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Vale of Glamorgan
Public Services Board
Bwrdd Gwasanaethau
Cyhoeddus Bro Morgannwg

Vale of Glamorgan Public Services Board Climate Change Risk Assessment

Final Report - March 2026



Funded by
UK Government

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This report describes work commissioned by the Vale of Glamorgan Public Services Board (PSB), by an instruction dated 3rd October 2025. The Client's representative for the contract was Susannah McWilliam of Vale of Glamorgan Council. Lauren Prouse, Emily Amini, Gabriel Pearson and Ben Rabb of JBA Consulting carried out this work.

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Abbreviations & Definitions



Core Organisations & Governance

PSB – Public Services Board

Multi-agency partnership responsible for improving economic, social, cultural and environmental well-being in the Vale in line with the Well-being of Future Generations Act.

VoG – Vale of Glamorgan

The local authority area covered by this Climate Change Risk Assessment.

VoGC – Vale of Glamorgan Council

The local authority for the Vale of Glamorgan area providing a range of services including planning, social care, housing and education.

NRW – Natural Resources Wales

Environmental regulator providing evidence, monitoring and climate risk guidance.

C&V UHB – Cardiff and Vale University Health Board

Health organisation responsible for clinical services, public health planning and climate-related impacts on health.

AM&CE – Asset Management & Climate Emergency Subgroup

PSB subgroup coordinating climate and nature emergency actions.

LNP – Local Nature Partnership

Partnership supporting ecological recovery, habitat connectivity and nature-based solutions.

Climate & Risk Assessment Terminology

CCRA – Climate Change Risk Assessment

A structured assessment of how climate hazards, exposure and vulnerability create risks to people, services, buildings and ecosystems.

UKCCRA – UK Climate Change Risk Assessment

UK-wide assessment of climate risks that provides national evidence and urgency categories.

GWL – Global Warming Level

Increase in global average temperature compared to the pre-industrial period; used to frame local projections (e.g., +2°C, +4°C).

RCP – Representative Concentration Pathway

Climate modelling scenario describing future greenhouse gas concentrations (e.g. RCP4.5, RCP8.5).

Hazard

The climate-related event or condition (e.g., heatwave, flooding, drought).

Exposure

Where hazards intersect with people, assets or infrastructure.

Vulnerability

How sensitive communities or systems are to climate impacts due to social, economic or physical factors.

Agency (in risk scoring)

The extent to which PSB partners can influence and act on a given climate risk (financial capacity, staff, governance, evidence).

WFG Act – Well-being of Future Generations (Wales) Act 2015

Legislation requiring public bodies to take a long-term, preventative and collaborative approach to well-being and resilience.

SMP2 – Shoreline Management Plan (2nd iteration)

Long-term plan for managing coastal flood and erosion risk.

Just Transition Framework

Welsh Government framework guiding fair and equitable decarbonisation and adaptation.

UKCP18 – UK Climate Projections 2018

Climate model outputs used to assess future temperature, precipitation and sea level rise.

CRI – Climate Risk Indicators Portal

National dataset summarising indicators such as heatwaves, drought and wildfire risk.

WIMD – Welsh Index of Multiple Deprivation

Dataset identifying areas of social and economic disadvantage.

NbS – Nature-Based Solutions

Actions that protect, manage or restore natural ecosystems.

TAN – Technical Advice Note (Wales)

Welsh Government planning guidance that supports the Planning Policy Wales (PPW) framework. TAN-15 (Development, Flooding and Coastal Erosion) sets out how flood risk should be assessed and managed.

SFS – Sustainable Farming Scheme

Welsh Government scheme that supports farmers in Wales to produce world class, high-quality, food whilst caring for the environment, tackling and adapting to climate change and building resilience for those who will work and care for this precious land in the years to come.

Data, Climate Policy & Legislation

Executive Summary

Global temperatures have already temporarily exceeded 1.5°C above pre-industrial levels, emphasising how close the world is to breaching the Paris Agreement threshold of limiting warming to well below 2°C. At the same time biodiversity loss and threats to ecosystems are placing growing pressure on natural and human systems.

These global trends are reflected locally, with climate-related risks already being felt across the Vale of Glamorgan.

In April 2025, the Vale of Glamorgan Public Services Board (PSB) reinforced its shared commitment to addressing these challenges through the launch of the [Climate and Nature Emergency Charter](#), setting out collective pledges to reduce emissions, restore nature and embed sustainability across public services. The Charter supports this by committing partners to joint action on emissions reduction, nature recovery and climate resilience.

In Wales, PSBs are required under the Well-being of Future Generations (Wales) Act to take a preventative, collaborative and long-term approach to climate risks, making a local Climate Change Risk Assessment (CCRA) essential for identifying key hazards, understanding vulnerability, and coordinating effective adaptation across the Vale.

This CCRA provides a shared evidence base to inform urgent, coordinated adaptation across the Vale. It marks the beginning of an ongoing process to monitor, learn from, and respond to climate risks as they evolve, improving operations and services.

By undertaking this assessment, the PSB is taking a proactive step towards safeguarding the Vale's communities, services and natural assets. **The findings will guide collective action and ensure climate resilience is embedded across local decision-making.**

Key Findings and Priority Climate Risks

The report summarises the most significant climate risks facing the Vale, aligned with those in the most recent UK climate change risk assessment, highlighting where impacts are already emerging and where future pressures are expected to intensify. These findings provide an evidence-based foundation for prioritising adaptation efforts across PSB partners:

- **Over 60% of climate risks in the Vale require critical action or investigation.**
- **There are 13 priority risks** which score both **Critical Action Needed** and **moderate-or-higher PSB agency**, meaning the PSB can meaningfully influence outcomes.
- Climate risks in the Vale have **uneven social impacts**, with mental health, climate anxiety and social isolation emerging alongside physical risks, particularly for vulnerable groups.

44 climate risks assessed for the Vale	
16 need critical action	11 need critical investigation
11 need more action	5 need further investigation
1 needs to sustain current action	0 are watching brief

What the PSB will do next

Next steps focus on how the PSB can use this evidence to guide action - by agreeing risk owners, strengthening capacity, aligning existing policies, and working closely with communities and partners. The aim is to ensure this assessment directly enables effective adaptation across the Vale. Key priorities include:

- Assign collaborative ownership to priority risks
- Establish a PSB-wide adaptation coordination mechanism
- Integrate climate risk into existing strategies, investment plans and service delivery frameworks.
- Develop a monitoring framework to track progress and undertake cyclical reassessment of risks
- Engage communities and frontline staff in shaping and delivering adaptation actions

Introduction and Context

The purpose of this section is to establish the basis for the **Vale of Glamorgan Public Services Board's (PSB) Climate Change Risk Assessment**. It provides the foundation for subsequent sections, which explore past climate impacts, vulnerability and exposure, and the prioritisation of climate risks that require coordinated action.

In doing so, the assessment aims to support the PSB in strengthening its contribution to long-term prevention, resilience and adaptation and in informing future Well-being Assessments and Plans.

Introduction to the Vale's Climate Change Risk Assessment

Public Services Boards are required under the **Well-being of Future Generations (Wales) Act¹** to take a preventative, long-term approach to climate risks - making a local **Climate Change Risk Assessment (CCRA)** an expectation to inform well-being planning and collective action.

The **Vale of Glamorgan (VoG) Council**, on behalf of the **Vale of Glamorgan Public Services Board (PSB)**, has therefore commissioned an initial place-based CCRA.

The CCRA aims to inform future collaborative adaptation actions within and across PSB partners - ensuring the continued delivery of services and support for sustainable and resilient local communities in the face of a changing climate. The objectives of the CCRA process are to:

1. **Enable partners to collectively understand and collaboratively respond to current and future climate risks** affecting services, infrastructure, communities and the environment - and their implications for local health and well-being.
2. **Be co-developed** with a range of PSB stakeholders, grounded in sound evidence, and enable identification of practical, locally relevant adaptation and mitigation opportunities.
3. **Support PSB decision-making and planning** in line with the Well-being of Future Generations (Wales) (WBFNG) Act and Welsh Government climate policies.

The Vale of Glamorgan PSB includes:

- Vale of Glamorgan Council
- Cardiff and Vale University Health Board
- South Wales Fire and Rescue Service
- Natural Resources Wales
- South Wales Police
- Office of the Police and Crime Commissioner
- Welsh Government
- Welsh Ambulance Service NHS Trust
- Glamorgan Voluntary Services
- Cardiff and Vale College
- National Probation Service
- Transport for Wales


Town and Community Councils are represented at PSB meetings, with feedback provided to TCCs.

The **PSB Wellbeing Plan (2023-2028)²** has three main objectives – all of which face risks and/or opportunities as the climate continues to change:

1. A more resilient and greener Vale
2. A more active and healthier Vale
3. A more equitable and connected Vale

The PSB **Asset Management and Climate Emergency Subgroup³** (AM&CE) coordinates actions and shares best practice among PSB partners to tackle climate and nature emergencies. The AM&CE group have taken a lead role in the development of the CCRA on behalf of the PSB.

1. [Well-being of Future Generations \(Wales\) Act 2015](#)
2. [Vale of Glamorgan PSB Wellbeing Plan's \(2023-2028\)](#)
3. [PSB Asset Management and Climate Emergency Subgroup \(AM&CE\)](#)



THE VALE OF GLAMORGAN
PUBLIC SERVICES BOARD
WELL-BEING PLAN 2023-2028

Tackling the Climate and Nature Emergencies in the Vale of Glamorgan

The local environment and natural world are huge assets to the Vale with 60 kilometres of coastal path, beautiful countryside and country parks and a significant agricultural economy. However, climate change is putting pressure on the environment as we balance our economic, social and cultural well-being ensuring we respect the environment and nature.

The Vale of Glamorgan PSB Well-being Plan 2023-28 includes the objective: 'A more resilient and greener Vale'. In

UK & Wales Climate Policy Context

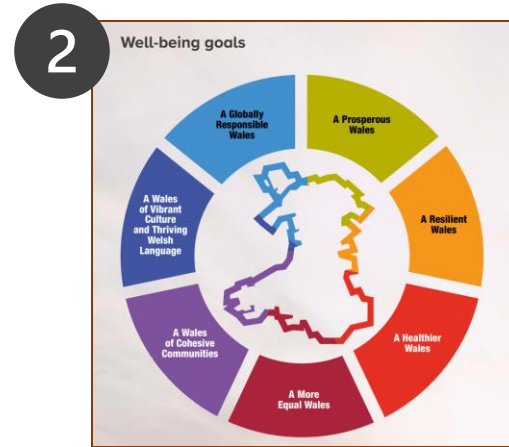
This CCRA has been developed in line with NRW's PSB Climate Change Risk Assessment framework¹ and guidance (Co-produced with Welsh Government and Public Health Wales), which sets out how public bodies in Wales should identify, assess and prioritise climate risks in a transparent and evidence-led way. The framework emphasises understanding risk through the interaction of **hazard, exposure and vulnerability**, and using this to support proportionate, preventative action.

The assessment sits within the statutory context of the **Well-being of Future Generations (Wales) Act 2015**,² which requires PSBs to take a long-term, preventative and collaborative approach to building resilience and improving well-being. Section 38 of the Well-being of Future Generations Act requires Public Services Boards (PSBs) to take account of the latest UK CCRA when preparing their Well-being Assessments. Climate adaptation is central to achieving a *more resilient, healthier and more equal Wales*.

Therefore, this assessment reflects the latest draft of the **UK Climate Change Risk Assessment**³ (UKCCRA4-IA), which provides national evidence on climate risks, impacts and urgency, including Wales-specific findings and urgency categories. These national risks have been used as a consistent starting point and translated into locally relevant risks for the Vale.

In Wales, the **Climate Adaptation Strategy for Wales**⁴ sets out what good adaptation looks like in practice, focusing on protecting vulnerable groups, safeguarding services and infrastructure, and embedding adaptation into everyday decision-making. This CCRA supports those objectives by providing a shared evidence base for PSB partners. Finally, earlier assessments, including the Welsh summary for **CCRA3**⁵, provide important context on how climate risks have evolved and where risks are intensifying. This assessment builds on that evidence, while updating the approach to reflect new data, methods and guidance.

1. [NRW PSB Climate Change Risk Assessment framework and guidance](#)
2. [Well-being of Future Generations \(Wales\) Act 2015](#)
3. [Draft 4th UK Climate Change Risk Assessment](#)
4. [Climate Adaptation Strategy for Wales](#)
5. [UKCCRA3: Summary for Wales](#)



1

Cyfoeth Naturiol Cymru
Natural Resources Wales

Noddir gan Lywodraeth Cymru
Sponsored by Welsh Government

Climate Change Risk Assessment Framework for Public Services Boards

3

Proposed methodology for the Fourth Climate Change Risk Assessment - Independent Assessment (CCRA4-IA)
May 2024

Climate Change Committee

5

UK CLIMATE RISK

Evidence for the third UK Climate Change Risk Assessment (CCRA3)

Summary for Wales

Author: Dr. Alan Netherwood, Netherwood Sustainable Futures
Image: Miners Trail, Snowdonia National Park (Unsplash)

4

Climate Adaptation Strategy for Wales 2024

5.7 Our Adaptation Action Plan for Health and Well-being

Climate-related impacts to health and well-being

As set out in section 2.5, human health is inextricably linked to the health of the planet, with climate change regarded by the World Health Organisation (WHO) as the "single biggest health threat facing humanity" impacting the "essential ingredients of good health – clean air, safe drinking water, nutritious food supply and safe shelter" and **worsening existing health inequalities**. Inequalities in health arise because of inequalities in society and the conditions in which people are born, grow, live, work and age. These lead to health inequity, unfair and unjust systematic differences in people's health and well-being. They are socially determined by circumstances largely beyond an individual's control, disadvantaging people and limiting their chance to live longer, healthier lives.

The building blocks for good health are usually referred to as the wider determinants of health. They include education and skills, a warm safe home, fair work, money and resources, access to affordable and sustainable transport and healthy physical environments. These conditions and our inclusion with them, affect us from our earliest experiences and throughout our lifetime. Different experiences of, and levels of inclusion with, these determinants create health inequalities that lead to differences in health outcomes, resulting in those in the least deprived areas in Wales living longer and healthier lives than those in the most deprived.

This chapter sets out the actions needed by the health and social care system in Wales to respond to the risks and opportunities from climate change to ensure the resilience of population health and well-being, and health and social care delivery. It also sets out the actions needed by a wide range of sectors and players whose activities directly or indirectly impact the health and well-being of the people of Wales.

Climate Adaptation Outcomes

What does good look like?

People are protected from the health impacts of climate change and any potential benefits are utilised:

- Minimised mortality, morbidity, and mental ill-health impacts from heat, storms and flooding.
- Climate-sensitive disease prevalence predicted and addressed.
- Potential mental and physical health benefits realised from more time spent outdoors due to warmer temperatures.
- Minimised health impacts from indoor and outdoor air and other environmental quality changes.

Quality and accessible health and social care delivery during extreme weather:

- Overheating prevented in primary and community care, hospitals and care home settings.
- Minimal disruption to health and social care delivery due to storms and flooding.
- Climate resilient supply chains for health and social care.
- Minimal impacts on the health, safety and mental well-being of the health and social care workforce in the context of climate related changes to the working environment.

The UK Climate Change Risk Assessment

The independent UK Climate Change Risk Assessment (CCRA4-IA)¹ provides a detailed summary of the climate risks for England, Scotland, Wales and Northern Ireland. These risks are grouped across five themes - the **Built Environment, Economy, Health, Land/Food/Nature and Infrastructure**.

UK Climate Change Risk Assessment

What is it?

Required by the Climate Change Act 2008: the UK Government must assess climate risks every 5 years. This informs Adaptation Plans for all UK nations.

The Climate Change Committee (CCC) provides independent advice for the CCRA and publishes an Evidence Report that underpins each CCRA. The UK Government uses this evidence to set priorities.

Cycle & Current Status:

- CCRA1: 2012
- CCRA2: 2017
- CCRA3: 2022
- CCRA4: Independent Assessment due in Spring 2026, and full report due in 2027

Why this matters for the PSB

Many of the highest-urgency risks for Wales are already being experienced locally in the Vale.

This national risk framework provides the foundation for the Vale PSB CCRA, ensuring local decisions are grounded in consistent, Wales-wide evidence.

This assessment uses this framework to:

- **Focus effort** where action is most needed
- **Ensure alignment** with Welsh Government expectations
- Support **defensible, evidence-based prioritisation**

Within this assessment, national risks have been used as a starting point to understanding risk to PSB operations in the Vale.

44 Risks Assessed for the UK

8 need critical action

16 need critical investigation

16 need more action

4 need further investigation

Risks by chapter



Wales shares the UK-wide set of 44 climate risks, but several score higher urgency compared to other nations due to our coastal exposure, older housing stock, rural access to services and health inequalities. The UK urgency categories¹ shown above reflect how severe each risk is and whether the evidence base is strong enough to act or requires further investigation.

1. [Technical Report Executive Summary for CCRA4](#) 2. [CCRA3: UK Climate Risk](#)

	CCRA3 (2022) ²	Changes to CCRA4 (Due 2026)
Number of risks across assessments	61 UK-wide risks across five sectors	44 UK-wide risks across five updated sectors
Priority risks?	8 priority risk areas needing urgent actions	8 priority risks needing critical action – different risks to UKCCRA3
Risk scoring system	Urgency scoring system	Refined urgency scoring system for clearer priorities
Outputs for adaptation?	Principles for good adaptation planning	Adds analysis of 'good adaptation' and cost-benefit insights
	No equivalent	New Well-Adapted UK Report (<i>yet to be published</i>) to guide practical action

Step 1 - The Vale's approach to the CCRA

This section outlines the **method** used to conduct the CCRA and emphasises how engagement with PSB members and the communities they serve has been central to the approach.

The Vale of Glamorgan PSB has undertaken its Climate Change Risk Assessment using the Natural Resources Wales Climate Change Risk Assessment Framework for Public Services Boards, applying a structured, place-based methodology designed to assess climate risks in the context of local well-being.

CCRA framework for PSBs

1. [NRW PSB Climate Change Risk Assessment framework and guidance](#)

The Vale PSB CCRA follows the five steps (see diagram below) of NRW's **Climate Change Risk Assessment Framework for Public Services Boards** 1.

This provides a structured approach for:

- understanding **past and current climate impacts**,
- assessing future **climate hazards, exposure and vulnerability**,
- prioritising risks through **engagement**,
- and identifying next steps for **action, monitoring and review**.



