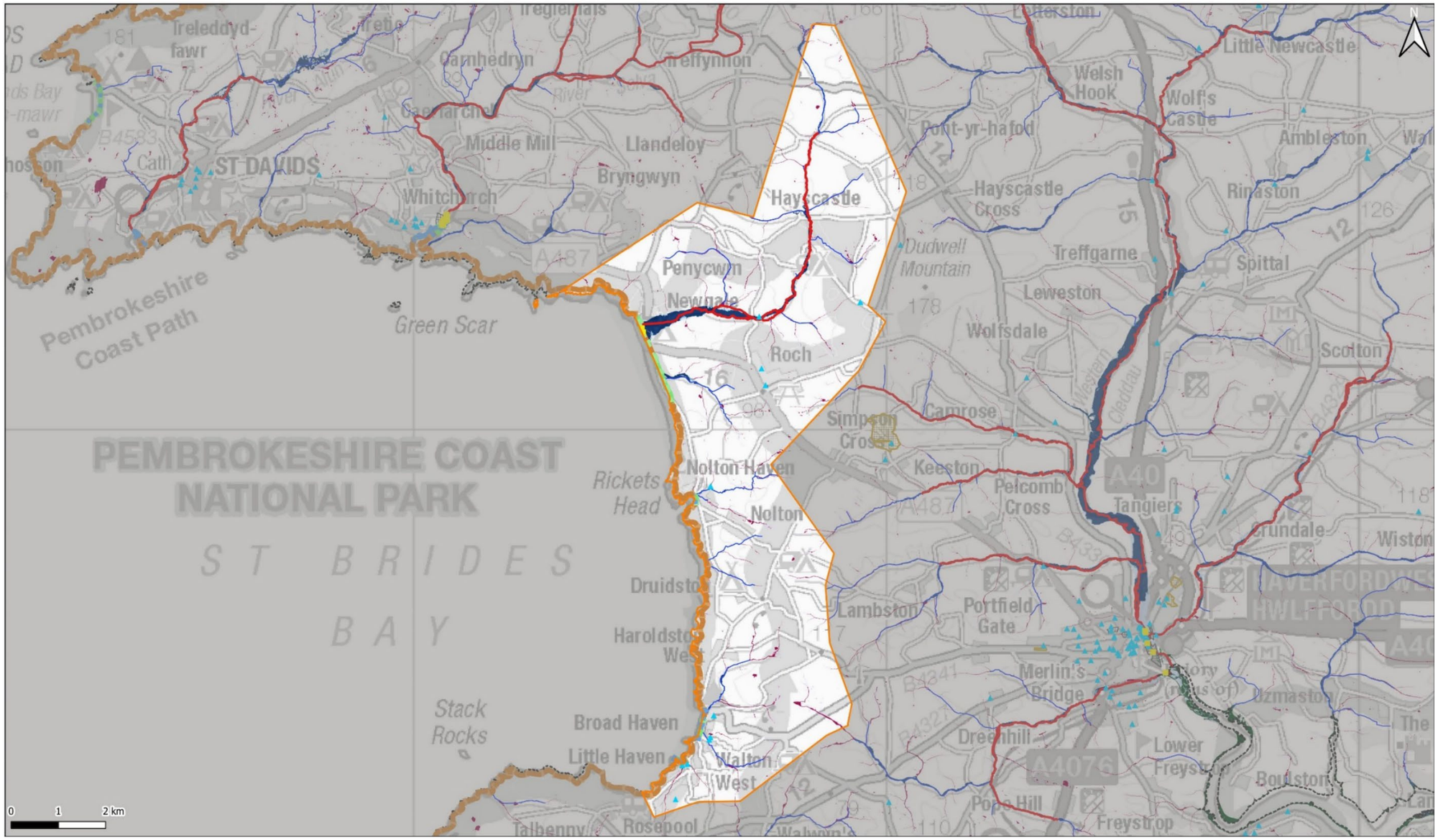
Drawing Details

Date	Mar 2024
Revisions	001
Status	Draft
Location	STD

Drawn BS | Checked CS | Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	1	1	1	32	35	45	0	0	0
Essential Services (n)	0	1	1	19	25	29	0	0	0
Non-Residential Properties (n)	2	3	3	19	25	29	0	0	0
Primary/Trunk Roads (km)	1.3	1.5	1.8	1.9	2.7	6.2	0.0	0.1	0.2
Main Line Railways (km)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agricultural Land - Grades 1, 2 and 3 (ha)	67.0	72.9	80.3	49.9	53.1	54.9	41.2	54.2	94.2
Special Areas of Conservation (SAC) (ha)	0.1	0.1	0.2	1.4	1.6	2.1	10.5	10.9	11.2
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.1	0.2	0.4	1.2	1.2	1.2
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	0.1	0.1	0.2	1.4	1.7	2.2	11.3	11.8	12.1
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ancient Woodland (ha)	0.8	0.9	1.1	2.0	2.2	2.9	0.2	0.2	0.2
Registered Parks and Gardens (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Listed Buildings (n)	0	0	0	1	1	1	0	0	0
National Park (ha)	76.3	82.2	89.6	38.7	48.6	67.6	21.2	24.4	26.3
Conservation Areas (ha)	0.0	0.0	0.0	0.6	0.8	0.8	0.2	0.2	0.3
Caravans (n)	17	18	19	13	18	27	0	0	0



Key:

PCC Boundary

Community Area

Watercourses

NRW Main River

Ordinary Watercourse

SMP Policies

	2020	2050	2100
	HTL	HTL	HTL
	MR	MR	MR
	NAI	NAI	NAI

Recorded Property Flooding

Non Tidal

Tidal

Recorded Property Flooding from Sewers (by postcode)

Active

Resolved

Flood Risk Sources

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

Drawing Details

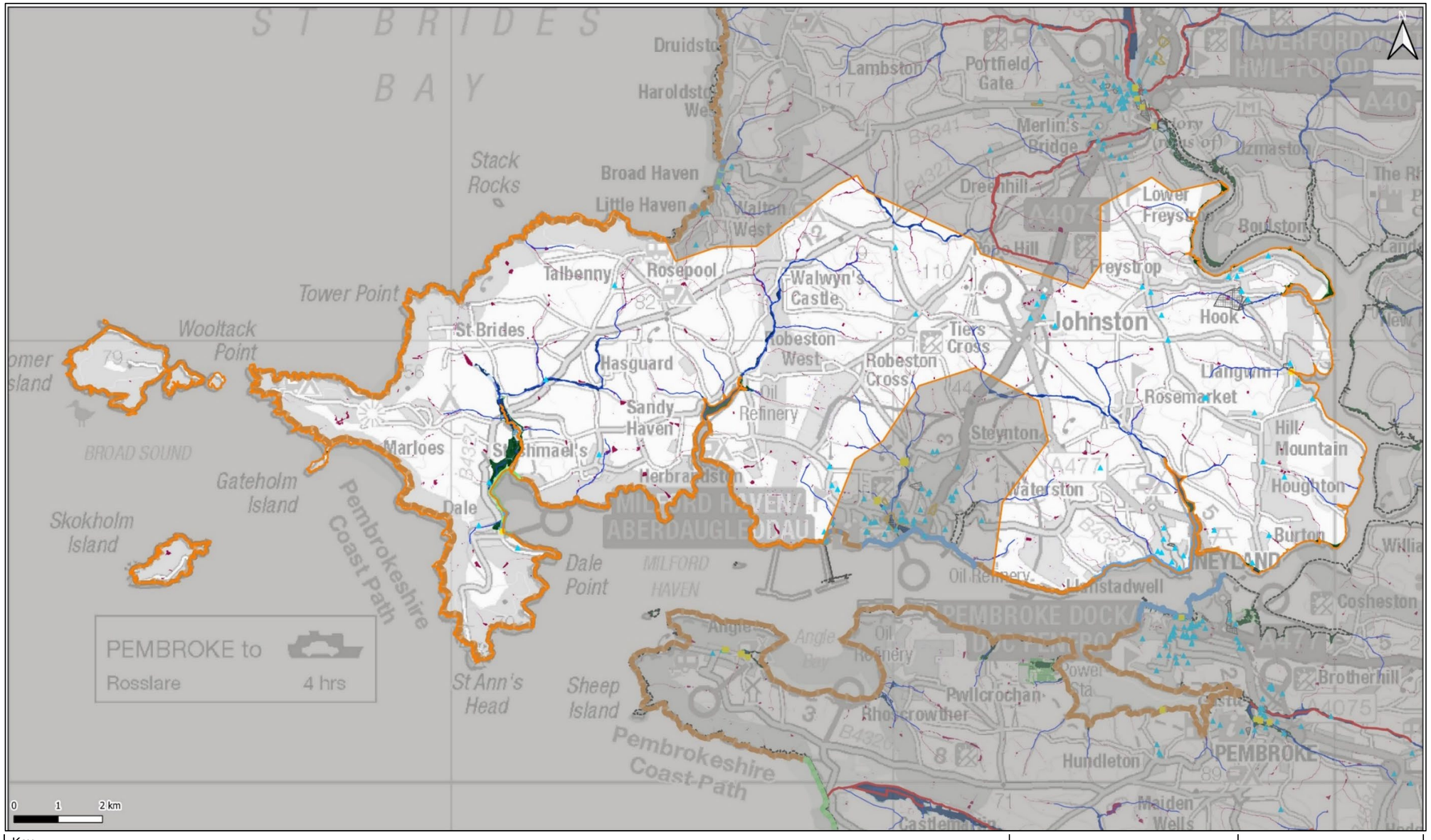
Date	Mar 2024
Revisions	001
Status	Draft
Location	NHL

