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# TfW Climate Adaptation and Resilience Plan

Annual Progress Update for 2024/25



TRAFNIDIAETH CYMRU  
TRANSPORT FOR WALES



Llywodraeth Cymru  
Welsh Government

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# 1 Introduction

Our [Climate Adaptation and Resilience Plan](#) (CARP), published in May 2023, sets out our strategic direction for managing climate risks and opportunities across transport networks, operations, and services. This annual update reviews progress against the 5 strategic objectives between November 2024 to November 2025, highlighting actions taken to embed resilience, assess risks, and implement adaptation measures.

Each section details achievements, outputs, and next steps, while later parts summarise priority actions and outline plans for the year ahead. The report reflects TfW's commitment to strengthening climate resilience and ensuring operational readiness in response to evolving environmental challenges.

## 2 Objective 1: Ensure climate change resilience is embedded in everything we do

### 2.1 Our Approach to Embedment

Embedding climate change resilience into everything we do requires a multifaceted approach. The framework used to support this approach spans four key pillars: Governance, Strategy, Risk management and Metrics and Targets. Each pillar supports the range of activities we've undertaken. This report focuses on governance, and strategy for ways of working and project development.

### 2.2 Governance

Our governance of climate change resilience at TfW centres around managing and communicating the risks and opportunities arising from climate change. At its core, embedding climate resilience into business-as-usual entails managing climate risk at a practical level, with board oversight. This report demonstrates the progress we've made embedding resilience throughout TfW.

#### 2.2.1 Safety and Efficiency Through Resilience

The safe and efficient operation of our network is the key driver for mitigating the impacts of extreme weather on the Core Valley Lines (CVL) and Wales & Borders routes. We've been engaging with wider teams to assess current levels of appetite and readiness to adopt resilience principles in their ways of working.

## 2.2.2 Adaptive Capacity as an Organisation

In April 2025, we conducted the annual assessment of our adaptive capacity as an organisation. This involved an internal review of TfW's current activities and progress against the aims set out in the CARP. The results of this assessment show we have a strong understanding of the risks and opportunities associated with extreme weather. Including embedding of climate resilience in our operations, services and ways of working. [The Adaptive Capacity report](#) highlights our strengths in governance, stakeholder engagement and corporate strategy.

## 2.3 Strategy

### 2.3.1 Climate Resilience Remit at TfW

TfW's remit for climate adaptation and resilience sits within the Sustainable Development and Climate Change (SDCC) team. Since the last update, the SDCC team has moved into the Transport Planning and Development (TPD) directorate.

Embedding resilience more broadly across TfW has required both process innovation and strategic intervention. To support this, we held a workshop facilitated by our Innovation Lab to identify and map out the principal climate risks for TfW.

From this, we outlined the strategic mitigations required to increase resilience; to be aligned with the Climate Change Risk Assessment (CCRA) framework. These covered ways of working, key risks, opportunities, and actionable steps. The focus was on delivering the CARP, disseminating CCRA findings, and coordinating resilience actions between stakeholders.

### 2.3.2 TfW's Major Projects

Embedding climate resilience into major project development has been another key aspect of future proofing our assets, operations and services. We've engaged with project teams to include sustainable development aspects early-on in project development. This maximises opportunities for early-intervention and integrating key requirements in projects. This includes recording short, medium and long-term risks and opportunities in project risk registers, for use by specific project teams.

#### 2.3.2.1 Transport Development Projects

The SDCC team have contributed to several major projects in the development phase, including Cardiff Crossrail and Caerphilly Interchange. These considerations include asset and infrastructure requirements, along with specific climate risks that require mitigation across various stages of delivery and operation.

### **3 Objective 2: Assess climate change risks across all TfW networks and operations**

Our approach to risk management centres around our CCRA framework, published in May 2023. We use this as a means to enhance our ability to identify climate-related risks and opportunities; ensuring that our operational practices, corporate, strategic, and financial decisions are structured to respond effectively. This includes oversight of TfW's risk appetite by the Board and Executive Leadership Team.