Climate Change Risk Assessment Framework for Public Services Boards

Purpose

Our climate is changing and will continue to do so. We need to take steps to protect the well-being of our communities who are at risk of the social, economic, cultural and environmental impacts of the changing climate. Climate adaptation is the term used to cover the actions needed to cope with the impacts of climate change.

The **Climate Change Committee** in its report 'Adapting to Climate Change progress in Wales's identified 'insufficient progress in delivery and implementation of adaptation'.

Section 38 of the Well-being of Future Generations Act requires Public Services Boards (PSBs) to take account of the latest UK Climate Change Risk Assessment (CCRA) when preparing their Well-being Assessments.

Analysis by NRW of Well-being Assessments published in 2022 concluded that most Well-being Assessments did not take account of the latest UK Climate Change Risk Assessment (CCRA). Without undertaking an adequate local assessment of climate risk, it will be difficult for PSBs to effectively prioritise their collective climate adaptation activity.

This framework has been developed specifically to help PSBs consider the risks identified in the UK CCRA in a local well-being context. It has been created by Natural Resources Wales (NRW) in collaboration with the Welsh Government (WG) and Public Health Wales (PHW), for use by PSB practitioners. It has been designed to accelerate effective adaptation action for PSBs. Its application will help PSBs become more informed about the threats that climate changes now, and in the future pose to the well-being of communities in a locality.

PSBs should use of this framework to help inform the delivery of Well-being Plans. It will also help PSBs to ensure that other partnerships and public sector initiatives are considering the multiple, diverse, and cumulative impacts of a changing climate on well-being in their locality.

Scope

Using this framework, together with the associated workbook, will help PSB partnerships to:

- Use the CCRA3 Summary for Wales to consider how and where economic, social, environmental, and cultural well-being dimensions are likely to be impacted by the changing climate now and in the future.

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members of staff). The purpose of the consultation was to enable a more in-depth technical review of the scoring and assumptions by subject-matter experts.

Business Boards and Directorates received the draft baseline report, and were provided with information on the assessment as well as during the consultation. They also sought to establish firm links and contacts for wider climate change adaptation, and sought comments on whether the service plans were an accurate reflection of the scope of the Board/Directorate activity and whether there were any areas to flag as vulnerable to climate change.

In-person and virtual awareness-raising sessions were held for all interested staff. For a fuller report of the consultation process, please refer to the [consultation summary](#).

Metrics and Scoring Methodology

Each activity listed in service plans was scored to capture the magnitude of climate risk, the existing magnitude of response to the risk, the proximity of the risk, and the urgency to take action (Table 3). We did not seek to classify climate change risks specifically for NRW, but rather used the UK-wide framework of climate change risks (and opportunities) developed for the Third UK Climate Change Risk Assessment. This framework identifies 61 risks and/or opportunities relevant to the UK and UK nations. We matched these risks and/or opportunities with each of the service plan activities. The CCRA3 ranks these risks and opportunities by urgency and magnitude of further necessary action, and we scaled these ranks into scores for the purpose of our assessment. We applied the scores such that the maximum rank from all identified risks or opportunities relevant to any one service plan activity was used for that activity (Figure 4, Table 3).

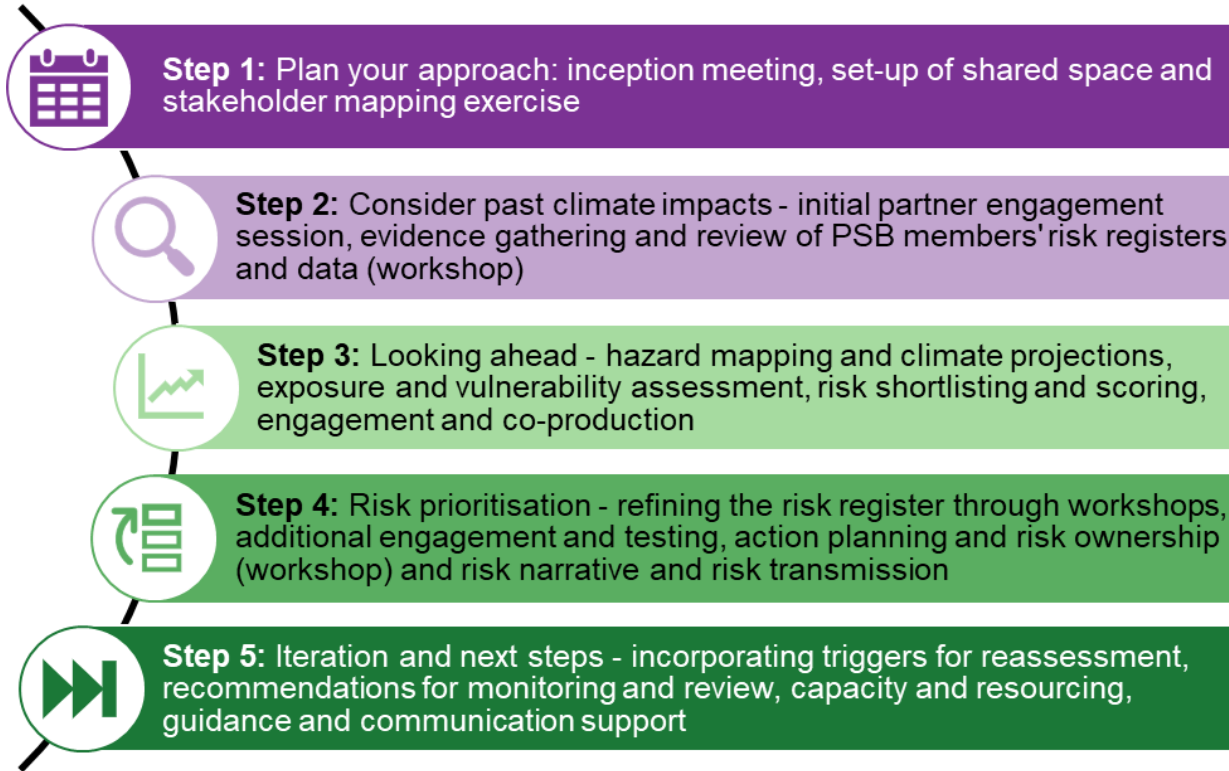
CCRA3 definition	Score
More action needed	5
Further investigation	3.75
Sustain current action	2.5
Watching brief	1.25

Figure 4: Numerical scores developed for CCRA3 urgency ratings

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Table 3: Metrics used for climate risk and mitigation assessment

Metric	Description	Numerical range
CCRA3 risk score	CCRA3 risks relevant to a specific Business Board activity, assessed by the Climate Risk and Adaptation	Scores are allocated on the basis of the urgency scale provided by CCRA3 as follows



To complement the PSB framework and ensure alignment with national best practice, selected methodological elements of the **Climate Risk Baseline Assessment for NRW (2024)**² and the **UK Climate Change Risk Assessment (CCRA4)** have been applied. Recent CCRA3s in three regions of South Wales, adjacent to or near the Vale, were reviewed to inform the most appropriate method. Please see [Appendix 1](#) for more information on these CCRA3s.

- These include:
- using **national risk themes** as a consistent starting point,
 - reflecting **Welsh urgency categories** to help focus local prioritisation,
 - and considering **agency and responsibility** to support clear ownership of priority risks.

This approach ensures the assessment is locally grounded, while remaining consistent with NRW guidance and national evidence.

This CCRA focuses on identifying and prioritising climate risks, creating a shared understanding across PSB partners that can be used to inform future adaptation planning, investment decisions and service planning.

An overview of how stakeholders were engaged is presented on the next page (9).

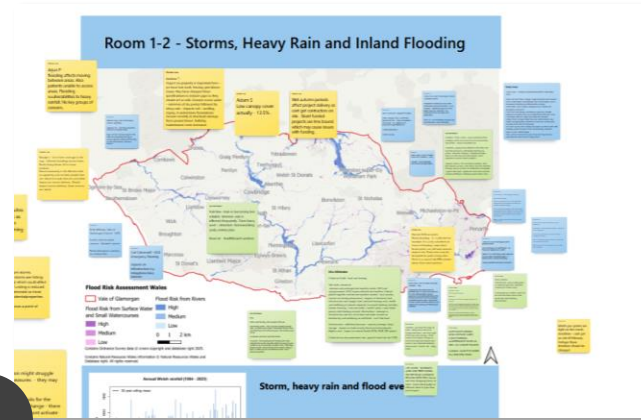
Our Engagement Approach

Engagement has been central to the Vale's PSB CCRA, ensuring the assessment is grounded in local experience, service-level insight and community perspectives.

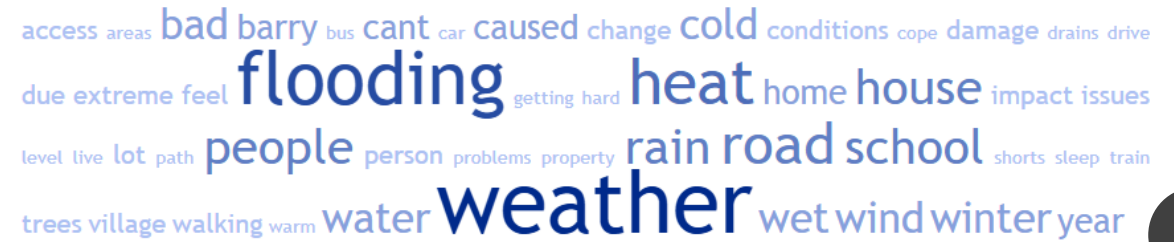
Here is a summary of key engagement points with Partners within the CCRA process:

- An initial request for information: informed a review of PSB partners' relevant reports and associated climate risk management data.
- An online workshop (1) (October 2025) with PSB partners and key services to explore past weather and climate impacts (**100+ insights**), using breakout discussions structured around key hazards (heat, flooding, storms and coastal change).
- Two in-person workshops (2) involving 35 attendees representing 13 organisations (December 2025) to support risk prioritisation, bringing together operational and strategic perspectives to test national risks against local experience and agree priority risks for the Vale.

1



2



3

Word cloud of responses from our online survey

Community and Lived Experience

From August to December 2025, e-surveys and targeted outreach were used to capture lived experience (3) from:

- older people (e.g. CF61 Chatty Caffi, 50+ Forum),
- unpaid carers,
- young people,
- council tenants and residents,
- business groups and community councils.
- One Voice Wales

Feedback captured through open-text responses, conversations and facilitated discussions, allowing participants to describe real-world impacts in their own words.

Alongside PSB partners, an additional 14 organisations and communities were reached to provide in-depth responses. Overall, **66** responses were received. Evidence given included:

- **Older residents** are facing heat and cold stress in homes not designed for changing weather, resulting in health, isolation and cost burdens.
- **Homes, roads and transport** links are increasingly disrupted by flooding, storms and drainage failures, leading to property damage and service downtime.

How Engagement Informed the Assessment

Evidence from engagement was used to:

- identify how **national climate risks** are experienced **locally**,
- understand **exposure** and **vulnerability** across different groups and services,
- inform **risk narratives** and **impact chains** for priority risks,
- support **risk prioritisation** alongside national and local evidence.

Engagement findings were compared with climate projections, existing risk registers and GIS analysis to ensure a balanced, evidence-led assessment.



Step 2 - Past Weather and Climate Impacts in the Vale

This section summarises:

- i) Notable **past and recent weather and climate events** affecting the Vale of Glamorgan;
- ii) How associated impacts are currently experienced and managed by PSB partners; and
- iii) How climate hazard **exposure and vulnerability** vary across the Vale, influencing risks to well-being.

Past climate and weather events in the Vale

A timeline of significant climate and weather events in the Vale was developed using evidence from workshops, community surveys and desk-based research, examples of which have been provided below. Online and in-person workshops engaged over 130 participants from PSB partners, key services, and community groups. Discussions focused on past events such as winter storms, heatwaves, and flooding, capturing **operational** and **lived experience** impacts.

Local evidence was used to interpret national climate risk projections at a Vale-specific scale. Understanding past events provide an evidence base and shape risk narratives and impact chains, ensuring priority risks reflect both projected hazards and real-world vulnerabilities.



River Cadoxton - Afon Tregatwg (cc)

Heatwaves and drought in Barry and Penarth (July-August)



Cowbridge FSA (BBC)

Storm Bert flash flooding (November)

Storm Darragh (December)



(cc)

2012 -13

2018

2020

2022

2024

2025

Winter storms and flooding in Barry, Penarth and River Thaw Catchment



(cc)

Storm Ciara
Storm Dennis (February)

Extreme Heat (July)



(cc)

Wildfires near Wenvoe, Dinas Powys and St Athan (March)

Extreme Heat (July-August)

Storm Claudia (November)

A wider range of recent UK extreme weather events is presented in [Appendix 6](#).

PSB Evidence Review

A review of PSB partners' relevant reports and associated data was undertaken to understand how climate impacts are currently experienced and how climate change risks are managed by some PSB partners.

A request was shared with all PSB partners, with documents and feedback received from:

- **Vale of Glamorgan Council (1):** Provided useful context on how the Council is undertaking action around the Climate Emergency.
- **Transport for Wales (2):** TfW's rapid adaptation pathways report and Climate adaptation plan detailing future adaptation strategy for their services.
- **Cardiff and Vale University Health Board (3):** As part of their Climate and Sustainability agenda, the UHB is working towards understanding the vulnerability and exposure of their services to climate change. Including understanding the baseline impact of climate change through a Staff Heat Health Survey and a further flooding survey.
- **Natural Resources Wales (4):** As part of their existing management of climate risk and adaptation, this assessment maps NRW's overall organisational climate risks.
- **HM Prison and Probation Service in Wales** have begun completing CCRA to the operation of prisons, probation contact centres, unpaid work sites and approved premises. The risk assessments were co-designed with Public Health Wales.
- **South Wales Police** is in the early stages of developing a climate adaptation approach, with internal engagement underway, governance and tools in development, workshops planned and an initial flood risk screening of priority sites.
- **South Wales Fire and Rescue Service** is developing a Community Risk Management Plan to assess current and emerging risks across the service area, including climate change impacts on core functions, to inform future planning and resource allocation.

Taken together, the evidence highlights a cross-cutting risk for the Vale of Glamorgan PSB arising from increasing climate impacts on critical services and assets.

1

Financial Resources Corporate Risk 1

1 – Risk Overview

1.1 Risk Definition	Financial resources are the funds and assets that enable delivery of the organisation's activities. The associated risk is failure to deliver a balanced budget to sustain services both now and into the medium-term, for the reshaping programme to deliver the necessary savings and to secure external funding to support economic development.										
1.2 Risk Owner	Head of finance/151 Officer										
1.3 Supporting governance	Agreeing the Budget is a Council function with regulations in place requiring the annual budget to be set by 11 March ahead of each financial year. Budget setting is a continuous process with Cabinet agreeing a strategy in the summer and then a series of updates and iteration of pressures and proposal to Cabinet across the following months and review through the Council's Scrutiny Committees and engagement with the Schools Forum, headteacher groups, the public and other interested parties. Management of the resources during the year is governed through the Council's Constitution, most notably the Financial Procedure Rules and Contracts Procedure Rules. There is also regular reporting on a quarterly basis to Cabinet with review by all of the Scrutiny Committees.										
1.4 Impact on our contribution to the Wellbeing Objectives	<table border="1"> <tr> <td>Creating great places to live, work and visit</td> <td>Respecting and conserving the environment</td> <td>Giving everyone a good start in life</td> <td>Supporting and protecting those who need us</td> <td>Being the best council we can be</td> </tr> <tr> <td>Yes</td> <td></td> <td></td> <td></td> <td>Yes</td> </tr> </table>	Creating great places to live, work and visit	Respecting and conserving the environment	Giving everyone a good start in life	Supporting and protecting those who need us	Being the best council we can be	Yes				Yes
Creating great places to live, work and visit	Respecting and conserving the environment	Giving everyone a good start in life	Supporting and protecting those who need us	Being the best council we can be							
Yes				Yes							

1.5 Risk Categories (inc. consideration of risk appetite)

Categories	Yes/No	Definition
Political & Legislative	Yes	Political and legislative repercussions of failing to provide statutory and priority services. Inability of political and senior leadership to safeguard Council's finances and deliver cohesive budget strategy to tackle the funding deficit and deliver sustainable services. Failure to develop alternative approaches to service delivery which can be sustained into the long term to ensure services remain accessible and meet needs, could result in political instability.

2



Rapid Adaptation Pathways, Decision System Mapping & Adaptive Capacity Analysis Project for Transport for Wales

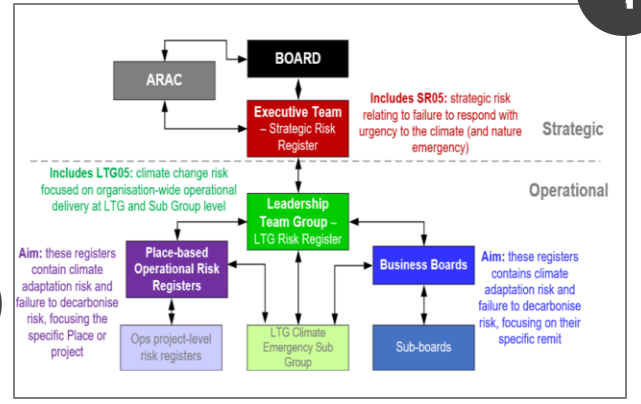
Final Report

Climate Sense

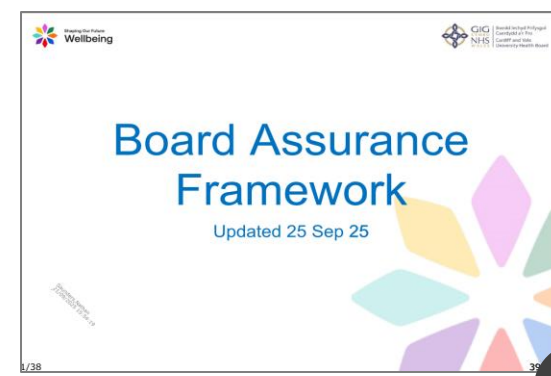
August 2024



4



3



Lived experience and stakeholder evidence

In the online workshop, PSB partners shared professional and lived experiences of how climate-related risks have already impacted their organisations and communities. These insights were gathered during the Current Weather & Climate Impacts Workshop.

Example risks and impacts identified include:

Overheating offices mean more fans and temporary A/C units, driving up electricity use. Heavy rainfall and poor roof conditions lead to leaks, damage, and disruption.