Drawn BS | Checked CS | Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

5 ST ISHMAELS

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	0	0	2	22	28	91	2	8	12
Essential Services (n)	1	1	2	3	3	8	1	1	2
Non-Residential Properties (n)	1	1	2	6	6	18	2	3	4
Primary/Trunk Roads (km)	0.9	1.1	1.6	2.5	3.7	8.7	1.5	2.1	2.6
Main Line Railways (km)	0.0	0.0	0.0	0.4	0.5	1.3	0.0	0.0	0.0
Agricultural Land - Grades 1, 2 and 3 (ha)	51.4	61.0	78.7	79.5	100.9	166.9	195.9	204.8	212.6
Special Areas of Conservation (SAC) (ha)	6.5	10.6	18.2	8.1	8.4	9.8	114.3	117.4	119.9
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	1.2	1.3	1.8	6.2	6.5	6.7
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	6.5	10.7	18.7	11.8	12.4	14.7	116.5	119.7	122.2
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	1.2	1.3	1.8	5.7	5.9	6.1
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ancient Woodland (ha)	3.0	3.2	4.4	5.5	7.2	10.4	3.9	4.3	4.6
Registered Parks and Gardens (ha)	0.0	0.0	0.0	0.7	0.9	1.4	0.0	0.0	0.1
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	0.0	0.0	0.0	1.1	1.6	2.2	0.4	0.4	0.5
Listed Buildings (n)	2	2	2	0	0	0	1	2	5
National Park (ha)	42.3	50.5	64.8	81.7	93.5	122.5	134.0	142.1	149.6
Conservation Areas (ha)	0.2	0.2	0.3	0.0	0.1	0.2	1.6	1.8	2.0
Caravans (n)	0	0	0	0	0	0	0	0	0



Key:

- PCC Boundary
- Community Area
- *Watercourses*
- NRW Main River
- Ordinary Watercourse

SMP Policies

	2020	2050	2100
HTL	▪▪▪▪	▪ ▪	———
MR	▪▪▪▪	▪ ▪	———
NAI	▪▪▪▪	▪ ▪	———

Recorded Property Flooding

- Non Tidal
- Tidal

Recorded Property Flooding from Sewers (by postcode)

- Active
- Resolved

Flood Risk Sources

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

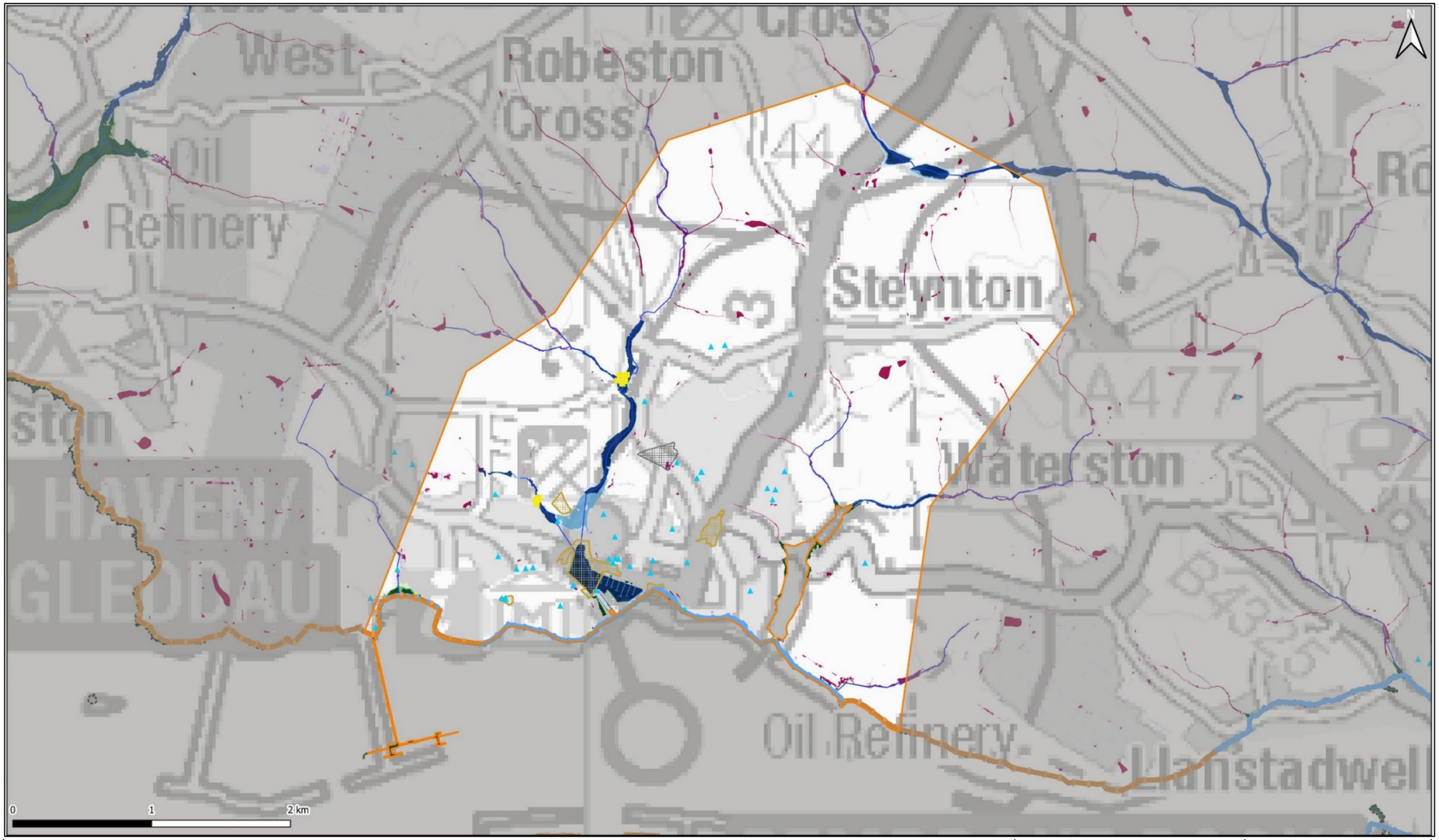
Drawing Details

Date	Mar 2024
Revisions	001
Status	Draft
Location	ISL
Drawn BS	Checked CS / Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

6 MILFORD HAVEN

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	3	4	4	8	14	55	1	3	5
Essential Services (n)	0	2	3	1	1	2	0	0	1
Non-Residential Properties (n)	1	14	28	7	8	35	0	1	2
Primary/Trunk Roads (km)	0.2	0.8	1.0	0.6	1.0	2.5	0.5	0.7	0.9
Main Line Railways (km)	0.0	0.4	0.4	0.3	0.3	0.9	0.0	0.0	0.0
Agricultural Land - Grades 1, 2 and 3 (ha)	4.6	5.7	7.6	7.1	9.1	15.0	13.2	13.9	14.6
Special Areas of Conservation (SAC) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	3.5	3.6	3.6
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.8
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ancient Woodland (ha)	0.0	0.1	0.1	0.3	0.4	0.7	0.3	0.3	0.4
Registered Parks and Gardens (ha)	0.0	0.0	0.0	0.1	0.2	0.2	0.0	0.0	0.0
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Listed Buildings (n)	2	2	5	0	0	0	5	7	11
National Park (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Conservation Areas (ha)	7.2	7.3	8.2	0.1	0.2	0.6	9.3	9.5	9.8
Caravans (n)	0	0	0	0	0	0	0	0	0



Key:

- PCC Boundary
- Community Area
- *Watercourses*
  - NRW Main River
  - Ordinary Watercourse

SMP Policies

	2020	*2050*	*2100*
HTL	HTL	HTL	HTL
MR	MR	MR	MR
NAI	NAI	NAI	NAI

Recorded Property Flooding

- Non Tidal
- Tidal

Recorded Property Flooding from Sewers (by postcode)

- Active
- Resolved

Flood Risk Sources

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

Drawing Details

Date	Mar 2024
Revisions	001
Status	Draft
Location	MFH

Drawn BS | Checked CS | Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

7 EASTERN CLEDDAU

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	3	7	19	24	39	87	1	2	2
Essential Services (n)	0	1	3	1	1	5	1	1	3
Non-Residential Properties (n)	0	1	3	2	2	8	1	1	3
Primary/Trunk Roads (km)	5.8	7.3	10.4	8.0	11.6	27.1	2.4	2.7	3.0
Main Line Railways (km)	0.0	0.0	0.0	0.3	0.5	1.4	0.0	0.0	0.0
Agricultural Land - Grades 1, 2 and 3 (ha)	512.3	581.0	708.9	184.4	241.3	437.9	171.1	179.3	187.1
Special Areas of Conservation (SAC) (ha)	252.9	273.8	311.6	95.7	101.7	119.0	142.0	144.2	146.0
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	256.1	277.4	316.1	100.3	107.3	126.9	152.8	156.3	159.0
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ancient Woodland (ha)	44.0	50.5	61.0	37.3	45.2	60.3	21.7	24.7	27.2
Registered Parks and Gardens (ha)	6.0	11.2	20.9	7.5	9.0	12.6	25.3	27.2	28.7
Country Parks (ha)	81.4	81.9	82.9	79.0	79.0	79.1	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	1.4	1.5	1.6	0.2	0.2	0.4	2.0	2.2	2.4
Listed Buildings (n)	22	22	27	2	2	4	11	14	16
National Park (ha)	156.4	182.8	228.4	0.0	24.6	90.6	196.7	211.2	223.6
Conservation Areas (ha)	1.8	2.2	2.5	0.1	0.1	0.3	0.7	0.7	0.8
Caravans (n)	7	13	20	4	5	8	0	0	1