#### **3.1 Climate Change Risk Assessments**

##### **3.1.1 Site specific Climate Change Risk Assessments**

We conduct site specific CCRAs for our key assets, routes and facilities to account for the effects of climate change. We use the findings of these risk assessments to implement mitigation measures, to ensure we maintain a high standard of safety and service for our customers and key stakeholders. We have an annual target of completing 10 CCRAs by April 2026.

We also capture the observed impacts of extreme weather events on our network: customers, staff, operations and assets. Recent examples include named storms Bert, Darragh and Éowyn, and the heatwaves of summer 2022.

##### **3.1.2 Station Surveys with Operational Colleagues**

We've conducted several station surveys for CVL routes. These CCRA site surveys consider the risk from a range of weather impacts for asset health, passenger safety and service quality. Additional considerations include the safety of both employees and passengers and access to alternative travel modes.

We've met with several of our station and facilities managers to better understand ongoing weather management risks, with a view to implement control measures and corrective actions for previous weather impacts (see Objective 4 for full details).

#### **3.2 Risk Recording and Communication**

Identified risks are also catalogued in the Active Risk Manager (ARM) system for further investigation. These link strategic objectives to operational activities, such as our asset renewals risk scoring and site-specific incident procedures. Each strategic risk has assigned control measures, impacts, opportunities, risks, consequences, fall backs and interdependencies.

We're also working with our supply chain to adopt the principles in our CCRA framework. Supporting Amey Infrastructure Wales (AIW) in undertaking CCRA for their asset maintenance and renewals work.

## **4 Objective 3: Design and implement solutions that reduce the impacts from future climate change**

We are developing climate change adaptation pathways for our key assets and services. This will involve implementing the adaptation pathways planning approach as a mitigation measure. We will be adopting the adaptation planning methodology in line with industry standards and guidance such as BS 8631:2021 – 'Adaptation to climate change. Using adaptation pathways for decision making'.

### **4.1 Adaptive Capacity Assessment**

In July 2024, we commissioned Climate Sense to undertake an adaptive capacity assessment for a selection of our key stations on the CVL. Specifically, Rapid Adaptation Pathway Assessments (RAPAs) to ascertain the viability of more flexible, iterative approaches to climate adaptation of our key routes, services and operations.

This assessment set out the key climate hazards for several CVL stations for both the medium and long term. This includes a range of climate projections and weather conditions arising from moderate and severe emissions scenarios, with corresponding atmospheric warming scenarios to follow ([Full report here](#)).

## **4.2 Adaptation Pathways Planning**

### **4.2.1 Collaboration with Network Rail Wales & Western**

TfW has worked closely with Network Rail to develop adaptation and resilience strategies for the Wales & Western region. In 2025, we contributed to several climate adaptation workshops covering routes such as the Marches Line, Heart of Wales Line, West Wales, and South Wales Mainline. In November 2025, we co-delivered a workshop focussing on the CVL and other Wales & Borders routes, including South Wales Valleys, Vale of Glamorgan, Swansea and Bridgend.

These workshops assessed climate risks and co-developed resilience strategies for the next 100 years, considering hazards like flooding, heat, and storms. Decisions made will inform business and asset management planning, with resilience actions categorised by local context (for example, resist, rapid recovery, bounce back).

Alongside this, TfW is developing its WRCCA strategy, supported by measurable metrics and targets. These initiatives will embed resilience into TfW operations and influence long-term planning, ensuring readiness and reducing disruption across our network.

## **5 Objective 4: Enable timely recovery from the impacts of adverse weather**

### **5.1 The Impact of Extreme Weather**

In 2024-25, storms Bert, Darragh and Éowyn all impacted our ability to effectively run rail and bus services. However, lessons have been learned from these storms, with information gathered from a range of sources including the impact caused by these events (damage and disruption).

#### **5.1.1 Our Preparedness for and Response to Extreme Weather**

Our next steps following this are to conduct a full CCRA assessment for affected sites and work with our facilities teams to co-develop site contingency plans. The initial control measures and future preventative actions include inspection criteria for depots and stations - this links to our WRCCA strategy, currently in development (as per text under Objective 1).