Heatwaves brought more patients through the door, with some deteriorating in the heat. Our staff also suffered heatstroke, so productivity dropped sharply.

Prolonged wet weather in 2023–24 created unprecedented impacts across the Vale's rural economy, affecting livestock welfare, crop production and farm incomes. These pressures extended beyond agriculture, increasing infrastructure stress, costs and mental health impacts across communities.

Storms in late 2024 / early 2025 left tracks waterlogged and services cancelled. Stations and rail lines hit by flooding. In summer, heatwaves bring speed restrictions, track fires, and buckling.

Wetter autumn periods affect project delivery as we can't get contractors to site — time bound fundings causes issues.

We are having an increase in wildfires and flooding-related incidents.

Flooding in Dinas Powys in winter, wildfires in spring, dry spells in summer - our staff are under huge pressure.

All examples provided against maps have been included in **Appendix 2 – Past Impacts**.

Following the workshop, surveys and targeted outreach was utilised to capture lived experience from community groups.

Example risks and impacts identified include:

Flooded roads made it impossible to collect my children from school - it's happened five times in a year.

The hot weather brought more visitors to Barry Island, but litter and antisocial behaviour got worse.

I have terrible problems sleeping during storms - paranoid about damage.

Insulation traps heat overnight - my bedroom reached 38°C during the heatwave.

Public transport is inaccessible in wet weather - lots of steps and no shelter.

Hot weather and drought damaged crops - grass ran out and we had to use winter stock feed.

My late husband had COPD - he really suffered in the heat.

Heavy rainfall blocked culverts and forced manhole covers to lift - Fire Service had to pump water out.

Theme:

- Health & Wellbeing
- Built Environment
- Infrastructure
- Economy
- Land, Nature and Food

What these impacts tell us about exposure and vulnerability

Understanding **current impacts and risk** helps identify and prioritise potential future climate threats to support informed adaptation choices. A review of previous climate and weather events in the Vale, informed by desk-based research (such as flood and deprivation mapping) and resident and organisational experience, reveals considerable effects on the exposure and vulnerability of communities throughout the area.

Exposure

Exposure describes where **climate hazards intersect with people, property, infrastructure and services, influencing the potential for impacts on well-being**. In the Vale, exposure varies spatially and is shaped by coastal location, settlement patterns and housing characteristics.

Coastal communities, particularly Barry, Llantwit Major and Penarth, are exposed to a high risk of coastal flooding, with exposure expected to increase as sea levels rise.

Characteristics of the built environment also influence exposure. **Poor-quality housing and properties in disrepair are more exposed** to damage from extreme weather events, while areas with limited access to green space may experience higher exposure to heat-related impacts. In **rural parts of the Vale**, limited public transport and service accessibility can increase exposure by constraining evacuation, response and adaptation options during extreme weather.

The Climate Just Enhanced Exposure Index Map (2022)¹ highlights areas of flood exposure across the Vale by combining indicators such as:

- **built-up area**, homes without gardens,
- the availability of nearby **public green space**,
- and the proportion of households living in **caravans or temporary structures**.

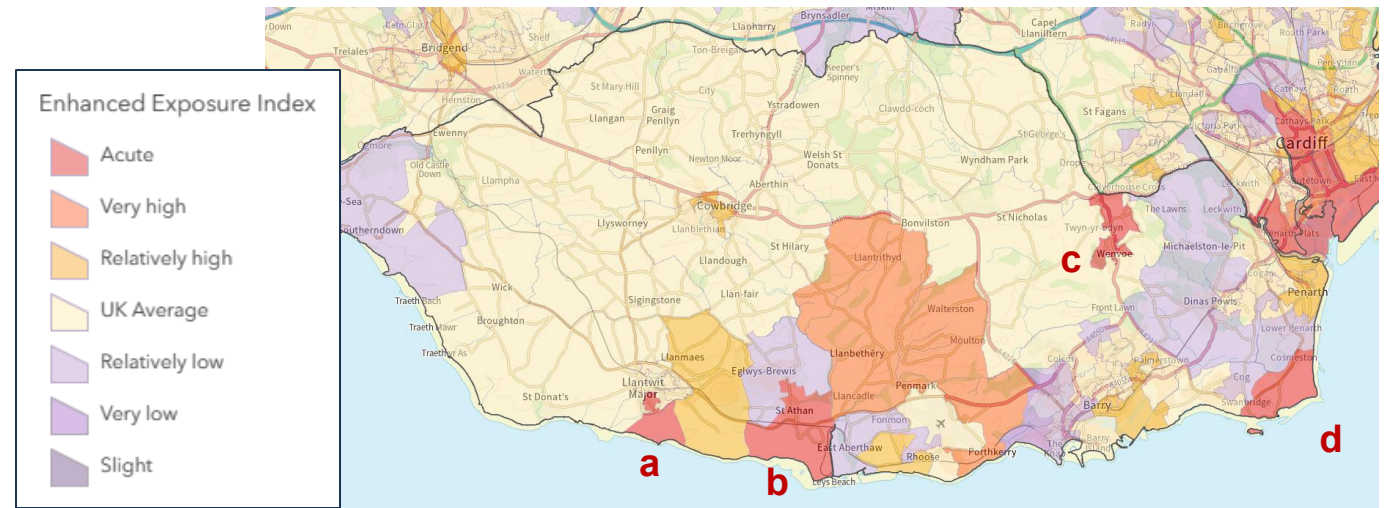
Mapped areas with acute exposure include **Llantwit Major (a)**, **St. Athan (b)**, **Wenvoe (c)**, **Cosmeston** and **Swanbridge (d)**.

Vulnerability

Vulnerability reflects **the predisposition that people, property and other assets will experience adverse impacts when exposed to climate hazards**. It is influenced by factors such as demographics, health, socio-economic conditions and the capacity of individuals and places to adapt and respond.

In the Vale, vulnerability varies across communities. The Welsh Index of Multiple Deprivation (WIMD) 2025, shows an **increase** in the number of communities in the Vale falling within the 10% most deprived areas in Wales. An **ageing population** in parts of the **Western Vale**² increases sensitivity to heatwaves (H1) and risks associated with isolation (e.g., flooding). At the same time, some deprived areas of Barry experience higher vulnerability due to lower incomes, poorer health outcomes and reduced adaptive capacity.

Limited access to green space, essential services and community infrastructure further compounds vulnerability, particularly during periods of extreme heat and other climate-related events.



1. [The Climate Just tool](#)¹ enhanced flood exposure index contains public sector information licensed under the [Open Government Licence v3.0](#)
2. [Vale of Glamorgan – PSB Well-being Plan](#)

Step 3 – Future Climate Projections and Hazards

This step focuses on understanding how the climate is **expected to change in the future** and what this means for the Vale of Glamorgan. It:

- Draws on **UK Climate Projections (UKCP18)** and other relevant evidence to identify future climate hazards affecting the Vale;
- Considers how the **frequency, intensity and spatial extent** of hazards such as flooding, coastal erosion, heatwaves, drought and storms may change over time;

Climate change projections in the Vale

1. [CCC Explainer for preparing for 2°C rise and assessing for 4°C rise](#)
2. [Local Authority Climate Report | Vale of Glamorgan | Report Builder for ArcGIS](#)
3. [UKCP18 Representative Concentration Pathways Guidance](#)
4. [Sea Level Rise - Projections \(Local Authority\) v1 | The Met Office climate data portal](#)

The Vale is already experiencing **more frequent heatwaves, flooding, wildfires, and storms** - impacts that climate change is expected to intensify. Global Warming Levels (GWL) are a simple way to represent climate change at the global scale, which then drives local changes in the Vale. GWL are relative to the pre-industrial baseline (1850-1900). **The current GWL is around +1.4°C**. The UK Climate Change Committee advises preparing for +2°C and assessing risks for +4°C¹. Preparing means taking concrete, planned, and often immediate actions. Assessing for +4°C means considering the worst-case in the longer term.

Table 1. Temperature and precipitation climate projections across the Vale for 2°C and 4°C Global Warming Level (GWL) compared to a baseline of 1981-2000. The Vale is expected to see an increase in hotter, drier summers and warmer, wetter winters. In each row there is a central projection (the Median) and an uncertainty range (the Lower and Upper values are the 10th and 90th percentiles). Source: Met Office²

	Baseline (0.62°C GWL) 1981 – 2000	2°C GWL Prepare	4°C GWL Assess risks
Annual Average Temperature	10.3°C [10.3 to 10.3]	+1.5°C [+1.2 to +1.8]	+3.2°C [+2.8 to +3.7]
Summer Average Temperature	15.9°C [15.9 to 15.9]	+2.0°C [+1.4 to +2.5]	+4.1°C [+3.5 to +5.0]
Summer Maximum Temperature	28.4°C [28.0 to 28.8]	+3.3°C [+2.1 to +4.5]	+6.9°C [+5.8 to +9.1]
Winter Average Temperature	5.1°C [5.1 to 5.1]	+1.3°C [+0.5 to +1.6]	+2.6°C [+1.8 to +3.2]
Winter Minimum Temperature	-6.1°C [-6.5 to -5.8]	+1.8°C [+0.6 to +3.1]	+3.5°C [+2.8 to +4.2]
Summer Precipitation Rate	2.5 mm/day [2.49 to 2.50]	-13% [-25 to -5]	-33% [-51 to -26]
Winter Precipitation Rate	3.6 mm/day [3.54 to 3.58]	+9% [+3 to +17]	+26% [+20 to +35]

The timing and likelihood of these levels being reached are determined by Greenhouse Gas (GHG) emissions and climate sensitivity – **it's possible that +2°C is reached around 2050 and +4°C by the end of the century**.

Table 1 outlines projected changes in temperature and precipitation across the Vale for a baseline period (1981-2000) and +2°C and +4°C².

Projections associated with GWLs are based on climate models and scenarios of GHG emissions – these scenarios are referred to as Representative Concentration Pathways (RCP) or Shared Socioeconomic Pathway (SSPs). Sometimes climate projections are only available for these RCPs and SSPs for future time periods.

Table 2 shows sea level rise projections based on RCP4.5 (~+2.4 °C GWL in 2100³) and RCP 8.5 (~+4.3 °C GWL in 2100³) compared to the 1981–2000 baseline.

Table 2. Sea level rise climate projections along the coast of the Vale for the 2030s, 2050s and 2080s compared to a baseline of 1981-2000. In each case there is a central projection (the Median) and an uncertainty range (the Lower and Upper values are the 5th and 95th percentiles). Source: Met Office²

	Baseline (1981 – 2000)	2030s	2050s	2080s
Sea Level Rise RCP4.5	0cm	+17cm [+13 to +24]	+28cm [+20 to +40]	+46cm [+31 to +68]
Sea Level Rise RCP8.5	0cm	+19cm [+14 to +26]	+34cm [+24 to +46]	+62cm [+42 to +89]

Climate change in the Vale

1. [UK's Climate Risk Indicators Portal](#)
2. [Intergovernmental Panel on Climate Change's Special Report, 2018 - FAQ Chapter 1 — Global Warming of 1.5 °C](#)
3. [Flood Consequence Assessments: Climate Change](#)

More information on Current & Future Flooding within the Vale can be found in [Appendix 3](#).

The indicators below show potential changes in acute and chronic climate hazards under **+2°C and +4°C GWL** for the Vale compared to a baseline of **+1°C GWL** (which represents the recent past i.e. 2001-2020). The data was compiled using the UK's Climate Risk Indicators portal¹ except for the expected changes in flood risk – both from rivers and surface water due to heavy flooding. In this instance, NRW uplifts have been transposed into equivalent GWLs³.

Rainfall and River Changes¹

Change to extreme rainfall intensity
(Compared to a 1961 – 1990 baseline)

	+2°C	+4°C
% Change	+20	+40

Change to peak river flow (1961 – 90 baseline)

	+2°C	+4°C
% Change	+20	+>40

Increased river flow and heavy rainfall will impact communities and infrastructure that are prone to flooding

Crop Growing Season

Growing Season Length
Length between start and end of growing season.

	+1°C	+2°C	+4°C
Number of Days	273.4	288.8	316.7

A longer growing season will impact agricultural production and income.

Water Resource Pressure

Hydrological Drought
Changes in summer rainfall, shown as % change from 1981-2010 baseline.

	+1°C	+2°C	+4°C
% Change	-4.3	-17.5	-42.3

Reduced summer rainfall and higher temperatures will cause water resource pressure for urban and rural communities.

Natural Habitat Pressure

Wildfire Risk
Days of 'very high' Met Office fire index used to issue wildfire warnings for open access land.

	+1°C	+2°C	+4°C
Number of Days	9.9	14.3	33.7

Although not the main driver for the Vale, the **increasing frequency** of fire weather days due to warmer, drier conditions poses an increasing risk to the Vale's habitats and communities and could worsen arson-driven events

Roads and Transport

Road Melt Risk
Number of days each year where temperatures exceed 25°C.

	+1°C	+2°C	+4°C
Number of Days	12.7	24.1	60.7

Increased climate linked disruption will threaten the Vale's transport infrastructure.

Health and Wellbeing

Heatwave
Number of Met Office heatwaves, where there are at least three consecutive days with daily maximum temperatures (events/year).

	+1°C	+2°C	+4°C
Number of Events	1.1	2.0	5.0

Changing climate conditions, such as **increased heatwaves**, can have direct and indirect effects on the physical and mental health of the Vale's residents.

A photograph of a forest path with tall trees and a semi-transparent text box overlaid in the center. The text box contains the title and two paragraphs of text.

Step 4 – Climate Change Risk Prioritisation

This step prioritises the climate risks identified for the Vale based on their significance for local well-being.

Risks are assessed by considering future **hazard, exposure and vulnerability**, with a focus on vulnerable communities, spatial hotspots and critical assets. The process identifies **where the PSB can influence action (i.e. level of agency)**, highlighting risks that require coordinated, cross-partner responses to support future adaptation planning.

Climate Change Risk Assessment

This section presents the Climate Change Risk Assessment for the Vale of Glamorgan, translating national climate risks into locally relevant priorities for PSB partners. The assessment is structured around five themes. Each theme can be explored independently using the links below.

The **44 climate risks** identified in UKCCRA4 have been refined using local data, lived experience and professional judgement to reflect conditions in the Vale. The table to the right contains the number of risks falling in each urgency category.

44 risks assessed for the Vale	
16 need critical action	11 need critical investigation
11 need more action	5 need further investigation
1 needs to sustain current action	0 are watching brief

CCRA themes



1. Health and Wellbeing



2. Built Environment



3. Infrastructure



4. Economy



5. Land, Nature and Food

The initial online workshop captured over 100 examples of past weather and climate impacts across PSB partners and communities in the Vale. These insights formed the baseline evidence used to shape local risk narratives and inform the scoring process.

Building on this, two in-person workshops in December 2025 were used to validate and refine the draft local risk scores. Participants reviewed each national CCRA risk through a Vale-specific lens, testing it against local data, recent weather events, professional judgement and lived experience. This process ensured that the urgency and agency scores genuinely reflected local conditions.

Partners also considered the PSB's capacity and ability to act on each risk, helping to distinguish where immediate action is feasible from where further investigation or collaboration is required.

The refined scores and narratives were then cross-checked against climate projections, existing risk registers and GIS analysis for a balanced, consistent and evidence-led assessment. For more detail, please see [Appendix 4](#).

The PSB recognises that this CCRA is a live document and risk will be reviewed and may be revised over time.

Urgency score definitions

The table below explains how climate risks are prioritised according to the need for additional action over the next five years, as defined within [CCRA4-IA](#). Each risk is categorised into **one of six urgency levels**, based on the assessed magnitude of the risk, the confidence in the supporting evidence and the need for additional action within the next five years¹.

For the national scale risks, “Government action” means steps the Welsh Government may need to take to manage a climate risk. This could include creating new policies, improving existing ones, funding programmes, updating regulations, or gathering more evidence. The urgency score shows how soon and how strongly the Welsh Government needs to act. From a PSB perspective, the urgency score helps identify which risks require immediate joint action, which need better evidence before acting, and the PSB’s level of agency will determine how much influence it can have over outcomes.

Category	Definition
Critical Action Needed	Very High magnitude combined with a strong evidence base : calls for <u>critical, stronger or different Government action</u> .
Critical Investigation	Very High magnitude combined with poor evidence base : calls for <u>Government to prioritise action to fill significant evidence gaps</u> . In many cases, <u>more action is also needed on adaptation to accompany the Critical Investigation</u> .
More Action Needed	High / Medium magnitude combined with High / Medium confidence in the evidence base : calls for <u>new, stronger or different Government action</u> .
Further Investigation	Low confidence in the evidence base such that <u>more evidence is required to assess the need for additional action</u> .
Watching Brief	Low magnitude coupled with Low confidence in the evidence base means that <u>these areas should be kept under review such that further action can be taken if necessary</u> .
Sustain Current Action	Low magnitude coupled with a High / Medium confidence in the evidence base . <u>Current or planned levels of activity are appropriate</u>

Agency score definitions

The table below sets out the criteria used to assess **agency** for each climate risk, **defined as the capacity of the PSB and partners to manage or respond to that risk**. The categories have been defined by the JBA team, drawing on professional judgement and expertise. Agency is assessed across four dimensions: **finance, staff capacity, evidence, and readiness/governance**. Scores range from Very High Agency to Very Low Agency, reflecting decreasing levels of existing capacity and readiness. Higher agency scores indicate risks that are already well managed, while lower scores highlight areas where capacity is limited, and additional action, investment or coordination is required. The agency score is therefore used to help **prioritise risks where intervention is most needed**. Agency also reflects reliance on partners and community capacity, including Town and Community Councils (TCCs), charities, voluntary/community groups, social enterprises and cooperatives

Agency Level	Finance	Staff	Evidence	Readiness / Governance	Overall Interpretation
Very High Agency	Sustained funding secured or embedded in existing budgets.	Dedicated staff or teams with appropriate skills and clear ownership.	Robust, up-to-date evidence and monitoring in place.	Risk fully embedded in strategies, plans and decision-making; actions already underway.	The PSB is well-positioned to manage the risk, with clear ownership, strong evidence and established actions already in place. Focus should be on ongoing delivery, monitoring and continual improvement.
High Agency	Some funding available, though not guaranteed long-term.	Relevant expertise exists but capacity may be stretched or shared.	Good evidence base, with some gaps or uncertainties.	Risk recognised in plans or strategies, with partial or uneven implementation.	The PSB has strong, but not complete, capacity to respond. Actions can be taken with existing structures, though targeted improvements in evidence, funding or coordination would enhance resilience.
Moderate Agency	Limited or short-term funding; reliance on external or competitive funding.	Skills exist but are limited, fragmented or reliant on individuals.	Some relevant evidence available, but incomplete, outdated or not decision-ready.	Awareness of risk exists but limited translation into concrete actions.	Some ability to act exists, but gaps in resources, evidence or governance constrain progress. Additional support, coordination or investment would be needed to meaningfully reduce the risk.
Low Agency	No dedicated funding; significant financial barriers to action.	Insufficient staff capacity and/or lack of specialist expertise.	Weak evidence base; high uncertainty limits decision-making.	Risk recognised but not embedded in policy, planning or operations.	The PSB has only limited levers to manage the risk. Progress is possible but depends on overcoming major constraints in funding, staffing or evidence, and often requires coordination beyond the PSB.
Very Low Agency	No funding identified and no clear route to securing it.	No clear ownership or relevant expertise.	Very limited or no relevant evidence available.	Risk not yet acknowledged in strategies, plans or governance structures.	Limited capacity to influence the risk; significant foundational work is required before meaningful action can be taken. External support or national-level intervention is likely to be needed.