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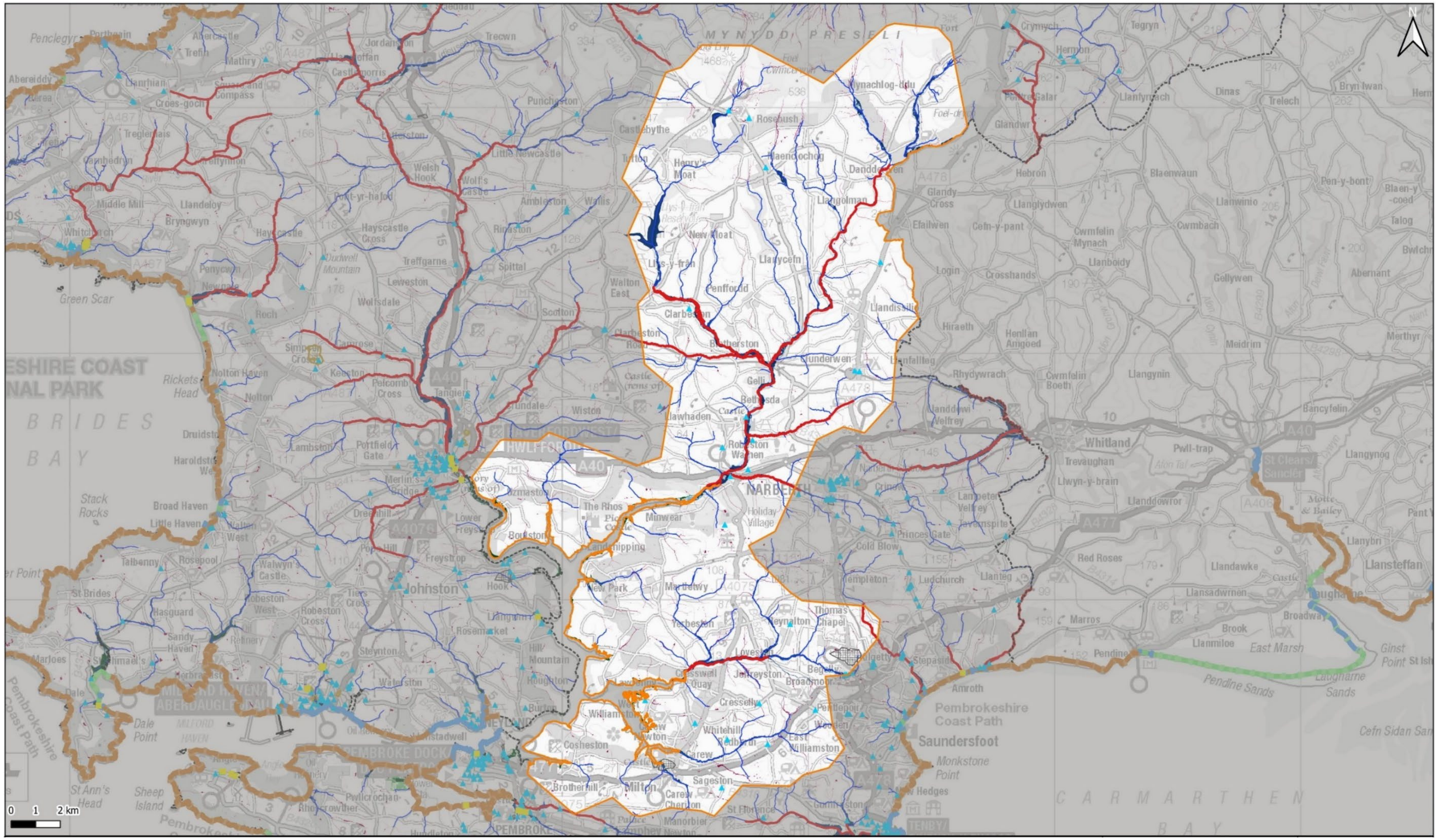


Key:

PCC Boundary	*SMP Policies*							*Flood Risk Sources*				
Community Area	2020		*2050*		*2100*		*Recorded Property Flooding*	*Recorded Property Flooding from Sewers (by postcode)*	Sea	Main River	Surface Water and Small Watercourses
Watercourses		HTL		HTL		HTL	Non Tidal	Active			
NRW Main River		MR		MR		MR	Tidal	Resolved	High	High	High
Ordinary Watercourse		NAI		NAI		NAI			Medium	Medium	Medium
									Low	Low	Low

Drawing Details

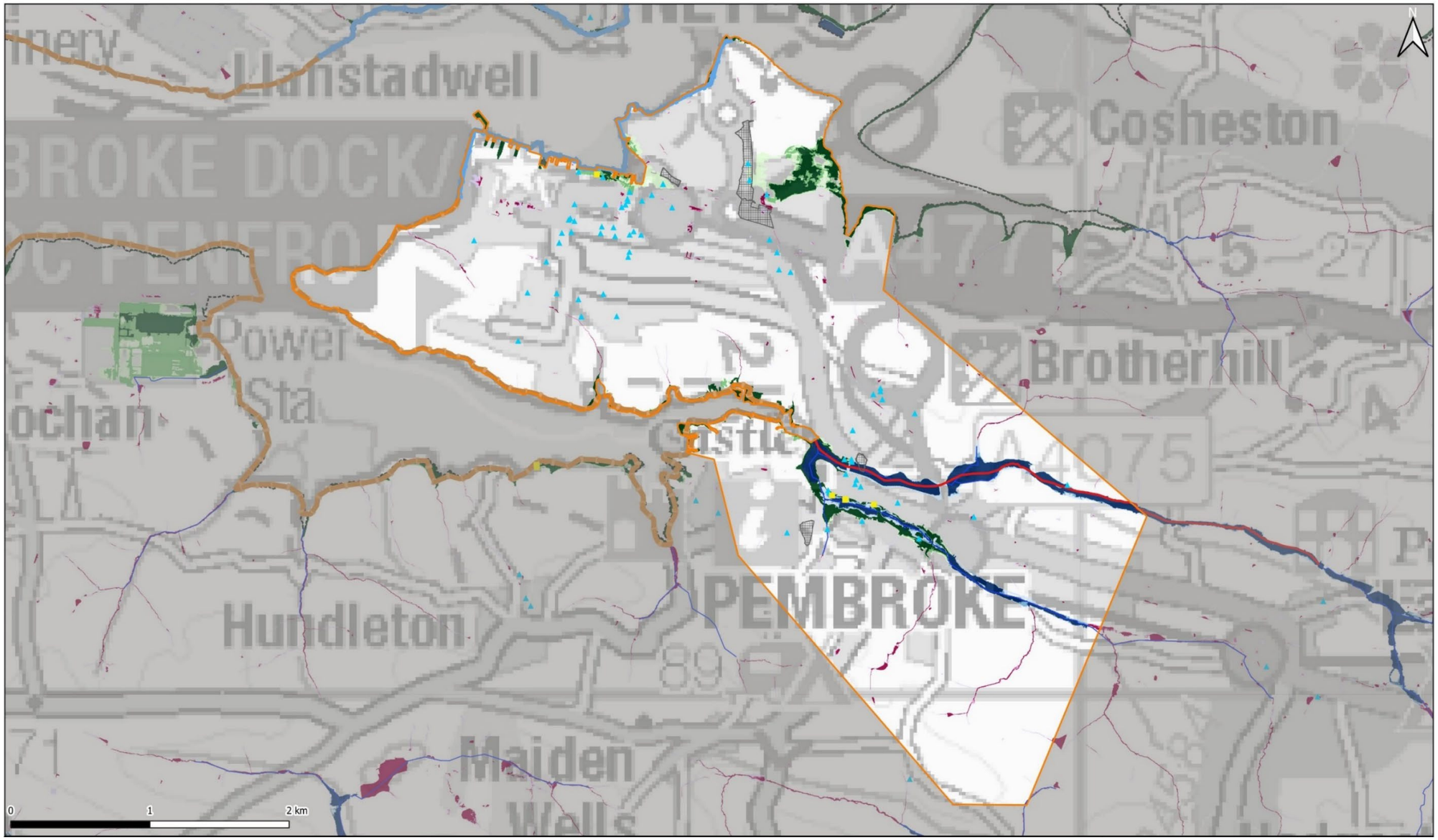
Date	Mar 2024
Revisions	001
Status	Draft
Location	ECL

Drawn BS | Checked CS | Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

8 PEMBROKE AND PEMBROKE DOCK

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	0	0	5	16	37	141	22	43	88
Essential Services (n)	0	0	0	3	5	7	0	0	4
Non-Residential Properties (n)	0	0	1	6	9	31	8	14	31
Primary/Trunk Roads (km)	0.4	0.8	1.8	0.9	1.4	3.7	4.4	5.6	7.6
Main Line Railways (km)	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0
Agricultural Land - Grades 1, 2 and 3 (ha)	9.1	10.3	12.4	2.2	3.0	5.7	19.4	21.3	23.2
Special Areas of Conservation (SAC) (ha)	0.0	0.0	0.0	0.1	0.2	0.2	11.8	12.2	12.5
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	0.1	0.1	0.1	0.1	0.2	0.2	11.8	12.2	12.5
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Local Nature Reserves (LNR) (ha)	9.0	9.0	9.3	0.0	0.0	0.0	9.2	9.2	9.3
Ancient Woodland (ha)	0.0	0.0	0.1	0.2	0.3	0.6	1.2	1.5	1.7
Registered Parks and Gardens (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Listed Buildings (n)	0	1	5	1	2	3	15	19	20
National Park (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Conservation Areas (ha)	11.2	12.1	15.3	4.4	5.0	6.8	23.2	25.6	29.5
Caravans (n)	0	0	1	0	0	0	4	4	4



Key:

- PCC Boundary
- Community Area
- *Watercourses*
- NRW Main River
- Ordinary Watercourse

SMP Policies

	2020	2050	2100
Watercourses	HTL	HTL	HTL
NRW Main River	MR	MR	MR
Ordinary Watercourse	NAI	NAI	NAI

Recorded Property Flooding

- Non Tidal
- Tidal

Recorded Property Flooding from Sewers (by postcode)