Further to our work in 2023/24, this year (2024/25) we have been working with external consultants and Amey Infrastructure Wales to revise and update the overarching Adverse Weather Plan for the CVL network. This document is currently under review, subject to further revision before issue in 2026.

## **6 Objective 4: Enable timely recovery from the impacts of adverse weather**

### **6.1 Regional and Local Partnerships**

We have worked closely with Corporate Joint Committees (CJCs) to embed climate adaptation into Regional Transport Plans for the Cardiff Capital Region and contributed to the Cardiff Climate Emergency Board, supporting regional risk assessments and carbon reduction targets.

TfW also collaborates with Public Services Boards (PSBs) across Wales, including Vale of Glamorgan, Cwm Taf Morgannwg, and Cardiff, sharing data and insights from Climate Change Risk Assessments (CCRAs). These partnerships focus on mitigating climate impacts on health, infrastructure, and service delivery, while promoting preventative and predictive planning.

### **6.2 Industry Contributions and Strategic Influence**

Beyond regional partnerships, TfW has contributed to national and industry-level initiatives. This includes input into the UK Climate Change Committee's Risk Assessment (CCRA4), participation in the Infrastructure Operators Adaptation Forum, and supporting resilience studies for the National Infrastructure Commission Wales.

We have also worked with the Rail Safety Standards Board (RSSB) to shape guidance for Weather Resilience and Climate Change Adaptation strategies, aligning our forthcoming WRCCA strategy with industry standards. These collaborations ensure TfW remains at the forefront of climate adaptation planning, influencing policy and practice across Wales and the wider transport sector.



## 7 Summary of Key Action Updates

Within our CARP we have outlined our Action Plan for climate resilience. The purpose of this section is to provide key updates on the actions set out within the plan that have been completed throughout 2024/25. Our understanding of the resources required to complete these actions is continually improving as this work is progressing, therefore, the target completion dates have been revised to reflect current progress.

Table 1: Summary of Key Actions and Updates

Action	Target Completion	Actual Completion	Updates
Set up an overarching TfW Climate Change Steering Group (CCSG) and a CVL-focussed Climate Change Adaptation Working Group (CCAWG)	2022	2022	<p>TfW's CVL-focused CCAWG has operated since Nov 2022 with updated terms in 2025 to strengthen incident preparedness and peer review of climate risk mitigations.</p> <p>The TfW's CCSG, active since 2023, provides assurance on climate risks and is revising its remit to address emerging transition challenges.</p>
Embed the climate change adaptation standard - ISO 14090:2019	2025	On-going	<p>We are exploring the adoption of ISO 14090:2019 to formalise climate adaptation planning across major projects, business continuity, and operations. This includes early integration in project delivery (see <b>1.3.2</b> and <b>1.3.4</b>), station management, and asset renewals risk scoring. We aim to reinforce existing policies and strategies with these adaptation principles.</p>

Action	Target Completion	Actual Completion	Updates
Develop management and response plans for extreme weather events and outbreaks of invasive species/emerging pests and diseases	2026	On-going	<p>An Adverse Weather Management Plan (AWMP) for the CVL is currently under review with a target publication period of January 2026 (see <b>Objective 4</b> for further details). This will encompass a range of procedures for TfW routes and assets.</p> <p>Amey Infrastructure Wales have developed an Invasive Species Management Plan for the CVL. This includes a supporting CCRA aspect to mitigate the risks related to invasive species being mobilised by wind and rain.</p>
Facilitate the coordination of a cross-discipline Climate Change Adaptation Working Group (CCAWG) for Welsh Infrastructure Owners to support the development of management for cascading failures	2024	On-hold	<p>This action is on hold for the time being. As per <b>updates in Objective 5 (5.3)</b>, we are actively collaborating with various external organisations including PSBs, the Infrastructure Operators Adaptation Forum, and other ad-hoc commitments including the National Infrastructure Commission Wales resilience study.</p>
Develop a framework and climate projections guidance document to support the assessment of climate risk	2023	2023	<p>We published our CCRA Framework in October 2023 - providing a standardised approach for the assessment of climate change risk. We are considering updating to reflect our current outlook and streamlining the process to encourage wider adoption throughout TfW; both for internal teams and our supply chain.</p>
Produce weather-related impact assessments for the CVL, focusing on: Flooding, landslips, heat, lightning, sea-level rise, wind, extreme cold, heat and fog	2024	On-going	<p>We are working to understand system-wide risks identified through climate change risk assessments. As per <b>Objective 4</b>, we are drawing learning from our experiences of weather incidents to develop incident response strategies.</p>