1. Health and Wellbeing



- [Cardiff and The Vale of Glamorgan Population Needs Assessment 2022](#)
- [A View of the Vale of Glamorgan - An Assessment of Current and Future Well-being](#)

Climate change presents increasing risks to health and wellbeing across the Vale, with impacts already being felt. **Rising temperatures** increase the risk of heat-related illness and mortality, particularly for older people, young children, and those with existing health conditions. **Flooding, extreme weather, drought, and water scarcity** also pose risks to residents, disrupting households, communities, and access to essential services. Furthermore, these risks also contribute to **mental health impacts**, including anxiety, stress and isolation, particularly where events are recurrent or recovery is prolonged.

These impacts are placing growing pressure on health and social care services through overheating buildings, service disruption and impacts on workforce and volunteers. Addressing these risks offers opportunities in the Vale to improve health outcomes through cleaner air, safer homes, and more resilient services.

Climate Projections ☀️ ↑

With 2°C warming:
On average, the number of Hot Summer Days (> 30°C) could double, with 2 to 6 days per year. The number of heatwaves could also double to 2 a year on average.

With 4°C warming:
On average, the number of Hot Summer Days (> 30°C) could double again, with 10 to 23 days per year. Heatwave events could more than double to 5 events a year.

CCRA4 risk scores for Wales and the Vale

The table below provides an overview of the national and Vale risk scores. More detail for the scoring is provided on the next page.

Risk	Wales <u>Urgency</u>	Vale <u>Urgency</u>	Vale <u>Agency</u>
H1 – Risks to people from heat	Critical action needed	Critical action needed	Moderate Agency
H2 – Risks to people from extreme weather (excluding heat)	More action needed	Critical action needed	High Agency
H3 – Risks from air quality	Critical investigation	Critical investigation	Moderate Agency
H4 – Risks from climate-sensitive infectious diseases	More action needed	Further investigation	High Agency
H5 – Risks to food safety and nutrition	Further investigation	Further investigation	High Agency
H6 – Risks to health and social care delivery	More action needed	Critical action needed	High Agency
H7 – Opportunities for health and wellbeing	Further investigation	More action needed	High Agency

Current Vulnerabilities

- Ageing population is at risk, especially in the Western Vale where 23% of the population were aged 65-84 in 2019¹. Children are particularly sensitive to heat, with greater risks for those in deprived areas due to housing and environmental factors².
- Poorly insulated homes and institutional buildings exacerbate overheating. Including an ageing healthcare estate, with a significant backlog in maintenance and repairs
- Particulate matter (PM2.5) remains a concern, with high concentrations recorded in Barry².
- Health and wellbeing services are already under significant pressure.

Local Risk Narratives

Homeless individuals face health impacts from heat and cold - premature deaths possible
HMPPS, Workshop

I find it hard to concentrate [in school] when it's very hot, but also when I'm soaking wet.
Rhose Youth Club

Over 25°C makes me feel ill... I stay at home and get very lonely.
CF61 Chatty Caffi (Older Residents)

1. Health and Wellbeing



This page summarises the key climate-related health and wellbeing risks and opportunities for the Vale of Glamorgan. Each risk is assessed in terms of **urgency** (the need for action or further investigation) and **agency** (the extent to which local partners can influence outcomes). Insights from PSB partners and local evidence highlight current impacts, while the risk ownership section clarifies roles in managing and responding to these challenges collectively.

Risk	Vale <u>U</u> rgency	Vale <u>A</u> gency
H1 – Risks to people from heat	Critical action is needed as heat-related deaths are projected to rise, vulnerable groups (including care homes, farmers and food supply workers) are at increasing risk, and the ageing population amplifies impacts.	Moderate agency exists, with PSB partners able to influence adaptation through working practices, public spaces, planning policy and staff preparedness, but wider structural change is required.
H2 – Risks to people from extreme weather (excluding heat)	Critical action is needed due to increasing flood and storm risk, growing exposure of communities, mental health impacts from recovery, and uncertainty around potential risk.	High agency is available locally, particularly through infrastructure maintenance, planning policy, communications, and community resilience measures led by the PSB and partners.
H3 – Risks from air quality	Critical investigation is needed as heat and stagnant air worsen air quality, with isolated locations experiencing increased respiratory risks and poor internal air quality.	Moderate agency exists, with opportunities to improve air quality through green infrastructure, planning and collaboration between PSB partners such as NRW and the VoGC.
H4 – Risks from climate-sensitive infectious diseases	Further investigation is required as animal-level diseases are already occurring, with potential for transmission to humans and uncertainty around future human health impacts. Further work is required to understand any near-term risks from vector-borne diseases based on projected changes to the Vale's climate.	High agency is present through coordinated health planning, information sharing and education overseen by PSB, specifically C&V UHB liaising with Public Health Wales.
H5 – Risks to food safety and nutrition	Further investigation is needed due to emerging pressures on food supply chains and availability, while evidence on nutrition impacts remains limited.	High agency exists through education, Shared Regulatory Services and joint council approaches to improve awareness and food safety management.
H6 – Risks to health and social care delivery	Critical action is needed as an ageing population, rural disconnection and pressure on shared hospital provision increase risks to service delivery beyond national levels.	High agency is available locally, with scope to manage pressures through funding, asset use, transport access, business continuity planning, health and social services leadership.
H7 – Opportunities for health and wellbeing	More action is needed to realise opportunities for health and wellbeing, including benefits from longer tourist seasons, green infrastructure and improved environmental quality.	High agency exists locally, with the ability to encourage behaviour change and embed green infrastructure into new developments within the Vale.

Insight from PSB

Cardiff and Vale University Health Board (C&V UHB) Staff Heat Health Survey

880 responses received across multiple sites (some outside of the Vale):

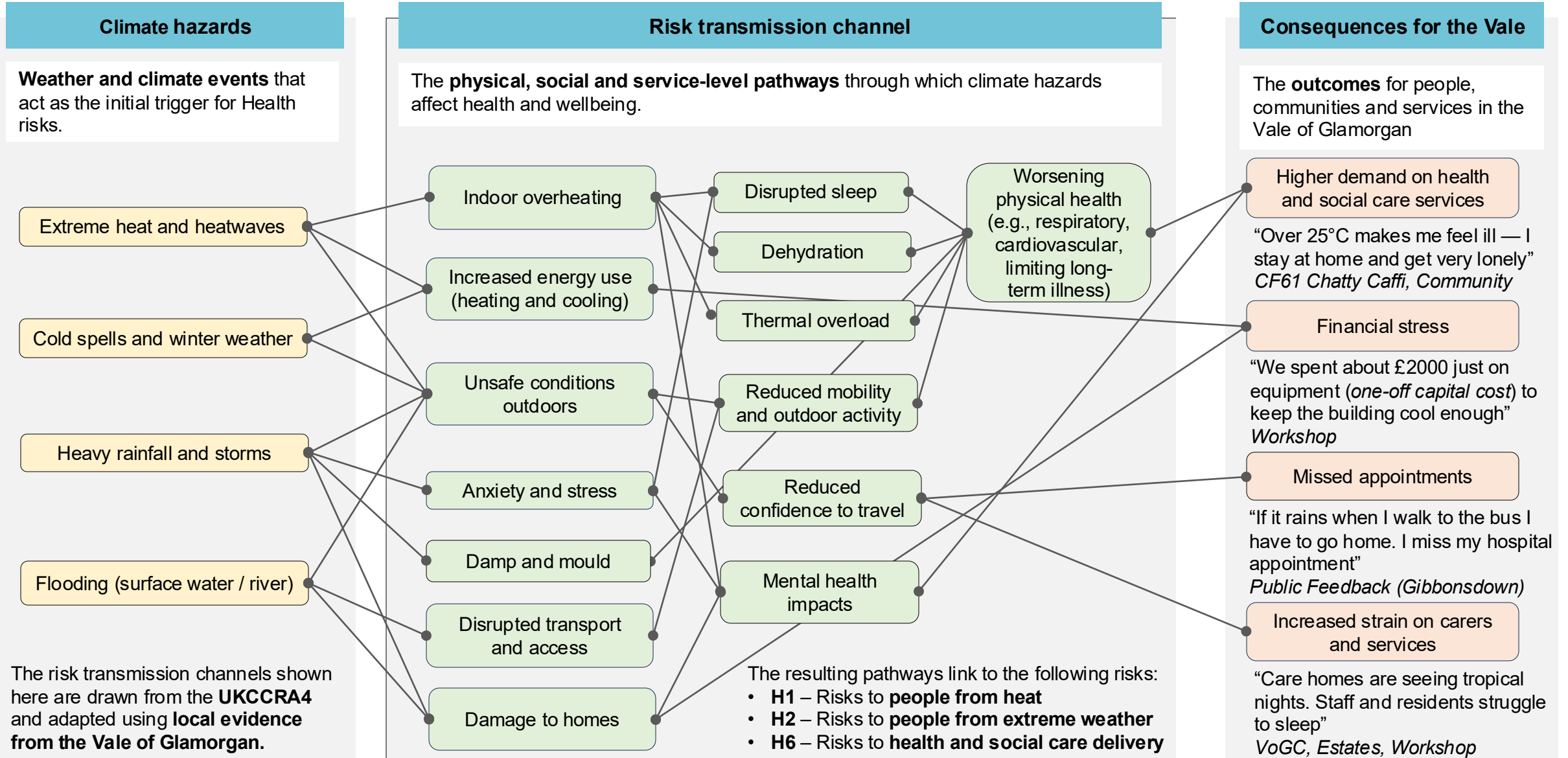
- 81% reported being highly uncomfortable at work during heatwaves.
- 79% reported negative impacts on mood and 80% reported reduced productivity.
- Heatwaves were linked to increased patient footfall, service disruption and longer waiting times due to delayed recovery.

Risk ownership

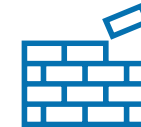
- **PSB** acts as a partnership to drive change, through collaborative decision-making, improving health and wellbeing outcomes
- **C&V UHB** are responsible for health services and the local public health team, supporting emergency planning. Collaboration with VoGC and PSB partners is required.
- **VoGC** is responsible for infrastructure and key local services, including planning and social care.
- **Welsh Government** sets national health, climate adaptation and public health policy, funding frameworks and guidance that shape local heat-health responses and service resilience. Coordination with national delivery bodies (e.g., **Public Health Wales**) supports surveillance, guidance and escalation pathways for climate-sensitive risks.
- **The Voluntary sector (e.g., GVS)** plays a major role in the prevention agenda, helping to keep people healthy in addition to supporting people who are in ill health, supporting local risk ownership.

1. Health and Wellbeing Risk Pathways

Risk transmission channels illustrate how climate hazards lead to real-world impacts. They show the pathways through which weather and climate events affect people's health, wellbeing and access to services, often indirectly and over time



2. Built Environment



Climate change is creating an increased risk for the built environment across the Vale, with impacts already evident. Buildings and public spaces are increasingly vulnerable to **extreme weather events**, including **flooding, heatwaves and storms**. Homes, schools and offices are **overheating** more frequently, while **flooding and storms** continue to damage properties and create safety and access issues.

These impacts highlight the need to strengthen the resilience of the built environment through better design, maintenance and emergency planning. A more climate-resilient built environment will ensure the Vale's built environment remains safe, functional and affordable to operate as conditions continue to change.

Climate Projections

With 2°C warming:

On average, the number of Cooling Degree Days (>22°C, used to estimate how much air-conditioning is needed) could more than triple from 18 days to 48 days a year. Winter precipitation could increase by 9%.

With 4°C warming:

On average, the number of Cooling Degree Days could increase by 25% to 129 days a year. Winter precipitation could increase by another 15%, to be 26% higher than the baseline period of 1981 to 2000.

CCRA4 risk scores for Wales and the Vale

The table below provides an overview of the national and Vale risk scores. More detail for the scoring is provided on the next page.

Risk	Wales Urgency	Vale Urgency	Vale Agency
BE1 – Risks to buildings and communities from heat	Critical action needed	Critical action needed	High Agency
BE2 – Risks to buildings and communities from flooding	Critical action needed	Critical action needed	High Agency
BE3 – Risks to buildings and communities from coastal change	Further investigation	More action needed	High Agency
BE4 – Risks to buildings and communities (excluding heat, flooding, coastal change)	More action needed	More action needed	Moderate Agency
BE5 – Risks to indoor environmental air quality	More action needed	More action needed	Moderate Agency
BE6 – Risks to cultural heritage and landscapes	Critical investigation	Critical investigation	Low Agency
BE7 – Risks to facilities delivering public services (excluding health/social care)	Further investigation	More action needed	Moderate Agency
BE8 – Risks to local resilience planning and emergency service response	Critical investigation	Critical action needed	High Agency
BE9 – Risks and opportunities for households from changing energy demand	More action needed	More action needed	Moderate Agency

Current Vulnerabilities

- Buildings designed to retain heat are now prone to overheating during hot spells, causing discomfort and productivity loss for occupants.
- Increased frequency of flooding and storms is damaging infrastructure, disrupting access, and isolating communities.
- Greater rainfall and blocked drains are leading to damp, mould, and poor indoor air quality in homes and public buildings.
- Coastal erosion and rising sea levels are threatening seafront properties and public spaces.

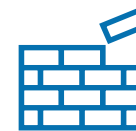
Local Risk Narratives

More weeds, longer growing season, and blocked gullies after leaf fall.
Council Ops, Workshop

“Some offices are hitting 40°C — need better cooling standard.”
VoGC, Workshop

Flood alerts stopped coming — we used to get warnings.
Public Feedback (Barry)

2. Built Environment



This page summarises the key climate-related built environment risks and opportunities for the Vale of Glamorgan. Each risk is assessed in terms of **urgency** (the need for action or further investigation) and **agency** (the extent to which local partners can influence outcomes). Insights from PSB partners and local evidence highlight current impacts, while the risk ownership section clarifies roles in managing and responding to these challenges collectively.

1. [Vale of Glamorgan – Green Infrastructure Strategy](#)

Risk	Vale Urgency	Vale Agency
BE1 – Risks to buildings and communities from heat	Critical action is needed as overheating is already an issue, particularly in older and poor insulated buildings.	High agency is available through planning and development control and PSB collaboration.
BE2 – Risks to buildings and communities from flooding	Critical action is needed as properties are already impacted by flooding, putting homes, community facilities and public infrastructure at risk.	High agency is available through the VoGC role in local drainage, planning and development control. Regional coordination further reduces risk.
BE3 – Risks to buildings and communities from coastal change	More action is needed for more proactive action as coastal communities continue to be affected by accelerating coastal erosion and rising sea levels.	High agency exists through improved evidence and monitoring. Collaboration with the Wales Coastal Monitoring Centre is essential to understand site-specific risks.
BE4 – Risks to buildings and communities (excluding heat, flooding, coastal change)	More action is needed as storm damage, wind-driven rain and poor energy efficiency in homes is increasing. Inefficient housing exacerbates vulnerability.	Moderate agency is available, with awareness-raising and planning policy improvements reducing risk.
BE5 – Risks to indoor environmental air quality	More action is needed, as dampness, humidity extremes, and inadequate ventilation worsen indoor air quality.	Moderate agency exists with updates to local policy requirements relating to ventilation, air circulation and building condition being considered.
BE6 – Risks to cultural heritage and landscapes	Critical investigation is needed, with the Vale’s heritage coast highly valued, yet vulnerable to erosion.	Low agency due to most assets being privately owned. Joint asset management and knowledge-sharing is required.
BE7 – Risks to facilities delivering public services (excluding health/social care)	More action is needed as public buildings are increasingly disrupted by storms and heatwaves. Current regulations lack climate-specific thresholds.	Moderate agency due to constrained funding and limited national regulatory frameworks. This limits the PSBs ability to respond proactively.
BE8 – Risks to local resilience planning and emergency service response	Critical action is needed, with increasing storm severity and flooding increasing the likelihood of simultaneous emergencies occurring at once.	High agency exists locally, with multi-hazard strategies, and joint operational readiness.
BE9 – Risks and opportunities for households from changing energy demand	More action is needed as households face high energy bills and increased cooling demand in warmer months.	Moderate agency with adoption of renewable technology to reduce energy and water use.