- Active
- Resolved

Flood Risk Sources

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

Drawing Details

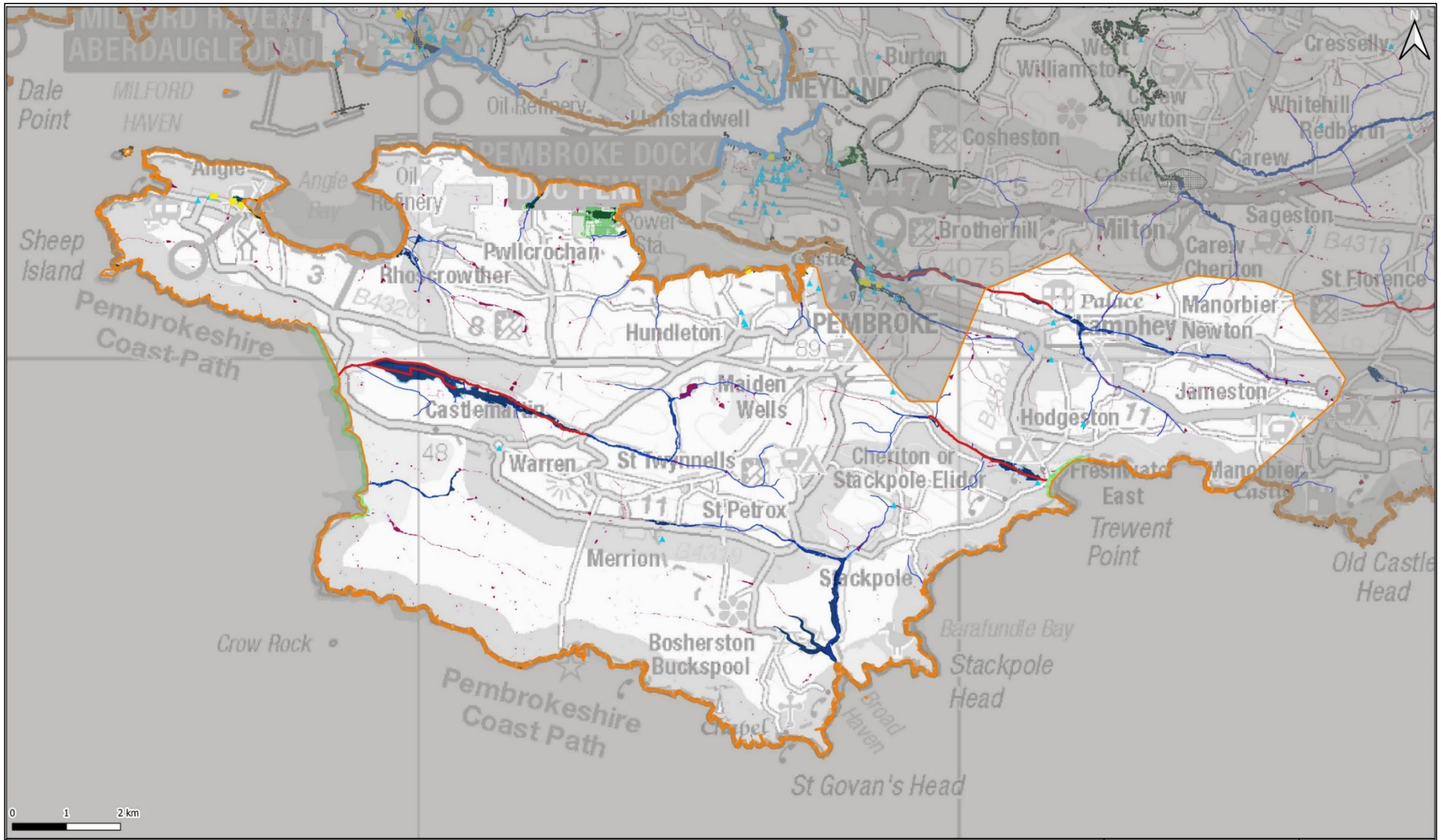
Date	Mar 2024
Revisions	001
Status	Draft
Location	PEM

Drawn BS | Checked CS | Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

9 ANGLE AND CASTLEMARTIN

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	1	2	3	6	10	56	2	6	13
Essential Services (n)	1	1	1	3	3	7	2	2	2
Non-Residential Properties (n)	1	1	1	4	4	8	2	3	3
Primary/Trunk Roads (km)	1.8	2.1	2.8	3.8	5.9	11.3	2.5	6.0	6.5
Main Line Railways (km)	0.4	0.5	0.6	0.1	0.2	0.5	0.0	0.0	0.0
Agricultural Land - Grades 1, 2 and 3 (ha)	127.1	140.5	163.7	67.9	90.9	166.6	154.6	166.6	178.7
Special Areas of Conservation (SAC) (ha)	41.4	42.4	44.6	19.0	20.8	26.2	56.6	59.5	62.2
Special Protection Areas (SPA) (ha)	5.5	6.0	7.1	1.8	2.8	7.1	14.7	15.7	16.7
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	68.6	70.9	74.9	25.6	30.4	46.0	80.5	84.2	87.6
National Nature Reserves (NNR) (ha)	37.8	38.0	38.3	15.8	15.9	16.7	2.5	2.8	3.1
Local Nature Reserves (LNR) (ha)	6.7	8.0	9.4	0.5	0.7	1.5	1.7	2.2	3.0
Ancient Woodland (ha)	3.3	4.4	6.5	7.0	8.7	11.9	1.1	1.3	1.4
Registered Parks and Gardens (ha)	41.4	42.4	44.6	26.4	27.6	30.4	0.0	0.0	0.0
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	0.9	0.9	1.0	0.4	0.5	0.8	0.4	0.4	0.5
Listed Buildings (n)	1	2	3	0	0	0	5	7	10
National Park (ha)	139.1	150.4	171.2	57.0	70.0	103.5	86.7	96.5	105.9
Conservation Areas (ha)	2.6	2.9	3.4	1.9	2.2	2.8	6.9	7.6	8.1
Caravans (n)	0	0	0	8	8	12	0	0	0



Key:

PCC Boundary

Community Area

Watercourses

NRW Main River

Ordinary Watercourse

SMP Policies

	2020	2050	2100
	HTL	HTL	HTL
	MR	MR	MR
	NAI	NAI	NAI

Recorded Property Flooding

Non Tidal

Tidal

Recorded Property Flooding from Sewers (by postcode)

Active

Resolved

Flood Risk Sources

	Sea	Main River	Surface Water and Small Watercourses
High			
Medium			
Low			

Drawing Details

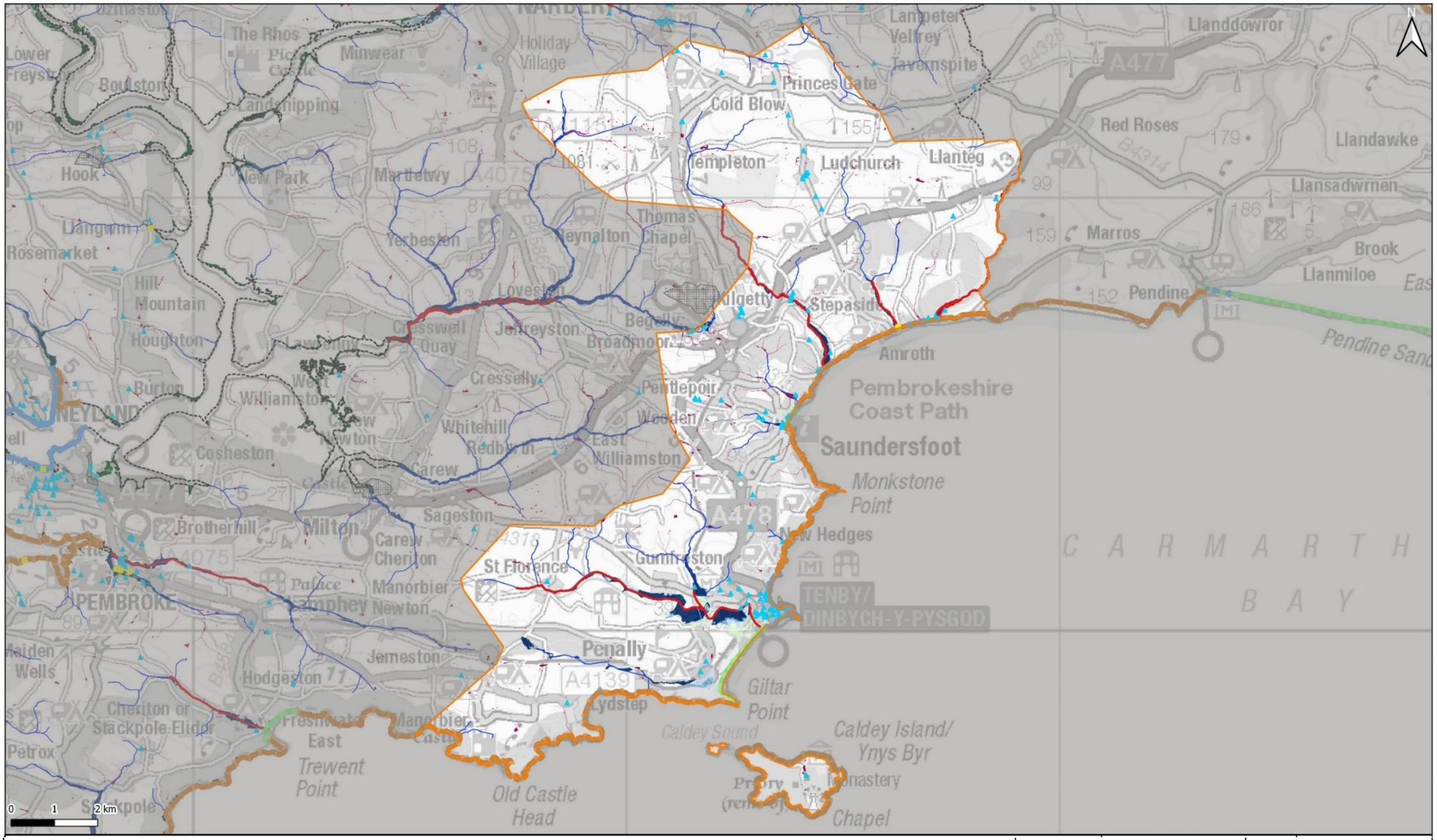
Date	Mar 2024
Revisions	001
Status	Draft
Location	ANG

Drawn BS | Checked CS | Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

10 TENBY AND SAUNDERSFOOT

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	5	16	65	53	83	175	6	11	21
Essential Services (n)	1	1	7	7	10	17	2	3	3
Non-Residential Properties (n)	3	4	31	17	30	48	23	25	25
Primary/Trunk Roads (km)	3.9	5.9	10.7	4.9	7.3	16.7	8.8	9.3	9.9
Main Line Railways (km)	0.0	0.0	0.1	0.5	0.8	2.0	0.0	0.0	0.0
Agricultural Land - Grades 1, 2 and 3 (ha)	100.6	122.2	153.4	55.5	72.9	131.8	155.7	163.5	175.0
Special Areas of Conservation (SAC) (ha)	2.3	2.4	2.7	0.3	0.4	0.8	17.7	18.6	19.5
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	15.9	22.0	31.5	1.6	2.3	4.6	25.7	26.8	60.1
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ancient Woodland (ha)	6.5	7.2	8.5	10.1	11.9	15.1	0.2	0.2	1.0
Registered Parks and Gardens (ha)	2.3	2.4	2.7	0.3	0.4	0.8	0.0	0.0	0.0
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	0.2	0.2	0.4	0.0	0.1	0.2	0.0	0.0	0.1
Listed Buildings (n)	6	6	7	2	2	5	8	9	10
National Park (ha)	54.4	68.6	93.2	27.9	34.5	51.5	34.0	36.2	98.3
Conservation Areas (ha)	0.7	0.8	1.1	1.6	2.3	3.7	4.8	5.3	6.0
Caravans (n)	85	248	448	49	54	77	0	0	505



Key:

PCC Boundary

Community Area

Watercourses

NRW Main River

Ordinary Watercourse

SMP Policies

	2020	2050	2100
	HTL	HTL	HTL
	MR	MR	MR
	NAI	NAI	NAI

Recorded Property Flooding

Non Tidal

Tidal

Recorded Property Flooding from Sewers (by postcode)

Active

Resolved

Flood Risk Sources

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

Drawing Details

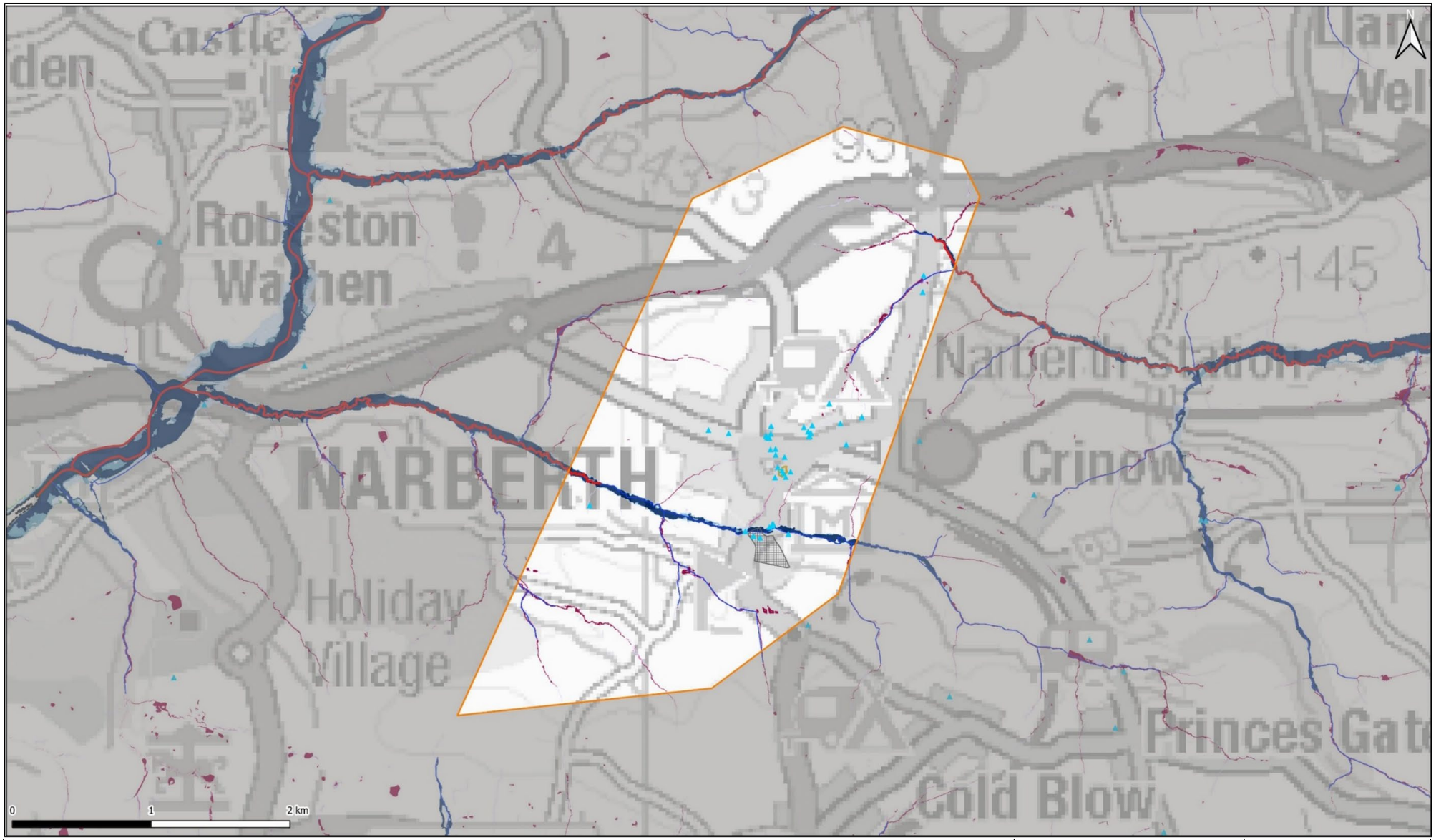
Date	Mar 2024
Revisions	001
Status	Draft
Location	TEN

Drawn BS | Checked CS | Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

11 NARBERTH

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	0	0	2	5	10	35	-	-	-
Essential Services (n)	0	0	0	2	2	2	-	-	-
Non-Residential Properties (n)	0	0	0	2	3	4	-	-	-
Primary/Trunk Roads (km)	0.3	0.4	0.6	0.1	0.4	1.0	-	-	-
Main Line Railways (km)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Agricultural Land - Grades 1, 2 and 3 (ha)	6.2	7.3	8.7	3.6	4.9	8.6	-	-	-
Special Areas of Conservation (SAC) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Sites of Special Scientific Interest (SSSI) (ha)	1.3	1.4	1.5	0.0	0.0	0.0	-	-	-
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Ancient Woodland (ha)	0.2	0.3	0.3	1.1	1.2	1.4	-	-	-
Registered Parks and Gardens (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Scheduled Ancient Monuments (SAM) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Listed Buildings (n)	0	0	0	0	0	0	-	-	-
National Park (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Conservation Areas (ha)	0.0	0.0	0.0	0.0	0.1	0.2	-	-	-
Caravans (n)	0	0	1	1	1	1	-	-	-



Key:

- PCC Boundary
- Community Area
- *Watercourses*
- NRW Main River
- Ordinary Watercourse

SMP Policies

	2020	2050	2100
	HTL	HTL	HTL
	MR	MR	MR
	NAI	NAI	NAI

Recorded Property Flooding

- Non Tidal
- Tidal

Recorded Property Flooding from Sewers (by postcode)

- Active
- Resolved

Flood Risk Sources

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

Drawing Details

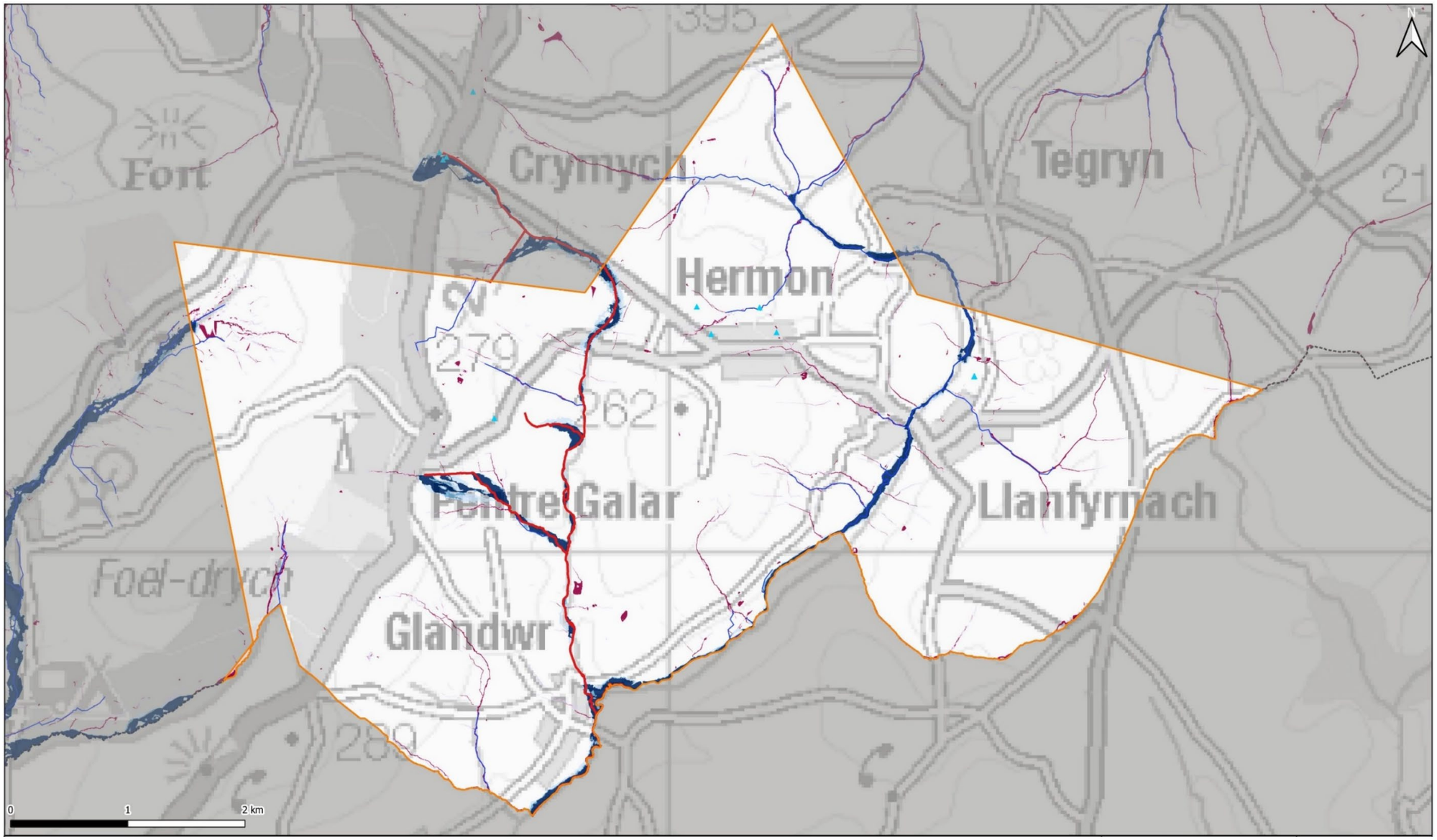
Date	Mar 2024
Revisions	001
Status	Draft
Location	NAR

Drawn BS | Checked CS | Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

12 TAF CATCHMENT NORTH

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	0	0	1	5	6	13	-	-	-
Essential Services (n)	0	0	0	1	1	2	-	-	-
Non-Residential Properties (n)	0	0	0	1	2	3	-	-	-
Primary/Trunk Roads (km)	0.2	0.3	0.6	1.3	2.1	5.1	-	-	-
Main Line Railways (km)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Agricultural Land - Grades 1, 2 and 3 (ha)	24.4	29.3	39.5	19.6	25.2	44.7	-	-	-
Special Areas of Conservation (SAC) (ha)	0.0	0.0	0.0	1.2	1.8	2.5	-	-	-
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Sites of Special Scientific Interest (SSSI) (ha)	0.1	0.2	0.2	1.2	1.8	2.5	-	-	-
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Ancient Woodland (ha)	2.2	2.4	2.7	0.6	0.7	1.1	-	-	-
Registered Parks and Gardens (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Scheduled Ancient Monuments (SAM) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Listed Buildings (n)	0	0	0	0	0	0	-	-	-
National Park (ha)	0.4	0.5	0.7	4.2	5.8	8.7	-	-	-
Conservation Areas (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Caravans (n)	0	0	0	0	0	0	-	-	-