Action	Target Completion	Actual Completion	Updates
Embed the requirement climate change risk assessments into all TfW major projects (such as North Wales Metro) and existing policies	2024	On-going	We have designed and delivered climate change risk assessment training across TfW to enable this action. We are working closely with internal teams to embed the requirement into TfW's Plan of Work Lifecycle.
Conduct a comprehensive assessment of climate risk across the CVL network, including stations and depots	2024	On-going	In the process of completing CCRA's across the CVL network. Target of 10 CCRA's this financial year, in line with our Business Plan for 2025-26. <b>Objective 2</b> for further details).
Develop a Climate Adaptation and Resilience Delivery Plan for the CVL network, including drainage and earthworks	2024	On-going	This action will proceed in Q4 2025/26 following on from completion of the CCRA's. The plan will include a practical delivery plan for seasonal weather preparations, asset renewals programme, and key maintenance activities at TfW facilities (stations and depots). See <b>Priorities for Year Ahead</b> for further details)
Develop a Vegetation Management Plan (VMP)	2024	2025	We've developed a biodiversity strategy for the CVL to enhance ecological resilience. The first VMP, supported by a CCRA, focuses on managing vegetation along routes and assets to reduce climate risks such as flooding, wildfires, and wind-blown track obstructions.
Develop climate change adaptation pathways (supported by BS 8631: Adaptation to climate change - Using adaptation pathways for decision making) for the CVL	2024	2024	We commissioned Climate Sense to develop rapid adaptation pathways for several CVL locations across the CVL (see <b>Objective 3</b> for further details). Our next steps are to produce full adaptation pathways for the CVL; including serviceability, performance management, operations and asset management.

Action	Target Completion	Actual Completion	Updates
Conduct research into Nature-based Solution (NBS) schemes and develop implementation guidance	2024	On-going	We're working with our ecologists to map opportunities and co-benefits for delivering nature-based solutions for flood risk management, placemaking and biodiversity enhancement (see <b>Priorities for Year Ahead</b> for further details).

## 8 Priorities for 2025/26

Table 2: Priorities for 2025/26

The below table lists the activities we've prioritised to support the objectives within our CARP and to increase our understanding of how climate change will affect us in Wales.

Priority	Supporting Action	Business Benefit
1. Develop the Climate Adaptation and Resilience Delivery Plan for the CVL Network	This will be informed by the control measures and risk mitigations in the CCRAs. Seasonal weather preparedness, asset and facilities maintenance, and technical specifications for asset interventions will be included.	By setting up the adaptation and resilience plan as an annual routine, we can improve asset performance and operational readiness to manage the impacts of adverse weather throughout the year. This will also enable us to consider any gaps we need to address through adaptation pathways planning across organisational areas.
2. Conduct a comprehensive assessment of climate risk across the CVL network, including stations and depots	We will continue to undertake risk assessments across our network to understand risks and opportunities from climate change. Informed by our knowledge of vulnerable assets, routes and services.	We will be better placed to deliver the aims of our annual business plan, with appropriate mitigations in place to maintain safety and standard of service for our network.
3. Develop management and response plans for extreme weather events (contingency planning)	Setting out formal incident response and recovery routines for specific weather events and asset/facility types. This will be supported by our weather resilience and climate change adaptation strategy, and Amey Infrastructure Wales' Adverse Weather Plan.	Reduced travel disruption, financial impacts and damage to assets during/after adverse weather. This should also enhance safety and end-user experience for our employees and customers.
4. Update CARP Document	Update our CARP document to reflect current progress and up to date information: data, metrics and standards for adaptation.	Refreshed outlook and wider communication of our next steps for adaptation and resilience at TfW.