Insight from PSB

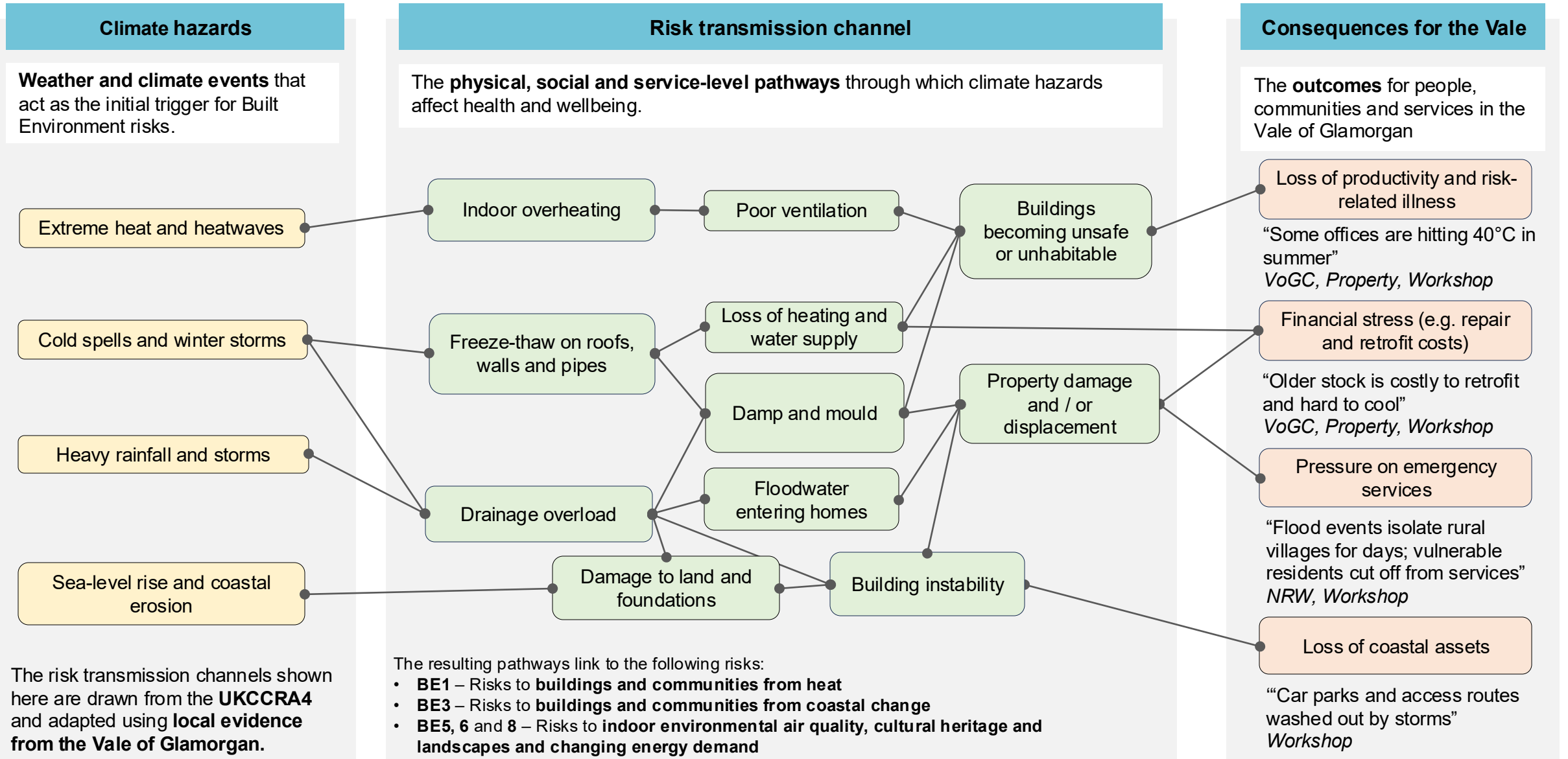
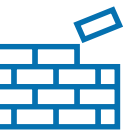
- The **VoGC** has published a **Green Infrastructure Strategy** ¹, a key strategic objective of which is to increase Climate Change Mitigation & Resilience – this requires development to mitigate and adapt to climate change.
- Workshop findings:**
- Older buildings with poor insulation are unable to stay cool during heatwaves or retain warmth during cold spells.
 - Poorly maintained buildings are at a higher risk of damp, mould and structural damage as heavier rainfall and humidity intensify.

Risk ownership

- PSB** partners have a key role through the buildings they operate and their role in emergency planning.
- VoGC** is responsible for local delivery, including planning, building standards, housing services and council-owned assets.
- Education, Public-sector partners and third sector partners (such as the UK Green Building Council)** contribute insights on building use, safety requirements, continuity planning and community-wide implications of built-environment disruption.
- Welsh Government Planning Directorate** sets the national planning, building standards, housing, climate adaptation and funding frameworks that shape how local authorities and public bodies manage built-environment risk

2. Built Environment Risk Pathways

Risk transmission channels describe how climate hazards lead to real-world impacts. They show the pathways through which weather and climate events affect the built environment and access to services, often indirectly and over time





3. Infrastructure

Climate change presents increasing risks to the Vale’s transport, energy, water and digital infrastructure systems, with disruptions already being experienced across the region.

Flooding, storms, high winds, hotter summers and rising sea levels are already being experienced.

Storm events have resulted in major road and rail closures, power cuts, signal failures and access restrictions, particularly in low-lying rural areas where communities can become isolated for extended periods. Flooding and storms disrupt **transport infrastructure**, including **roads, rail and active travel routes (footpaths, cycleways and pavements)**, increasing isolation for vulnerable groups reliant on walking, cycling, mobility aids and pushchairs.



Climate Projections



With 2°C warming:

On average, the Winter Precipitation Rate could increase by 9% relative to the baseline average of 3.6 mm/day (1981-2000)

With 4°C warming:

On average, the Winter Precipitation rate could increase by 26%, almost triple the 2°C projection

CCRA4 risk scores for Wales and the Vale

The table below provides an overview of the national and Vale risk scores. More detail for the scoring is provided on the next page.

Risk	Wales Urgency	Vale Urgency	Vale Agency
11 – Risks to delivery of infrastructure services from interdependencies	Critical action needed	Critical action needed	Moderate Agency
12 – Risks to electricity generation	More action needed	Critical investigation	Moderate Agency
13 – Risks to electricity transmission and distribution systems	More action needed	Further investigation	Moderate Agency
14 – Risks to fuel supply systems	Critical investigation	Critical investigation	High Agency
15 – Risks to road transport systems	Critical investigation	Critical action needed	Moderate Agency
16 – Risks to rail transport systems	More action needed	Critical investigation	High Agency
17 – Risks to aviation, shipping and other transport systems	Critical investigation	More action needed	Moderate Agency
18 – Risks to digital and communications systems	Further investigation	Further investigation	Moderate Agency
19 – Risks to water supply and wastewater systems	More action needed	Critical investigation	High Agency
110 – Risks to waste management systems	Critical investigation	More action needed	High Agency



Current Vulnerabilities

- Flooding and storms disrupt transport, energy, water and communication systems, causing rural areas to be isolated.
- Ageing infrastructure is more vulnerable to damage from extreme weather, leading to higher maintenance costs and service interruptions.
- Blocked drains from increased rainfall, affecting roads, bridges and public utilities.
- Higher electricity demand for cooling during heatwaves.
- Active travel routes are vulnerable to extreme weather events, including exposed walking routes such as the Wales Coast Path.

Local Risk Narratives

River Ely flooding – villages inaccessible; 6–7 vehicles lost
VoGC, Workshop

Storms bring strong winds and heavy rain – property damage and power cuts.
CF61 VoGC, Emergency Planning Workshop

High winds bring trees down and block gullies.
VoGC, Highways, Workshop

3. Infrastructure



This page summarises the key climate-related infrastructure risks and opportunities for the Vale of Glamorgan. Each risk is assessed in terms of **urgency** (the need for action or further investigation) and **agency** (the extent to which local partners can influence outcomes). Insights from PSB partners and local evidence highlight current impacts, while the risk ownership section clarifies roles in managing and responding to these challenges collectively.

Risk	Vale <u>Urgency</u>	Vale <u>Agency</u>
I1 – Risks to delivery of infrastructure services from interdependencies	Critical action is needed. For example, communications and emergency response are critical but vulnerable to disruption from extreme weather events.	Moderate agency exists, with NRW and emergency responders in place, however further investment and coordination is required.
I2 – Risks to electricity generation	Critical investigation is needed if grid capacity continues to increase, preventing further investment and increasing risk of outages.	Moderate agency is available through collective PSB action, local generation, and passive cooling measures, but requires engagement with utility companies.
I3 – Risks to electricity transmission and distribution systems	Further investigation is needed as sustainable options are limited. Business continuity plans and asset protection need strengthening.	Moderate agency exists, with emergency planning procedures in place, however, more investment is required.
I4 – Risks to fuel supply systems	Critical investigation is needed due to risk of disrupted utilities and restricted supplies from restricted transport networks.	High agency is available through resource redistribution and prioritisation during supply interruptions.
I5 – Risks to road transport systems	Critical action is needed as roads are highly vulnerable to flooding, landslips and limited maintenance funding.	Moderate agency exists, with options for remote work and strategic route improvements, but funding and resilience upgrades are needed.
I6 – Risks to rail transport systems	Critical investigation is needed due to the strategic importance of rail in the Vale, with asset health assessments and resilience upgrades required.	High agency is available through emergency planning, with alternatives for disrupted routes possible.
I7 – Risks to aviation, shipping and other transport systems	More action is needed as docks and airports are exposed.	Moderate agency exists, with potential for collaboration with private sector partners to address vulnerabilities.
I8 – Risks to digital and communications systems	Further investigation is needed as high reliance on digital systems increases risk.	Moderate agency is available through improved planning, shared records and risk management.
I9 – Risks to water supply and wastewater systems	Critical investigation is needed as ageing infrastructure and increased flooding threaten water quality and supply. Retrofitting and green infrastructure are needed.	High agency exists with NRW and third sector collaboration, and opportunities for green infrastructure and retrofitting.
I10 – Risks to waste management systems	More action is needed as waste services are vulnerable to cross-boundary disruptions and upstream flood risk.	High agency is available through joint reviews and alternative collection methods. This requires coordination with partners and contractors.

Insight from PSB

The Vale accounts for around 7–8% of all rail journeys in Wales, despite representing only around 4% of the population.

High commuter, tourism and seasonal demand at stations such as Barry Island, Penarth and Rhoose creates demand spikes that increase exposure to climate-related disruption, presenting a strategic risk to connectivity and the local economy.

It has been reported by TfW that the nearby Core Valley Lines (CVL) network is particularly vulnerable to changes in rainfall and heatwaves.

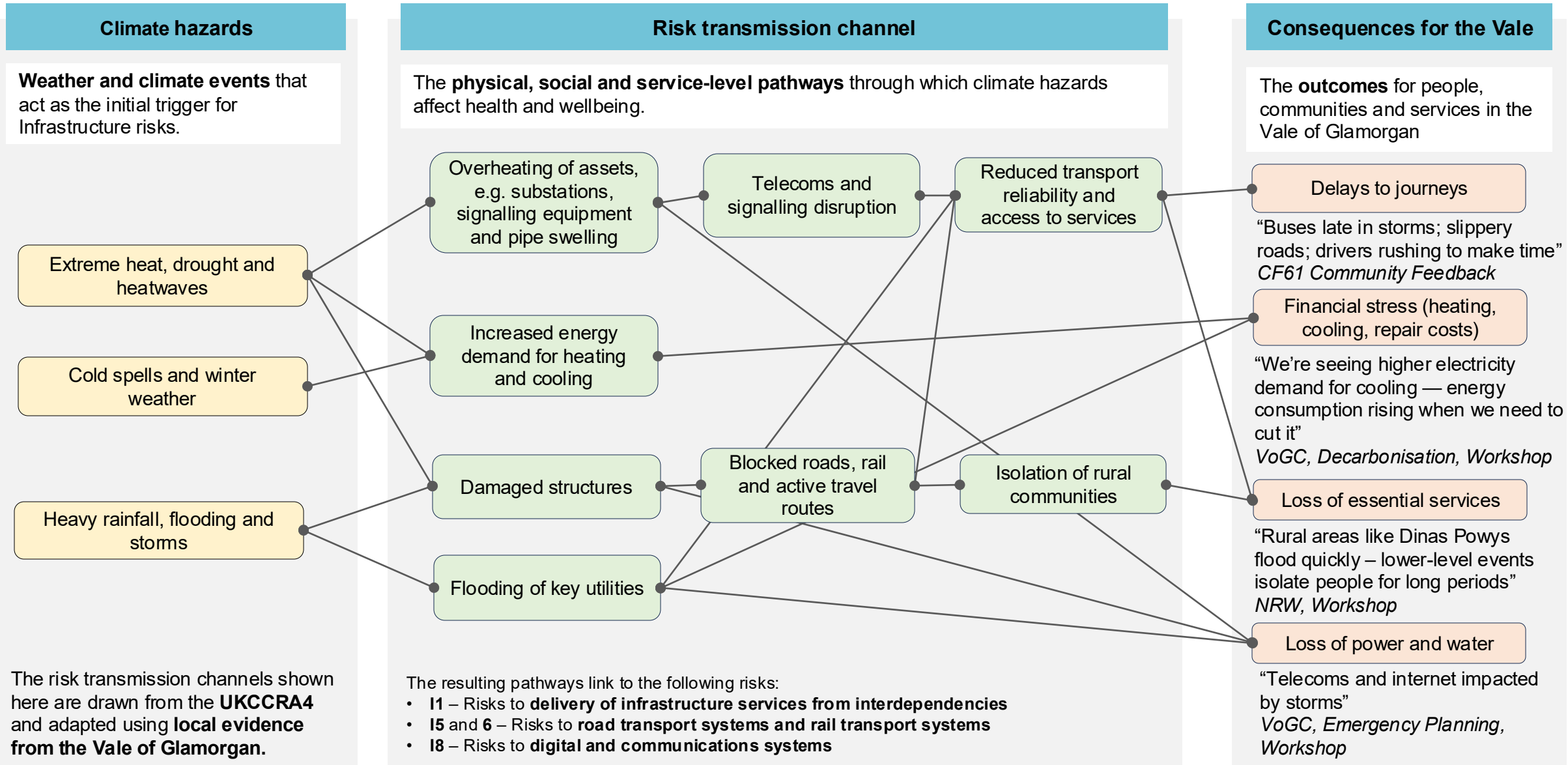
Risk ownership

- The **PSB** have a role in delivering services which support infrastructure in the Vale.
- **VoGC** is responsible for local delivery, including infrastructure planning, maintenance and resilience across transport networks.
- **Transport for Wales (TfW)** work alongside VoGC and emergency services to assess risks to rail and transport infrastructure, planning for disruption and operational risks.
- **The PSB can work with utility companies** ensure continuity of energy, water and electricity supplies, supporting resilience for households, services and the local economy.
- **Welsh Government** responds to independent, evidence-based recommendations on Wales' long term infrastructure needs from the **National Infrastructure Commission for Wales (NICW)**.

3. Infrastructure Risk Pathways

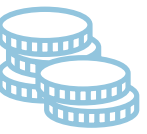


Risk transmission channels describe how climate hazards lead to real-world impacts. They show the pathways through which weather and climate events affect infrastructure and access to services, often indirectly and over time



4. Economy

Climate-related disruptions are placing growing pressure on businesses, communities, households and public services across the Vale. **Increasingly frequent floods, storms and heatwaves** are damaging local infrastructure, interrupting transport and communications, and reducing productivity and business continuity across key sectors. Rising operating costs, supply chain volatility and climate-driven impacts on agriculture are intensifying economic pressures, while overheating workplaces and weather-related service interruptions affect staff wellbeing and service delivery. At the same time, these challenges present opportunities for the Vale to build a more resilient, low-carbon local economy - strengthening local supply chains, increasing investment confidence, supporting innovation in adaptation goods and services, and improving the resilience and regeneration of public assets, businesses and communities.



Climate Projections

With 2°C warming:

On average, the number of Cooling Degree Days (>22°C, used to estimate how much air-conditioning is needed) could more than triple from 18 days to 48 days a year. Winter precipitation could increase by 9% relative to 1981 to 2000.

With 4°C warming:

On average, the number of Cooling Degree Days could increase by 25% to 129 days a year. Winter precipitation could increase 26% higher than the baseline.

CCRA4 risk scores for Wales and the Vale

The table below provides an overview of the national and Vale risk scores. More detail for the scoring is provided on the next page.

Risk	Wales Urgency	Vale Urgency	Vale Agency
E1 – Risks to macroeconomic performance and stability	Critical action needed	Critical action needed	Low Agency
E2 – Risks to domestic and overseas physical assets of UK businesses	Critical action needed	Critical action needed	Moderate Agency
E3 – Risks to supply chains and resource inputs	Critical investigation	Critical investigation	High Agency
E4 – Risks to labour productivity	Critical investigation	Critical investigation	Very Low Agency
E5 – Risks to the financial institutions and financial system	Critical action needed	Critical action needed	Moderate Agency
E6 – Risks to public finances	Critical investigation	Critical investigation	High Agency
E7 – Risks to household finances	Critical investigation	Critical investigation	Very Low Agency
E8 – Opportunities for adaptation goods and services	Critical investigation	Critical action needed	High Agency

Current Vulnerabilities

- Higher operating costs linked to flood damage, wetter autumns, and extreme weather affecting productivity and business continuity.
- Workplaces experiencing overheating (up to 40°C), reducing productivity and increasing health risks for workers.
- Rising energy demand for cooling is increasing financial pressures on businesses and households.
- Flood-prone industrial and commercial areas are becoming unusable, reducing business opportunities.
- Agricultural businesses are particularly vulnerable to extreme weather.

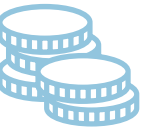
Local Risk Narratives

Catchments like Dinas Powys are prone to flash flooding, which can quickly cut off rural businesses. *VoGC, Workshop*

Extreme wet weather halved crop yields; horticultural businesses lost infrastructure. *Food & Farming, Workshop*

Lack of tree cover at Gibbonsdown splash pad — local business areas overheating. *Tenant Forum Feedback*

4. Economy



This page summarises the key climate-related economy risks and opportunities for the Vale of Glamorgan. Each risk is assessed in terms of **urgency** (the need for action or further investigation) and **agency** (the extent to which local partners can influence outcomes). Insights from PSB partners and local evidence highlight current impacts, while the risk ownership section clarifies roles in managing and responding to these challenges collectively.