Key:

PCC Boundary

Community Area

Watercourses

NRW Main River

Ordinary Watercourse

SMP Policies

	2020	2050	2100
Watercourses	HTL	HTL	HTL
NRW Main River	MR	MR	MR
Ordinary Watercourse	NAI	NAI	NAI

Recorded Property Flooding

- Non Tidal
- Tidal

Recorded Property Flooding from Sewers (by postcode)

- Active
- Resolved

Flood Risk Sources

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

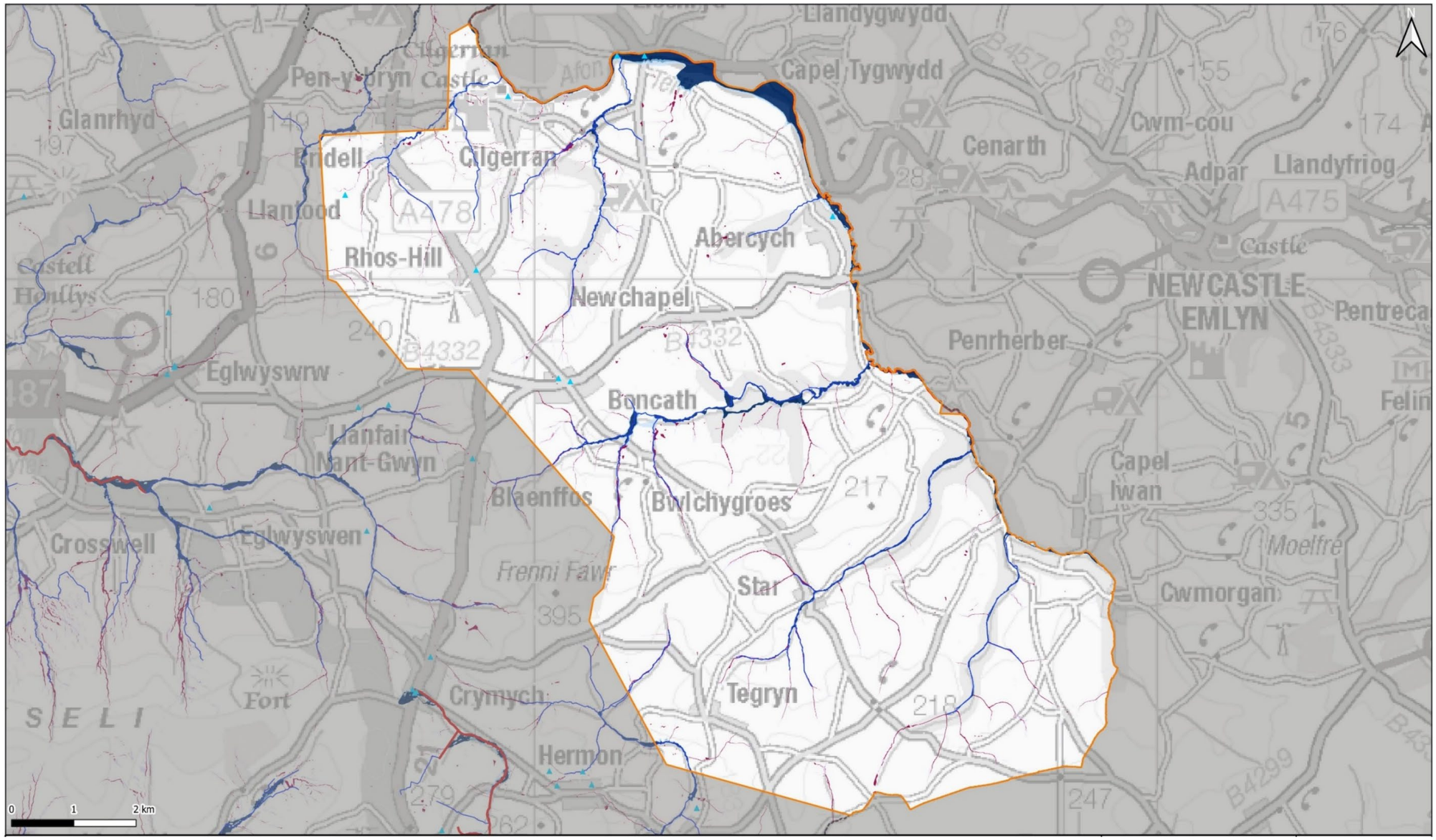
Drawing Details

Date	Mar 2024		
Revisions	001		
Status	Draft		
Location	TCN		
Drawn BS	Checked CS	Approved JG	

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

13 CYCH CATCHMENT

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	3	4	21	17	20	48	0	0	0
Essential Services (n)	4	5	5	0	0	2	0	0	0
Non-Residential Properties (n)	4	5	6	0	0	4	4	4	5
Primary/Trunk Roads (km)	0.9	1.1	2.3	1.4	1.9	4.4	0.0	0.0	0.0
Main Line Railways (km)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agricultural Land - Grades 1, 2 and 3 (ha)	69.4	79.5	94.4	30.0	39.8	69.1	3.6	3.8	3.9
Special Areas of Conservation (SAC) (ha)	9.8	12.5	17.5	1.6	1.7	1.9	5.6	6.8	7.4
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	29.9	30.4	31.2	1.6	1.7	2.0	6.1	7.5	8.2
National Nature Reserves (NNR) (ha)	0.7	0.8	0.9	0.0	0.0	0.0	0.4	0.4	0.5
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ancient Woodland (ha)	17.0	18.8	22.5	12.3	14.7	20.9	0.6	0.8	0.9
Registered Parks and Gardens (ha)	9.8	12.5	17.5	1.8	2.0	2.7	0.3	0.3	0.3
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Listed Buildings (n)	8	9	12	1	1	1	0	0	0
National Park (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Conservation Areas (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caravans (n)	0	0	0	0	0	0	0	0	0



Key:

- PCC Boundary
- Community Area
- *Watercourses*
  - NRW Main River
  - Ordinary Watercourse

SMP Policies

	2020	2050	2100
	HTL	HTL	HTL
	MR	MR	MR
	NAI	NAI	NAI

Recorded Property Flooding

- Non Tidal
- Tidal

Recorded Property Flooding from Sewers (by postcode)

- Active
- Resolved

Flood Risk Sources

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

Drawing Details

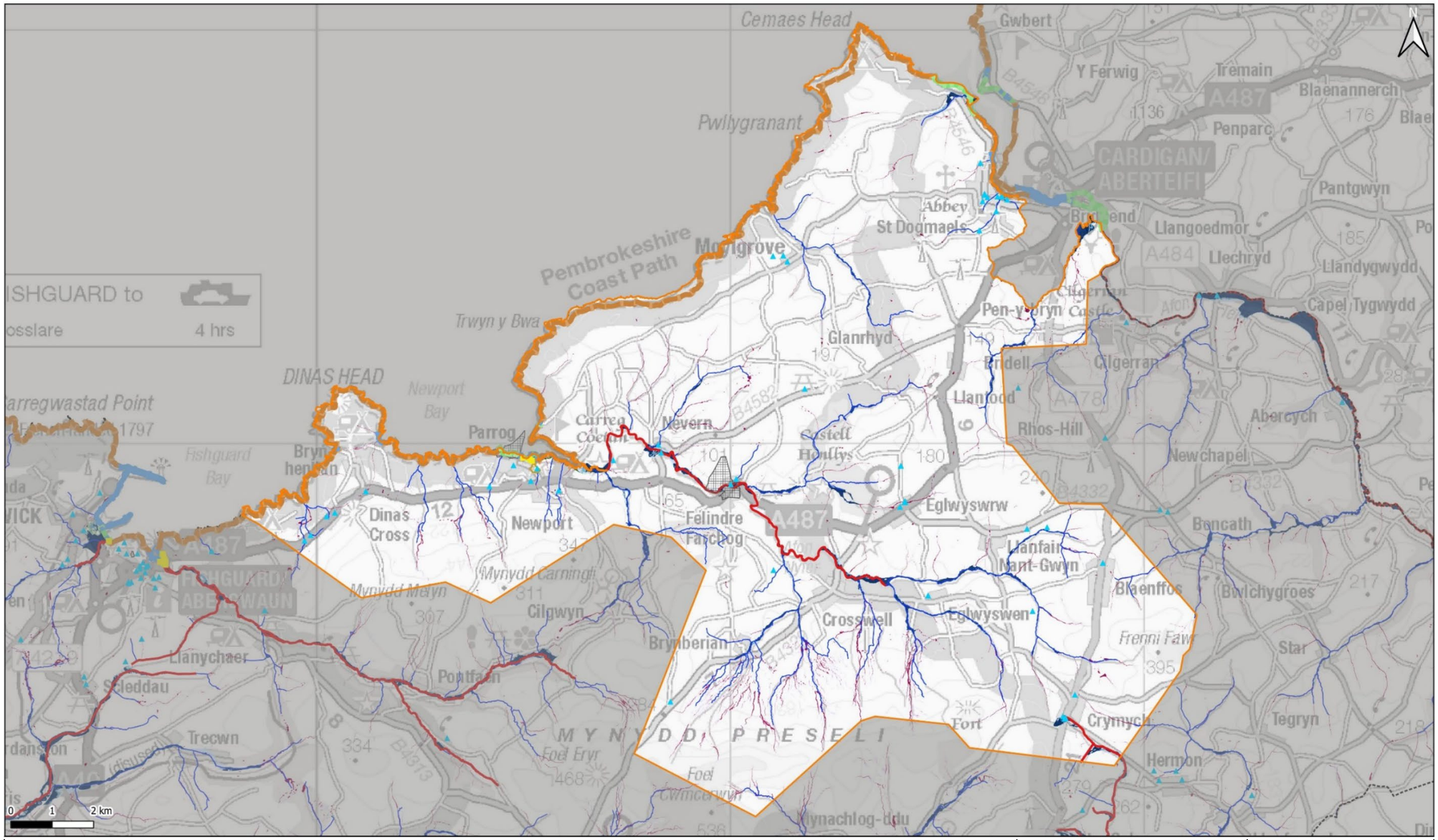
Date	Mar 2024
Revisions	001
Status	Draft
Location	CYC