Risk	Vale <u>U</u> rgency	Vale <u>A</u> gency
E1 – Risks to macroeconomic performance and stability	Critical action is needed , as rising costs, agricultural pressures and trade vulnerabilities risk worsening economic stability, with local businesses having limited resilience to climate-driven disruption.	Low agency , as levers sit nationally; the PSB can support local businesses and advocate for resilience, but influence over national systems is limited.
E2 – Risks to domestic and overseas physical assets of UK businesses	Critical action is needed , due to exposure to global supply chains and the need for resilient infrastructure supporting essential services; disruptions threaten reliability of supply.	Moderate agency , with potential to improve resilience through shared procurement, PSB coordination and strengthened local continuity arrangements.
E3 – Risks to supply chains and resource inputs	Critical investigation is needed , as the Vale depends on overseas and UK-wide supply chains, with limited local capacity increasing vulnerability.	High agency , through collaboration between the PSB, in particular VoGC and private partners and insurers to strengthen local procurement and storage resilience.
E4 – Risks to labour productivity	Critical investigation is needed , as rising heat, equipment failure, stress and digital disruption reduce productivity across sectors.	Very low agency , as many productivity drivers lie outside local control, though some influence exists via better collaboration work across partners, operational planning and workforce support
E5 – Risks to the financial institutions and financial system	Critical action is needed , due to regional and national exposure to climate impacts, rising costs and public underestimation of financial risks.	Moderate agency , as the PSB can collectively advocate for risk-spreading, awareness and influence investment decisions following national-level governance.
E6 – Risks to public finances	Critical investigation is needed , as climate impacts increase public spending demands and funding complexities challenge long-term resilience.	High agency , with VoGC able to use local data, plan for resilience and strengthen cross-service planning, though many fiscal levers remain national.
E7 – Risks to household finances	Critical investigation is needed , as climate-driven costs increase household vulnerability and widen inequalities	Very low agency , the PSB can improve communication, signposting and support for essential-service planning.
E8 – Opportunities for adaptation goods and services	Critical action is needed to capture opportunities for adaptation goods and services, where PSB action can stimulate local resilience.	High agency , through economic appraisal, local strategic planning and supporting integrated approaches to net zero and resilience.

Insight from PSB

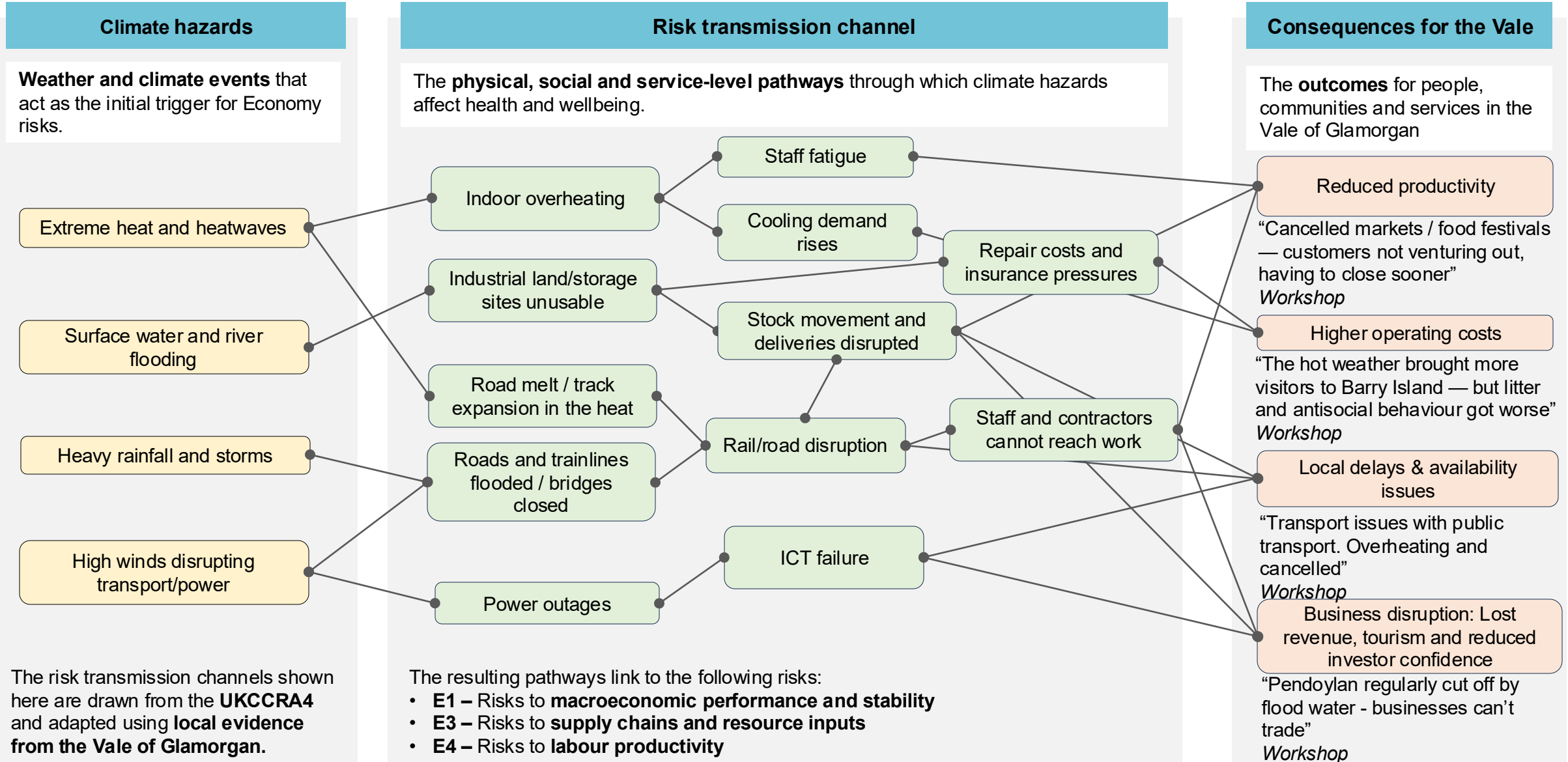
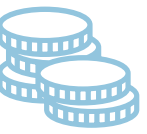
- The 2024–25 drought caused sharp economic losses such as severely reduced grass growth, reducing silage production. Horticultural crop failures forced growers to abandon supply contracts, and long-term soil moisture deficits threatened future productivity.
- A local public house in Peterston-super-Ely is regularly flooded which has a huge cost implication. In addition, industrial land across the Vale is becoming unusable due to repeated flooding.

Risk ownership

- The **PSB** provides support to economic well-being in the Vale, including to employers, purchasers and service providers. Also, the PSB can collaborate with One Voice Wales and nearby councils, such as Cardiff and Bridgend, for regional working.
- **VoGC** is responsible for local delivery, including business support, infrastructure, and financial planning to strengthen local economic resilience.
- **Welsh Government** influences economic resilience through national policy, regulation and funding decisions, for example, the Regional Investment in Wales framework.
- **Glamorgan Voluntary Services (GVS)** represents volunteers, community and voluntary sector organisations that play a critical role in providing advice and support during periods of disruption e.g. around food insecurity.

4. Economy Risk Pathways

Risk transmission channels describe how climate hazards lead to real-world impacts. They show the pathways through which weather and climate events affect the economy, often indirectly and over time.



5. Land, Nature and Food



Climate change is already affecting the Vale's natural environment, placing pressure on terrestrial, freshwater, marine and agricultural systems. Soil and habitat degradation, poor freshwater conditions and limited marine evidence reduce the resilience of ecosystems, while **hotter, drier summers, wetter winters and sea-level rise** intensify risks such as erosion, flooding, wildfire and disrupted food production.

These impacts create growing challenges for land managers, farmers and environmental partners, with implications for food security and natural carbon stores. Tackling these risks offers opportunities to work with nature, restore ecosystems, improve soil health and strengthen nature-based solutions, supporting more resilient landscapes and communities.

1. [Local Authority Climate Report | Vale of Glamorgan | Report Builder for ArcGIS](#)

Climate Projections

With 2°C warming:

On average, summer precipitation could decrease by 13% relative to the 1981 to 2000 baseline of 2.5mm/day, whilst winter precipitation could increase by 9%.

With 4°C warming:

On average, summer precipitation could decrease by 33% relative to the 1981 to 2000 baseline of 2.5mm/day, whilst winter precipitation could increase by 26% and there is likely to be more frequent named storms¹.

CCRA4 risk scores for Wales and the Vale The table below provides an overview of the national and Vale risk scores. More detail for the scoring is provided on the next page.

Risk	Wales <u>U</u> rgency	Vale <u>U</u> rgency	Vale <u>A</u> gency
N1 – Risks to terrestrial and coastal ecosystems	More action needed	Critical action needed	Moderate Agency
N2 – Risks to freshwater ecosystems	More action needed	Critical action needed	Moderate Agency
N3 – Risks to marine ecosystems	More action needed	Further investigation	Low Agency
N4 – Risks to soil ecosystems	Critical investigation	Critical investigation	Low Agency
N5 – Risks to natural carbon stores and sequestration	More action needed	More action needed	Moderate Agency
N6 – Risks to agriculture	More action needed	Critical action needed	Low Agency
N7 – Risks to fisheries and aquaculture	More action needed	More action needed	Low Agency
N8 – Risks to forestry	More action needed	Sustain current action	High Agency
N9 – Opportunities for agriculture, forestry and fisheries	Further investigation	More action needed	High Agency
N10 – Risks to food security	Critical action needed	Critical action needed	Low Agency

Current Vulnerabilities

- Agriculture is highly exposed to extreme weather, reduced grass and crop yields, and fragile farm-to-market supply chains.
- Climate impacts disrupting food production and supply, contributing to rising vulnerability in local food security.
- Declining condition of terrestrial and coastal habitats, with fragmented ecosystems and limited connectivity, reducing climate resilience.
- Significant evidence gaps in marine ecosystem data, with outdated surveys and uncertainty around impacts on rocky coastal habitats.

Local Risk Narratives

Erosion isn't kilometres, it's tens of metres - but critical for the coast path.
VoGC, Workshop

Limiting time annually for operations due to rainfall – sediment runoff and soil damage.
NRW Forestry Staff

Blossom came early; no bees to pollinate – fewer apples this year.
CF61 Chatty Caffi (Older Residents)

5. Land, Nature and Food



This page summarises the key climate-related land, nature and food risks and opportunities for the Vale of Glamorgan. Each risk is assessed in terms of **urgency** (the need for action or further investigation) and **agency** (the extent to which local partners can influence outcomes). Insights from PSB partners and local evidence highlight current impacts, while the risk ownership section clarifies roles in managing and responding to these challenges collectively.

Risk	Vale <u>U</u> rgency	Vale <u>A</u> gency
N1 – Risks to terrestrial and coastal ecosystems	Critical action is needed due to strong evidence of ecosystem decline, the need to share evidence, and the importance of mitigating change.	Moderate agency exists , with PSB partners, NRW and LNP able to improve connectivity and nature-based management, though agricultural land lies mostly outside LA control.
N2 – Risks to freshwater ecosystems	Critical action is needed , reflecting poor ecosystem condition, strong evidence of decline and gaps in water-quality evidence.	Moderate agency , with NRW leading catchment work; the PSB can better link land management, runoff and monitoring.
N3 – Risks to marine ecosystems	Further investigation is required, as major evidence gaps remain and impacts on local rocky coastal habitats are poorly understood.	Low agency , as marine evidence is outdated and limited; NRW leads but local influence is restricted by scale and lack of data.
N4 – Risks to soil ecosystems	Critical investigation is needed, with soil health strongly linked to resilience and more evidence required to guide action.	Low agency , requiring collaboration with farmers, NRW, Welsh Government and third sector partners; Vale can support studies and pollution attenuation.
N5 – Risks to natural carbon stores and sequestration	More action is needed , due to the need for better information and understanding of sequestration potential.	Moderate agency , with opportunities through tree strategy, woodland management, and LNP collaboration.
N6 – Risks to agriculture	Critical action is needed , as climate impacts and supply chain dependencies significantly affect food systems.	Low agency , with agriculture under Welsh Government; the PSB can lobby SFS reforms and influence landowner practices.
N7 – Risks to fisheries and aquaculture	More action is needed , to understand future risks and opportunities, despite no current fisheries.	Low agency , as fisheries are not locally significant and Wales lacks climate-resilient fisheries policy.
N8 – Risks to forestry	Sustain current action , as forestry assets in the Vale are limited and risks are assessed as lower.	High agency , with NRW and local partners able to undertake targeted tree planting and fire-risk management.
N9 – Opportunities for agriculture, forestry and fisheries	More action is needed to realise new opportunities such as new crops, fisheries potential and ecological networks.	High agency , with VoGC supporting local purchasing, resilience networks, and advisory roles.
N10 – Risks to food security	Critical action is needed , due to heavy dependency on external supply chains and vulnerabilities in rural communities.	Low agency , as global and national factors dominate, PSB partners can promote local food networks and strengthen strategy work.

Insight from PSB

- Farmers experienced major losses in 2023–24 due to waterlogged land preventing planting, severe crop failures and reduced yields, early housing of livestock with higher feed costs, deteriorating animal health, and widespread damage to farm infrastructure.
- There are major gaps in local evidence on freshwater quality, marine habitats, soil condition and carbon sequestration, which limits the PSB’s ability to fully assess ecosystem vulnerability and target the most effective nature-based actions.

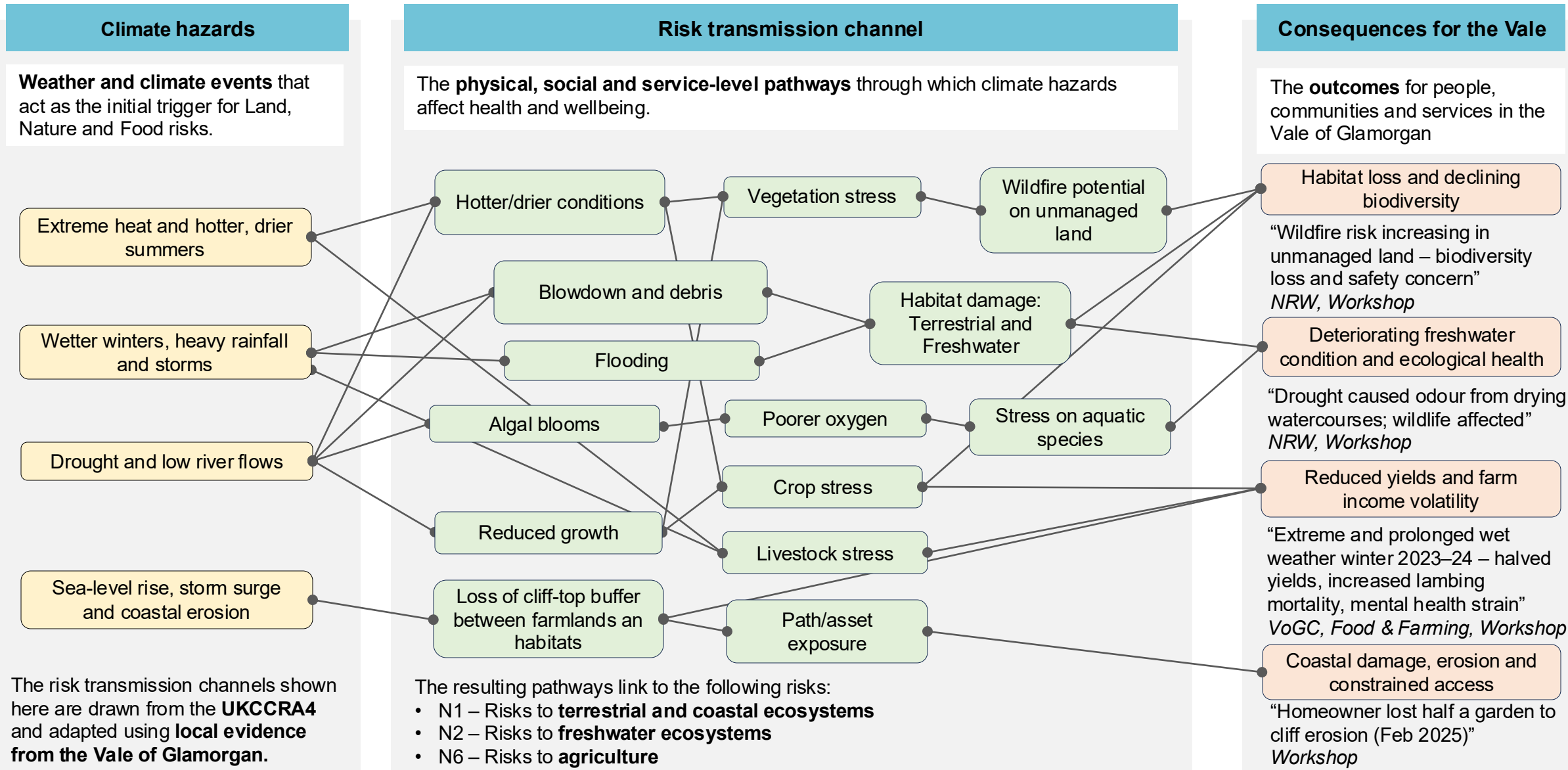
Risk ownership

- **NRW** pursues sustainable management of natural resources, including ecosystem resilience, across the Vale.
- **VoGC** delivers local nature, land management and food system actions through planning, on-the-ground work, and working with services providers such as Dŵr Cymru Welsh Water.
- **Local Nature Partnership (LNP)** supports habitat connectivity and biodiversity actions with landowners and communities.
- **Welsh Government Climate Change and Rural Affairs** sets national policy for agriculture, forestry and land-based climate action, including the Sustainable Farming Scheme (SFS).
- **Farmers and landowners** play a key role in improving soil health, reducing pollution and adapting land management to climate impacts.
- **Voluntary organisations** are often relied on to support stewardship, evidence collection and community engagement.

5. Land, Nature and Food Risk Pathways



Risk transmission channels describe how climate hazards lead to real-world impacts. They show the pathways through which weather and climate events affects land, nature and food, often indirectly and over time.



A scenic view of a rocky beach and harbor from inside a wooden pier structure. The foreground is filled with dark, wet rocks. In the middle ground, a wide, light-colored pebble beach stretches across the frame. Several people are walking on the beach. In the background, a harbor with several boats and a red flag is visible, along with a green hillside and a cloudy sky.

Step 5 – Conclusions and Next Steps

With the risks and priorities clearly identified, the focus of this section is on consolidating the findings and articulating clear next steps for the PSB.

This includes identifying triggers for refreshing the CCRA, suggesting how the CCRA should be monitored and outlining potential recommendations for the PSB to take forward through collaborative actions.



Key Findings

This assessment has confirmed that climate change is already impacting local communities and services across the Vale, with future risks set to intensify. The risk register is only available upon request from the PSB (see [Appendix 4](#)).

Changing Climate in the Vale:

Analysis of UK Climate Projections shows the Vale will face hotter, drier summers and warmer, wetter winters along with more frequent extreme events. By the 2050s, summer heatwaves will be more common and intense, while winter rainfall extremes increase flood risks.

These trends are not abstract – the Vale has already experienced record-breaking heatwaves, flooding and storms in recent years. Together, this paints a picture of increasing pressure on the PSB’s operations and services in future decades.

Stakeholder & Community Insights

The risk assessment was enriched by a range of engagement – including workshops with PSB partners and outreach activities to gather community responses.

This process captured real-world impacts and concerns which ground the projections in lived experience:

- **Older residents reported struggling with heat and poor ventilation** at home, leading to health and isolation issues.
- **Flood-prone roads and bridges** have repeatedly cut off residents (including schoolchildren) during heavy rains.
- **Front-line staff recounted service disruptions** – from wildfires and flooding taxing emergency services to heatwaves causing hospital admissions surges and staff heatstroke.
- Transport operators described **weather-related failures** (rail lines buckling in heat, power outages in storms) that had knock-on effects across communities
- Multiple PSB partners –VoGC, C&V UHB, NRW, Transport for Wales, etc. – noted **infrastructure vulnerabilities** as a **major concern** for service delivery.

- Prolonged wet and then hot, dry conditions have created **unprecedented impacts across the Vale’s rural economy**, affecting livestock welfare, crop production and farm incomes.

These on-the-ground insights confirm that climate hazards are already impacting well-being in the Vale, and they helped pinpoint which risks most need attention.

Priority Risks Identified:

The CCRA examined 44 climate-related risks for the Vale and found that 16 require critical action, of which 13 score both Critical Action Needed and moderate-or-higher PSB agency. Many of these high-priority risks relate to **extreme heat, flooding, coastal erosion, infrastructure disruption, and health impacts** – hazards that are already being felt locally and are expected to worsen.

Crucially, **vulnerable and disadvantaged groups are most at risk** and least able to adapt, meaning climate change could widen existing inequalities. This urgent risk profile underlines the need for coordinated adaptation across all PSB partners.

Next Steps for the PSB – From Assessment to Action:

With the risks and priorities clearly identified, the Vale of Glamorgan PSB’s focus now shifts to implementing adaptive responses. The [NRW PSB CCRA framework](#) and best practices from other PSBs suggest a structured path forward. **Please see page 50 (Appendix 5) for more information on iteration and refreshing the CCRA.**

<p>Assign Clear Risk Ownership:</p>	<p>The PSB should translate findings into accountability by formalising “risk owners” for each high-priority risk. In practice, this means agreeing to multi-agency collaboration on developing actions for issues like flooding, extreme heat impacts and infrastructure resilience</p> <ul style="list-style-type: none"> • Clear ownership will ensure that each priority risk has champions driving it forward, monitoring progress and reporting back to the PSB. • This step fosters accountability and keeps climate risks visible within each organisation’s agenda.
<p>Integrate Climate Risks into Policy and Planning:</p>	<p>Rather than create a strategy straight away, the PSB should embed the CCRA’s findings into existing plans and decision-making processes. This means reviewing and aligning the Well-being Plan, service delivery plans, and partner organisations’ strategies with the identified climate risks.</p>
<p>Develop a Collaborative Adaptation Plan:</p>	<p>The NRW framework notes that creating a local adaptation strategy is the logical next step after a CCRA.</p> <ul style="list-style-type: none"> • The PSB’s adaptation plan would translate priority risks into concrete measures over the short, medium, and long term. • Crucially, this must be a collaborative plan – leveraging the combined resources and mandates of all partners. • PSB partners should seek to develop an adaptation framework by reviewing the risks and try to incorporate different approaches such as community-based adaptation, nature-based solutions and transformational systems approaches.
<p>Close Knowledge Gaps & Use Evidence for Action:</p>	<p>The CCRA has highlighted areas where a more detailed assessment would help drive action (urgency score as ‘Critical Investigation’). The next step is to conduct targeted research or mapping for complex, high-stakes risks. This could mean stress testing of current systems for managing each major risk: essentially a gap analysis asking whether our existing flood schemes/health programs/infrastructure plans are enough for future climate conditions, or do we need new measures?.</p>
<p>Community Engagement and Involvement:</p>	<p>A core principle of the Well-being of Future Generations Act is community involvement, and the Vale’s PSB CCRA process has begun this through a limited number of surveys and workshops. A next step for the PSB should be to deepen this by establishing a two-way dialogue with communities around climate resilience:</p> <ul style="list-style-type: none"> • The PSB should empower communities to shape and participate in adaptation solutions. This could include working with particularly affected groups to co-design local interventions. • By making adaptation a shared mission with residents, the PSB can enhance the legitimacy and effectiveness of its actions.
<p>Leverage Funding and Collaboration Opportunities: Translating plans into action will require financing.</p>	<ul style="list-style-type: none"> • The PSB should explore diverse funding sources – Welsh Government grants, UK climate adaptation funds, city-region deals or pooling budgets among partners for joint projects. • Additionally, collaboration beyond the PSB will amplify resources – the Vale can learn from and team up with other regions doing CCRA follow-up (like Cwm Taf Morgannwg, Cardiff City Region or Gwent), possibly pursuing regional projects when risks overlap or there is common cross-border remit for PSB partners (e.g., South Wales Fire and Rescue Service, South Wales Police). • The PSB can also look at integrating climate adaptation into existing funding streams: for instance, ensuring that regeneration or infrastructure budgets explicitly include climate resilience measures (so that whenever a road is resurfaced, drainage is improved for heavier rainfall, etc.).

Recommendations:

Whilst adaptation options have not been explicitly considered through this assessment, the following set of recommendations are areas that the PSB could explore through collaborative action as part of adaptation planning, across each of the CCRA themes. The PSB should continue to examine whether existing local policy, practice and resource allocation will be enough to adapt to climate change in the short, medium and long term.

1. Health and Wellbeing



- **Strengthen multi-agency health resilience plans:** The PSB should ensure partners (such as the C&V UHB, VoG council social services, GVS, emergency responders) and the Local Resilience Forum (LRF) have joint Heatwave and Cold Weather Action Plans to protect vulnerable groups (e.g. older people, those with chronic illnesses, the homeless) during extreme temperatures. The PSB should work to identify and support vulnerable groups, reflecting the findings of the C&V UHB Staff Heat Survey.
- **Adapt healthcare and support services:** PSB partners should evaluate and retrofit key health facilities and care homes for climate resilience. This could include installing improved ventilation or cooling in hospitals and care homes (staff noted ward and office temperatures reaching the high 30s °C during heatwaves. Frontline staff have reported difficulty delivering services safely during heatwaves, so adaptation measures (like shading and adjusted work protocols in heat) should be considered.
- **Community outreach and social support:** Build on the Vale's existing community networks to support isolated or vulnerable residents in coping with climate impacts. For example, the Glamorgan Voluntary Services (GVS) could expand programmes where volunteers or community groups check on older adults during extreme weather (heat or cold).
- **Embed climate in well-being programmes:** The PSB should seek to make climate change a regular discussion point in meetings where the focus is on delivering PSB priority workstreams, such as the PSB's well-being plan delivery (or as part of wider public health initiatives). This can include raising awareness of heat stress risks, encouraging uptake of flood-proofing (e.g., property flood resilience - PFR) or home insulation grants for residents' health. By treating climate adaptation as a core part of promoting a "more active and healthier Vale," the PSB can ensure well-being programmes are future-proofed. As part of the Cwm Taf Morgannwg PSB CCRA, stakeholders recommended making climate adaptation a priority in community well-being planning and giving residents a voice in shaping local resilience actions. This should include Town and Community Councils (TCCs) as key partners in the co-design and delivery of resilience.

2. Built Environment



- **Integrate climate adaptation into planning and development:** The PSB should work with local planning authorities to (further) embed climate risk considerations in all new developments and regeneration projects. For example, the PSB could seek to understand and communicate design standards for resilience (e.g., the potential for sustainable urban drainage systems - SuDs). The PSB should also seek to evaluate development plans for green infrastructure, ensuring that it is easier to maintain, including contracting arrangements that are reflective of changes in seasonality and the need for more frequent upkeep.
- **Retrofit and protect existing buildings:** The PSB as a collective should look to identify the most climate-vulnerable buildings in the Vale's public estate and in communities – e.g. homes prone to flooding or overheating, critical service buildings, schools or offices without sufficient ventilation, historic structures at risk – and prioritise them for adaptation investments e.g., retrofitting Green Infrastructure to existing assets or retrofit of at surface SuDs.
- **Enhance maintenance and emergency preparedness for communities:** With more frequent extreme weather, routine maintenance of the built environment becomes mission-critical. The Vale Council and partners should allocate resources for stepped-up maintenance of drainage, green spaces, and structural inspection
- **Nature-based and green infrastructure solutions:** Wherever feasible, use nature to help climate-proof the built environment. This can include embedding climate adaptation measures within development plans. For example, increasing urban tree cover, retrofitting SuDs and integrating green spaces to provide shade and cooling (addressing the "lack of tree cover" issue that caused some business districts in the Vale to overheat) and helping manage runoff.

3. Infrastructure



- **Map and reinforce critical “pinch points” or trunk roads:** The PSB should coordinate a thorough mapping of interdependent infrastructure in the Vale – places where transport, power, water, and communications networks converge and are collectively at risk from extreme weather. By identifying these vulnerable nodes (for example, a bridge that carries roads, an active travel route, telecom lines, and water pipes across a river), partners can prioritise them for upgrades or contingency planning.
- **Improve inter-agency coordination and emergency response:** Infrastructure failures often have wide ripple effects, so planning collaborative responses is essential. PSB partners should establish protocols with partner infrastructure operators (e.g., TfW, National Rail) for rapid information sharing during incidents to the wider PSB or sub-groups such as the PSB AM&CE group.
- **Plan for rising demand and new stresses:** Climate change may introduce new strains on infrastructure usage – the PSB should anticipate these in its strategies. For instance, hotter summers are already leading to spikes in electricity demand for cooling (fans, AC units). The VoGC decarbonisation team noted the paradox that energy use is rising for cooling when we ideally want to reduce overall consumption – this calls for promoting energy efficiency (better insulated buildings stay cooler) and acting on the principles of the Welsh Government [Just Transition Framework](#).

4. Economy



- **Support business continuity and risk management:** The PSB, through its business-facing members (e.g. VoGC’s economic development unit), should help local enterprises prepare business continuity plans for extreme weather. Many micro and small businesses, whether high street shops or farms (98% of the Vale’s business count), may not have the resources or knowledge to do this alone and could be supported by the PSB. The Cwm Taf Morgannwg PSB CCRA noted the impacts on business resilience (cleanup costs, supply chain breaks, etc.) across town centres as a key concern to be addressed in future adaptation. This could include Town and Community Councils (TCCs) as key partners in the co-design and delivery of resilience.
- **Climate-proof key economic sectors (agriculture, tourism, retail):** Targeted initiatives should address the specific risks faced by major sectors or commercial areas in the Vale. For example, to engage agriculture and food producers, the PSB should seek to work with forums like Farming Connect or local NFU branches for future adaptation planning.
- **Engage the private sector in partnership:** Climate resilience is not solely a public sector issue – many solutions require buy-in from businesses, utility companies, and large employers. The PSB should invite representation for relevant PSB AM&CE meetings from employers (e.g. local business parks) into future adaptation planning discussions. Similarly, the PSB should actively support the growth of local adaptation goods and services by helping businesses innovate, diversify and supply climate-resilient products and solutions (e.g., supporting SMEs to access new markets (e.g., PFR, green infrastructure).

5. Land, Nature and Food



- **Implement nature-based solutions (NbS) at scale:** The PSB should continue to engage with NRW and other partners on relevant projects/programmes such as the Nature Networks and Flood Risk Management programmes. Nature-based solutions often require cross-landowner collaboration and community involvement to implement these measures, and the PSB can facilitate agreements and delivery. Collectively, PSB partners may influence NbS funding.
- **Support sustainable land management and farming:** The Vale’s farmers and landowners are on the frontlines of climate change and need support to adapt practices. The PSB should work with the farming bodies and relevant WG schemes to help farmers build resilience.
- **Protect and enhance biodiversity under climate change:** Climate change is adding pressure to habitats already under stress. The PSB should support delivery of the Vale’s Local Nature Recovery Action Plan (NRAP) by aligning partner activity, supporting the work of the Local Nature Partnership (LNP) and ensuring climate risks are reflected in wider policy, funding and investment decisions.
- **Ensure community involvement in land and food resilience:** The PSB should involve organisations such as Food Vale in future adaptation discussions and use their influence to ensure local individuals, community groups, organisations and businesses recognise the risk to their operations from climate change and are supported by the coordinating role of the PSB. The PSB can also support access for Nature by working with One Voice Wales through the Local Places for Nature Programme, highlighting their role as a specialist point of contact, for community engagement and capital funding for nature recovery and adaptation.

A photograph of a white lighthouse situated on a high, rocky cliffside. The cliff face is composed of dark, layered rock formations with some sparse vegetation. The lighthouse is a tall, cylindrical structure with a white lantern room at the top. A small metal tower is visible next to the lighthouse. The sky is filled with large, grey clouds, and the overall scene is dramatic and rugged.

Appendix

Appendix 1 - Regional Welsh Climate Risk and Adaptation Assessments

This section summarises the characteristics of recent CCRAs in three regions of South Wales adjacent to or nearby the Vale. This insight has informed the most appropriate method used in the Vale and also inspired some of the context of the risks in the county.

1. Cwm Taf Morgannwg (CTM) Climate Change Risk Assessment (2024)
2. Pembrokeshire Climate Adaptation Strategy (2022)
3. Cardiff Climate Change Risk Assessment (2025)

Common high-priority themes include Flooding, infrastructure resilience, health/social care, and nature conservation.

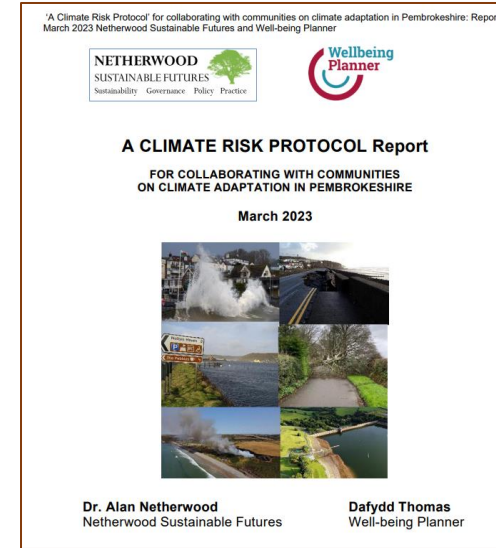
All three used CCRA3 as a baseline, combined with stakeholder engagement and localised evidence gathering, but Cardiff applied a formal risk scoring system, CTM used a participatory prioritisation framework, and Pembrokeshire focused on action planning.

Distinctive local outcomes include:

- Cardiff: Coastal flooding & cascading infrastructure failures.
- CTM: Post-industrial landscape hazards (coal tips, subsidence).
- Pembrokeshire: Coastal erosion and marine ecosystem risks.



[Cwm Taf Morgannwg CCRA](#)






[Pembrokeshire Climate Adaptation Strategy](#)



Appendix 1 - Regional Welsh Climate Risk and Adaptation Assessments

Table A1 – A comparison of 3 recent climate risk and adaptation assessments in south and west Wales

Assessment	# of Priority Risks	Top Risks/ Priorities	Methods
Cardiff Climate Change Risk Assessment (2025) 	10 priority risks (from 61 CCRA3 categories)	<ol style="list-style-type: none"> 1. Flooding impacts on communities and buildings. 2. Cascading failures in infrastructure networks (water, energy, transport, ICT) 3. Flooding impacts on infrastructure services 4. Coastal flooding and erosion affecting infrastructure 5. Business disruption from flooding 6. Business and infrastructure risks from coastal change 7. Health and wellbeing risks from high temperatures 8. Risks to coastal habitats and species 9. Risks to terrestrial species and habitats 10. Risks to cultural heritage 	<ul style="list-style-type: none"> • Screening of CCRA3 risks for Wales, adapted to Cardiff context • Localised climate projections (UKCP18) for 2°C & 4°C scenarios • Three PSB workshops for validation & scenario analysis • Risk scoring (Likelihood × Consequence) • Gap analysis of PSB risk registers
Cwm Taf Morgannwg Climate Change Risk Assessment (2024) 	11 priority risks	<ol style="list-style-type: none"> 1. Post-industrial landscape (Coal tips, landslides, ground instability) 2. Climate resilient communities 3. Infrastructural pinch points 4. Transport infrastructure 5. Wildfire management 6. Asset management 7. Social care and health provision 8. Maintaining utilities 9. Nature conservation management 10. Institutional responses 11. Resources and finance for climate adaptation 	<ul style="list-style-type: none"> • Engagement with 221 individuals from 33 organisations • Analysis of 1,400 stakeholder contributions using Xleap software • Mapping locational risks & interdependencies • Gold/Silver/Bronze prioritisation framework
Pembrokeshire Climate Adaptation Strategy (2022) 	39 strategic priorities + 24 actions	39 Climate Adaptation Priorities across: <ol style="list-style-type: none"> 1. Infrastructure (roads, ports, energy, ICT) 2. Natural Environment & Agriculture (habitats, soil health, coastal management) 3. Communities (health, heritage, wildfire, flooding) 4. Business & Industry (tourism, agri-business, water use) 	<ul style="list-style-type: none"> • Engagement with 184 contacts & 32 organisations • Review of UK CCRA3 risks at local scale • Co-production approach with PSB partners • Development of theory of change for actions (risk → output → outcome)

Appendix 3 - Current flood risk in the Vale

The maps below show current baseline flood risk across the Vale of Glamorgan, taking account of existing flood defences. These have been produced by the JBA Consulting team drawing on information from the Ordnance Survey and Natural Resources Wales, as referenced in the images. They illustrate areas at risk from rivers and surface water (left) and the sea (right) under present-day conditions.

The highest river flood risk is concentrated along the main river corridors and low-lying floodplains. This includes areas along the River Ely and its tributaries around Peterston-super-Ely and Wenvoe, the River Thaw through Cowbridge and downstream towards the coast, and watercourses around Dinas Powys and Barry. These areas experience elevated risk where rivers pass through flatter terrain and urbanised catchments.

The highest risk from the sea is focused along the low-lying coastline of the Vale. This includes coastal communities such as Penarth, Barry, and parts of Llantwit Major, as well as stretches of open coastline to the west near Ogmores-by-Sea. Risk is greatest where land levels are low and where assets are located close to the shoreline, despite the presence of existing coastal defences.