Drawn BS | Checked CS | Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

14 NEWPORT AND NEVERN CATCHMENT

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	49	52	63	82	99	211	5	8	15
Essential Services (n)	3	3	4	11	11	17	4	4	4
Non-Residential Properties (n)	6	7	9	14	17	32	4	4	5
Primary/Trunk Roads (km)	2.8	3.9	5.6	4.7	6.7	14.9	0.7	1.0	1.2
Main Line Railways (km)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agricultural Land - Grades 1, 2 and 3 (ha)	129.3	149.8	184.6	133.4	177.7	317.1	85.9	89.8	92.7
Special Areas of Conservation (SAC) (ha)	0.0	0.0	0.0	32.7	46.5	77.9	29.8	30.8	31.6
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	14.7	15.9	17.3	33.6	48.3	81.0	32.9	34.0	34.9
National Nature Reserves (NNR) (ha)	1.0	1.1	1.3	0.6	0.9	1.5	0.1	0.1	0.2
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ancient Woodland (ha)	15.8	17.6	21.0	10.5	12.7	17.5	0.4	0.5	0.5
Registered Parks and Gardens (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Listed Buildings (n)	16	16	19	1	2	2	5	8	8
National Park (ha)	133.9	154.2	187.3	109.9	145.8	230.2	54.6	58.9	61.9
Conservation Areas (ha)	1.3	1.4	1.6	1.7	2.2	2.9	4.0	4.6	4.9
Caravans (n)	12	67	90	0	3	9	1	2	5



Key:

PCC Boundary

Community Area

Watercourses

NRW Main River

Ordinary Watercourse

SMP Policies

	2020	2050	2100
	HTL	HTL	HTL
	MR	MR	MR
	NAI	NAI	NAI

Recorded Property Flooding

Non Tidal

Tidal

Recorded Property Flooding from Sewers (by postcode)

Active

Resolved

Flood Risk Sources

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

Drawing Details

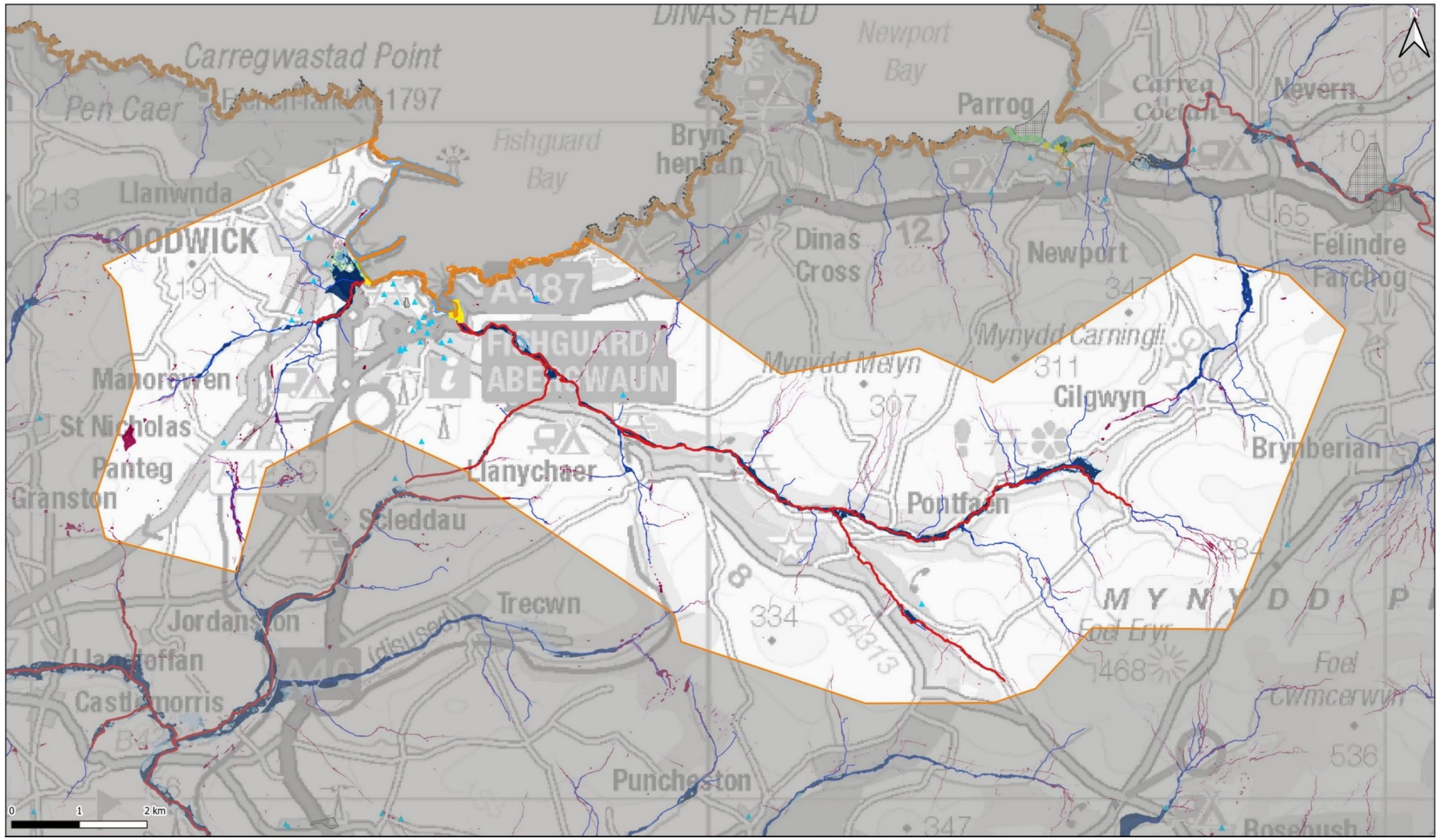
Date	Mar 2024
Revisions	001
Status	Draft
Location	NEW

Drawn BS | Checked CS | Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

15 FISHGUARD AND GWAUN

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	8	13	49	40	71	199	20	27	35
Essential Services (n)	1	1	3	5	6	14	4	6	6
Non-Residential Properties (n)	2	3	12	19	30	58	12	18	19
Primary/Trunk Roads (km)	1.2	1.8	3.0	3.9	5.9	11.7	1.8	1.9	2.0
Main Line Railways (km)	0.0	0.0	0.2	0.8	1.0	1.7	0.0	0.0	0.0
Agricultural Land - Grades 1, 2 and 3 (ha)	70.9	80.3	93.5	51.5	67.8	121.4	26.9	29.3	30.9
Special Areas of Conservation (SAC) (ha)	1.0	1.1	1.1	9.1	11.2	14.4	0.7	0.7	0.7
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sites of Special Scientific Interest (SSSI) (ha)	13.5	15.6	19.1	9.8	12.1	15.5	0.6	0.6	0.6
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ancient Woodland (ha)	14.2	15.8	19.7	4.0	4.9	6.8	0.0	0.1	0.1
Registered Parks and Gardens (ha)	1.0	1.1	1.1	0.1	0.1	0.2	0.0	0.0	0.0
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scheduled Ancient Monuments (SAM) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Listed Buildings (n)	6	14	20	0	0	1	20	21	22
National Park (ha)	92.0	104.3	121.1	35.1	45.2	68.9	0.8	0.8	0.9
Conservation Areas (ha)	3.4	3.8	4.7	0.8	1.2	1.7	2.5	2.9	3.2
Caravans (n)	0	0	1	0	0	0	0	0	0



Key:

- PCC Boundary
- Community Area
- *Watercourses*
  - NRW Main River
  - Ordinary Watercourse
- *SMP Policies*

	2020	*2050*	*2100*
HTL	▪▪▪▪	▪ ▪	▬
MR	▪▪▪▪	▪ ▪	▬
NAI	▪▪▪▪	▪ ▪	▬

- *Recorded Property Flooding*
  - Non Tidal
  - Tidal
- *Recorded Property Flooding from Sewers (by postcode)*
  - Active
  - Resolved
- *Flood Risk Sources*

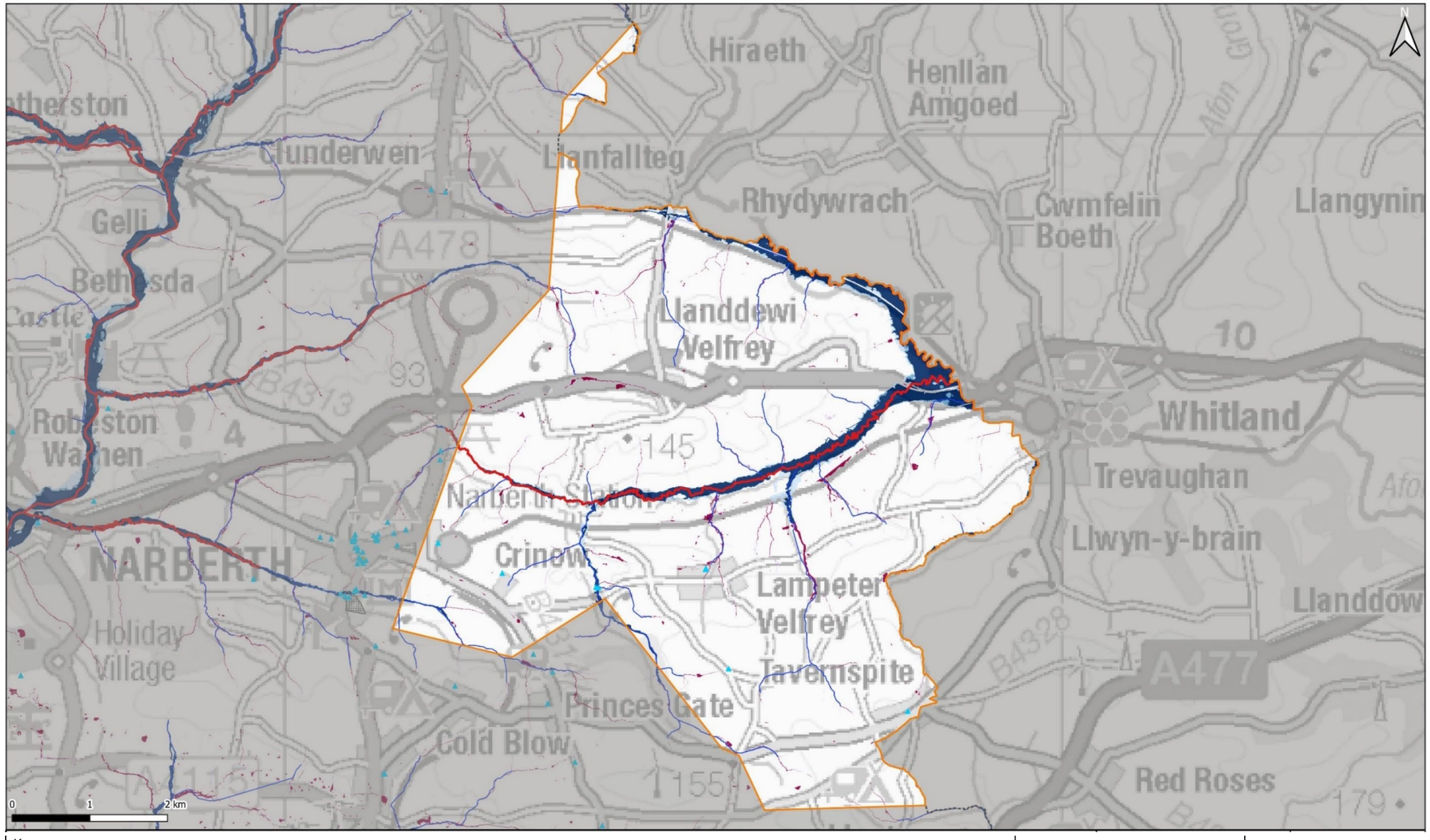
	Sea	Main River	Surface Water and Small Watercourses
High	■	■	■
Medium	■	■	■
Low	■	■	■