Flood Risk Assessment Wales

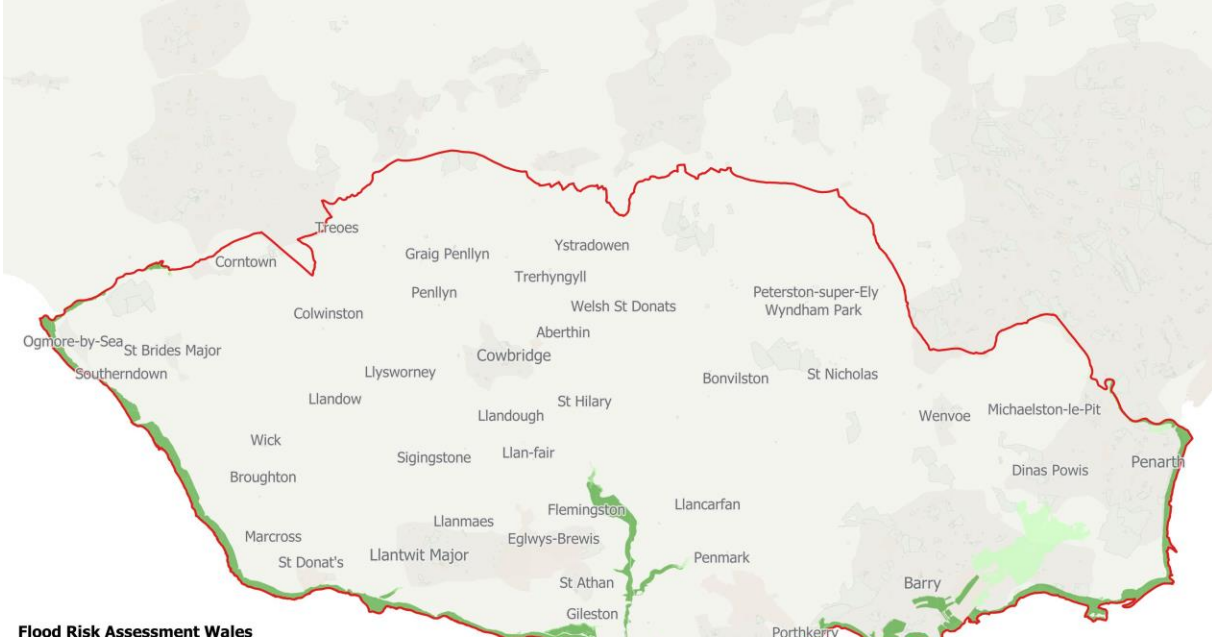
Vale of Glamorgan

Flood Risk from Rivers and Small Watercourses

- High
- Medium
- Low

0 1 2 km

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Contains Natural Resources Wales information © Natural Resources Wales and Database right. All rights reserved.



Flood Risk Assessment Wales

Vale of Glamorgan

Flood Risk from the Sea

- High
- Medium
- Low

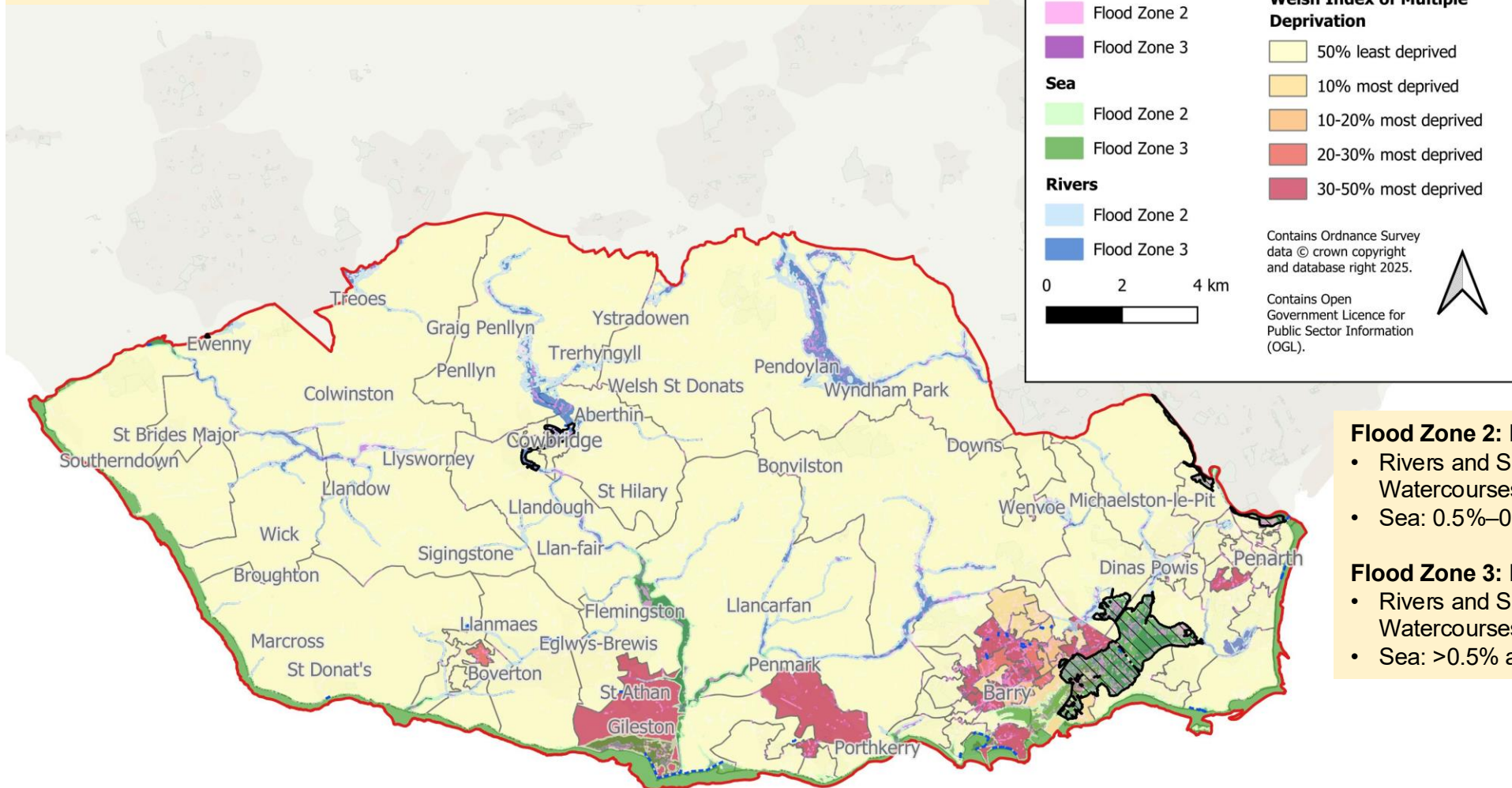
0 1 2 km

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Appendix 3 - Future flood risk in the Vale

The map below shows future flood risk, which accounts for climate change over the coming century, overlaid with the Welsh Index of Multiple Deprivation (2025), TAN-15 defended locations (May 2025 dataset) and NRW flood defences. This highlights areas where socio-economic challenges and flood risk intersect, helping to prioritise adaptation efforts and address non-climate factors that influence vulnerability. Data references are outlined in the legend, in addition to those referenced on the previous maps.



Flood Zone 2: Medium probability

- Rivers and Surface Water and Small Watercourses: 1%–0.1% annual chance
- Sea: 0.5%–0.1% annual chance

Flood Zone 3: High probability

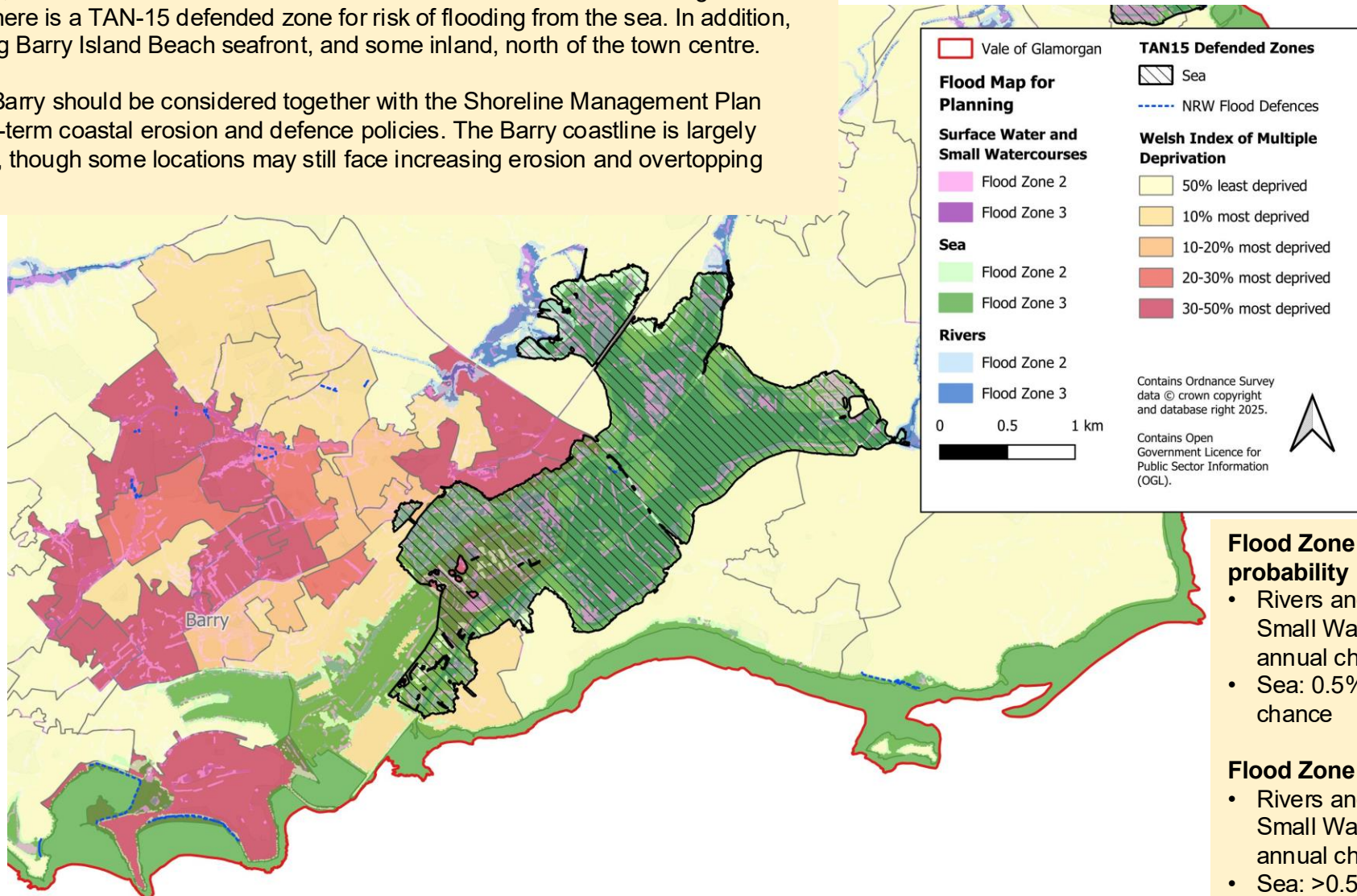
- Rivers and Surface Water and Small Watercourses : >1% annual chance
- Sea: >0.5% annual chance

Appendix 3 - Future flood risk in Barry

Almost a third of Barry neighbourhoods are in the top 20% most deprived areas in Wales¹. These areas are located in the centre, to the north east of the town. The coastal areas are within Flood Zone 3 for risk of flooding from the sea, a high proportion of the town is within Flood Zone 2 for risk of flooding from surface water and small watercourses, and some areas are within Flood Zones 2 and 3 for risk of flooding from rivers. To the west of Barry, there is a TAN-15 defended zone for risk of flooding from the sea. In addition, there are flood defences along Barry Island Beach seafront, and some inland, north of the town centre.

However, future flood risk in Barry should be considered together with the Shoreline Management Plan (SMP2)², which sets out long-term coastal erosion and defence policies. The Barry coastline is largely designated for 'Hold the Line', though some locations may still face increasing erosion and overtopping pressures as sea levels rise.

1. [Welsh Index of Multiple Deprivation 2025](#)
2. [Flood and Coastal Erosion Risk Maps](#)



Flood Zone 2: Medium probability

- Rivers and Surface Water and Small Watercourses: 1%–0.1% annual chance
- Sea: 0.5%–0.1% annual chance

Flood Zone 3: High probability

- Rivers and Surface Water and Small Watercourses : >1% annual chance
- Sea: >0.5% annual chance

Appendix 5 - Iteration: Ensuring the CCRA Stays Up-to-Date & Relevant

Identify Triggers for Refreshing the CCRA:

The PSB should seek to periodically **repeat or update the risk assessment** as new information comes to light.

Key triggers might include:

- **Policy Updates:** e.g. after a revised National Adaptation Plan (2028), Climate Adaptation Strategy for Wales or when the next UK CCRA is published (UKCCRA4 due ~2027).
- **New Data or Risks:** if important **new evidence** becomes available or a previously unforeseen **risk emerges** locally.
- **Further Engagement:** As above, if engagement raises new evidence which can help further prioritise key risks.
- **Significant Events:** following a major **climate-related event** in the Vale (such as severe flooding or an extreme heatwave) that reveals new vulnerabilities. Following record-breaking weather, the PSB should seek to engage with service users, e.g., vulnerable groups, to understand the impacts, update the risk assessment and develop actions accordingly
- **Planning Cycles:** ahead of key decision points – for instance, **before the development of the Well-being Plan** (and future iterations), to ensure it's informed by up-to-date risk information.

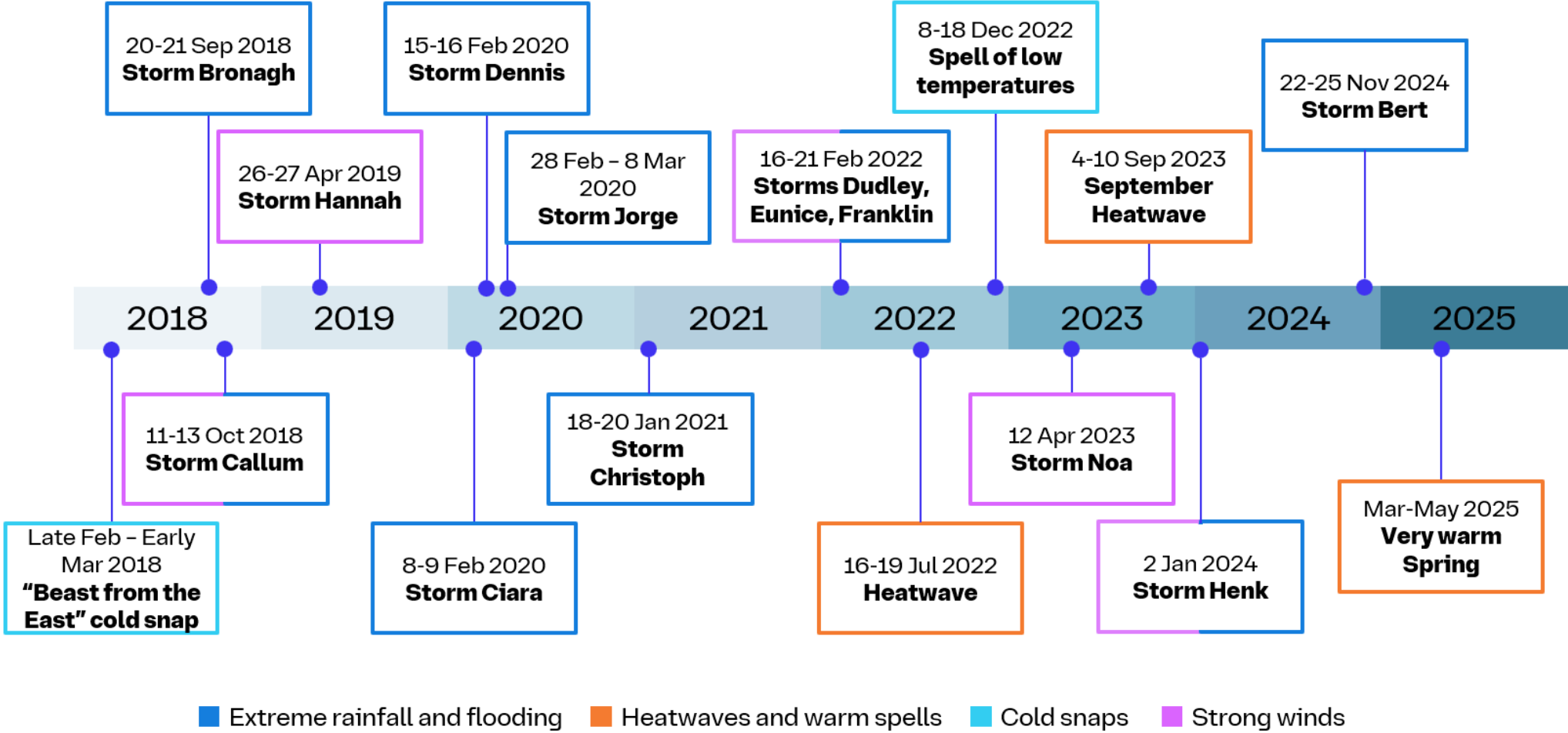
Monitoring and Adaptive Management:

The PSB should establish a clear process to monitor these triggers and overall progress, making the CCRA a “living” document. The risk register has been developed to be utilised in this way.

Key actions include:

- **Assign Responsibilities:** Designate who will track each trigger (e.g. the PSB AM&CE subgroup) and ensure this is part of ongoing project management.
- **Routine Reviews:** Schedule regular check-ins – for example, an annual PSB Climate Risk & Resilience review – to discuss any trigger events and update on adaptation actions taken.
- **Monitor indicators** like flood incidents, heat-related health statistics, or infrastructure outages to see if risks are being reduced or rising. .
- **Data Sharing:** Agree on data-sharing across partners (council, health, NRW, etc.) so that new climate evidence (e.g. updated flood maps, health surveillance data, infrastructure failure reports) is collected and reviewed collectively. This ensures no “trigger” is missed and all partners have the latest information.
- **Learn & Adjust:** This iterative cycle means lessons from any climate events or new studies will directly inform how the PSB updates its risk assessment and adaptation plans.

Appendix 6 – Notable UK Extreme Weather Events (2018–2025)



The above timeline displays notable extreme weather events affecting the UK between 2018 and 2025, including storms associated with extreme rainfall and flooding, periods of strong winds, heatwaves and warm spells, and cold snaps. The figure illustrates a diversity of climate-related hazards over recent years

Source: AtkinsRéalis (2026) Built Estate Climate Change Risk Assessment and Adaptation (Resolven). NRW Evidence Report Series Report No: 996. NRW, Bangor.