Drawing Details		
Date	Mar 2024	
Revisions	001	
Status	Draft	
Location	FGD	
Drawn BS	Checked CS	Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

16 TAF CATCHMENT SOUTH

Source	River			Small Watercourses and Surface Water			Coastal		
Risk Receptor	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
Residential properties at risk of flooding	0	0	2	9	12	19	-	-	-
Essential Services (n)	0	0	0	0	1	2	-	-	-
Non-Residential Properties (n)	0	0	0	2	3	4	-	-	-
Primary/Trunk Roads (km)	0.4	0.5	0.8	1.1	1.5	3.2	-	-	-
Main Line Railways (km)	0.1	0.2	0.4	0.1	0.2	0.4	-	-	-
Agricultural Land - Grades 1, 2 and 3 (ha)	113.4	123.5	145.2	28.1	35.8	60.0	-	-	-
Special Areas of Conservation (SAC) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Special Protection Areas (SPA) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Ramsar Sites (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Sites of Special Scientific Interest (SSSI) (ha)	0.0	0.0	0.0	0.1	0.1	0.1	-	-	-
National Nature Reserves (NNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Local Nature Reserves (LNR) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Ancient Woodland (ha)	1.7	1.9	2.1	3.8	4.6	6.2	-	-	-
Registered Parks and Gardens (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Country Parks (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Scheduled Ancient Monuments (SAM) (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Listed Buildings (n)	0	0	0	0	1	1	-	-	-
National Park (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Conservation Areas (ha)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Caravans (n)	0	0	0	0	0	0	-	-	-



Key:

- PCC Boundary
- Community Area
- *Watercourses*
  - NRW Main River
  - Ordinary Watercourse
- *SMP Policies*

	2020	2050	2100
	HTL	HTL	HTL
	MR	MR	MR
	NAI	NAI	NAI

- *Recorded Property Flooding*
  - Non Tidal
  - Tidal
- *Recorded Property Flooding from Sewers (by postcode)*
  - Active
  - Resolved
- *Flood Risk Sources*

Sea	Main River	Surface Water and Small Watercourses
High	High	High
Medium	Medium	Medium
Low	Low	Low

Drawing Details		
Date	Mar 2024	
Revisions	001	
Status	Draft	
Location	TCS	
Drawn BS	Checked CS	Approved JG

PEMBROKESHIRE LOCAL FLOOD RISK MANAGEMENT STRATEGY

Appendix B

LEGISLATIVE CONTEXT

The following outlines the main legislation influencing the management of flood risk in Pembrokeshire.

FLOOD AND WATER MANAGEMENT ACT (2010)

The Flood and Water Management Act 2010 (FWMA) was introduced in April 2010 in England and Wales and set to implement many of the recommendations made by Sir Michael Pitt's Review of the widespread flooding of 2007 in the UK. The Act was also intended to clarify roles and responsibilities between Risk Management Authorities (RMAs).

Lead Local Flood Authorities (LLFAs) were created under the Act, in this case PCC with responsibility for the management of local flood risk (from surface water, ordinary watercourses and groundwater). Under the Act Welsh Government is required to produce a National Strategy for Flood and Coastal Erosion Risk Management (the National Strategy) and the LLFAs are required to produce a Local Flood Risk Management Strategy in partnership with other RMAs (this document).

FLOOD RISK REGULATIONS (2009)

The Flood Risk Regulations 2009 have now been revoked under the retained EU Laws Act however they previously transposed the European Union Floods Directive (Directive 2007/60/EC on the assessment and management of flood risk) into domestic law in England and Wales. Under the Regulations, PCC were required to produce a local Flood Risk Management Plan to manage flooding from surface water and ordinary watercourses, which sat alongside the previous iteration of the Local Strategy.

PLANNING POLICY WALES (2021) AND TAN15

Planning Policy Wales is the overarching land use planning policy for Wales and provides the policy framework for local planning authorities' development plans. The main policy document is supplemented by a series of Technical Advice Notes (TANs).

At the present time the key document influencing flood risk is TAN15 (Development and Flood Risk) 2004 however Welsh Government is in the process of updating this TAN and a revised version TAN15 (Development, flooding and coastal erosion) is expected to come into force shortly. This will replace the existing TAN15 and TAN14 (Coastal planning). TAN15 guidance seeks to steer new development away from land at higher risk of flooding and provides guidance on acceptable levels of residual risk and the management of additional run-off from development. Important changes in the forthcoming TAN15 include the consideration of the effects of climate change in the definition of flood zones (which dictate where different development types are considered acceptable); the introduction of Community Adaptation and Resilience Plans to support strategic regeneration which is constrained by flooding or coastal erosion risk; and incorporation of coastal erosion risk management into the same document.

WATER FRAMEWORK DIRECTIVE (2000) / WATER ENVIRONMENT (WATER FRAMEWORK DIRECTIVE) (ENGLAND AND WALES) REGULATIONS (2017)

The aim of this European Union directive (and the associated UK regulations) is for Member States to adopt a holistic approach to water management and to achieve "good" status (in terms of ecological and chemical quality) of all waterbodies. Under the WFD River Basin Management Plans

have been developed by NRW (and the Environment Agency where applicable) for each of the River Basin Districts in Wales. These identify the pressures facing the water environment, objectives and proposed measures. Pembrokeshire falls under the West Wales River Basin Management Plan.

ENVIRONMENT (WALES) ACT (2016)

The Environment (Wales) Act (2016) introduced new legislation to promote the sustainable management of natural resources, enhance biodiversity and reduce carbon emissions. The Act also amended the FWMA to replace regional flood and coastal committees with a national Flood and Coastal Erosion Committee.

WELLBEING OF FUTURE GENERATIONS (WALES) ACT (2015)

The Wellbeing of Future Generations Act defines the seven wellbeing goals, which set a legally binding shared vision for public bodies in Wales. The aim of the Act is to improve the social, economic, environmental and cultural wellbeing of Wales. Under the requirements of the Act PCC has developed its Wellbeing Plan setting out the goals, priorities and actions at a local level.

LAND DRAINAGE ACT (1991)

The Land Drainage Act (with amendments) consolidated various legislation relating to land drainage and the functions and responsibilities of internal drainage boards and local authorities. The Act confers certain powers and responsibilities on the drainage authority (PCC in this case) in respect of land drainage, including the consenting of works to Ordinary Watercourses.

WATER RESOURCES ACT (1991)

The Water Resources Act aims to regulate water resources, water quality and pollution and flood defences within the UK to minimise pollution of water. In respect of flood defence, the Act set out some of the powers and responsibilities that would now fall to NRW although the Flood and Water Management Act is more recent and comprehensive legislation in respect of flood risk management.

WATER ACT (2003) AND WATER ACT (2014)

These Acts supplement the Water Resources Act and Water Industry Act to make additional and amended provisions relating to flood risk management (amongst other topics).

ENVIRONMENTAL ASSESSMENT OF PLANS AND PROGRAMMES (WALES) REGULATIONS 2004 – REQUIREMENT FOR A STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

A Strategic Environmental Assessment (SEA) is an approach used to ensure environmental issues are assessed and integrated at the earliest opportunity in the decision making process. It is a legal requirement in the UK for certain plans and programmes stipulated by the SEA Directive (2001/42/EC), to undergo Strategic Environmental Assessment (SEA). The SEA Directive is implemented in Wales by the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004.

As the Local Strategy is a ‘statutory plan’, a SEA is needed to appraise the potential environmental impacts of the Local Strategy and its objectives, prior to its approval and formal adoption. The purpose of the SEA is to provide for a high level of protection of the environment, by ensuring the

integration of environmental considerations into the preparation of the Local Strategy and to contribute to the promotion of sustainable development and environmental protection.

CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017 – REQUIREMENT FOR A HABITATS REGULATIONS ASSESSMENT (HRA)

In Wales, the Conservation of Habitats and Species Regulations (SI 1012, 2017), often known as the Habitats Regulations, implements the EU Habitats Directive (Directive (92/43/EEC) on the Conservation of natural habitats and of wild flora and fauna and certain elements of the Birds Directive (2009/147/EC). This legislation provides the legal framework for the protection of habitats and species of European importance in Wales and England. Regulation 9(5) of the Habitats Regulations requires that a competent authority must consider the requirements of Habitats Directive in exercising any of its functions. Article 6(3) of the Habitats Directive defines the requirements for assessment of plans and projects potentially affecting European sites.

Measures to address specific flood risk identified during the implementation of this Strategy may also require separate Habitats Regulations Assessment, depending on the measure proposed.

Appendix C

ACTION PLAN

See separate document

Appendix D

CONSULTATION

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