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Llyr Gruffydd MS
Chair of the Climate Change, Environment, and Infrastructure Committee

21 February 2025

Dear Llyr Gruffydd MS

I am writing to you in response to the Climate Change, Environment and Infrastructure Committee's invitation for Transport for Wales (TfW) to submit written evidence as part of your inquiry on the impact of Storm Bert and Storm Darragh.

Our railway in Wales faces unique challenges from the effects of climate change, of which storms Bert and Darragh at the end of 2024 were the most recent to cause major disruption to the network. Historically, parts of the network were built to connect communities alongside rivers to allow a transition of movement for people and goods from river to land. This means, the network can be very vulnerable to flooding and earth movements when faced with extreme weather.

At TfW we have a responsibility to make sure that our transport network is safe for our colleagues and customers, and that it's suitable to adapt to the future hazards our changing climate may bring. The work we're doing to transform our transport networks in Wales go beyond the benefits of new rolling stock, stations and timetables. We're transforming the network to ensure resilience, reduce disruption and to keep people moving.

Although previous extreme weather events in Wales, such as Storm Dennis in 2020, have greatly informed our planning and response, we are continually improving our knowledge and capabilities for embedding climate resilience & adaptation across the TfW Network which will allow us to better protect our assets from damage and reduce the severity of service disruption. Therefore, in this letter, I will evidence the efforts our teams made to prepare for storms Bert and Darragh, to minimise their impact on our infrastructure and the disruption caused to our customers.

Storm Preparedness and Impact

Storm Bert and Storm Darragh took place, respectively, from **Friday 22 November – Monday 25 November 2024** and **Friday 6 December – Saturday 7 December 2024**. Although the impact of the storms and the actions we took to minimise disruption on our transport network differed for both events, the approach we took to preparedness and responding to alerts from the Met Desk were in line with our standard protocols when extreme weather is forecast.



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In instances where named storms, with the potential to cause substantial impact, are forecast, it's operational procedure for TfW representatives to attend regular Extreme Weather Action Teleconferences (EWATs). EWATs are hosted by the infrastructure manager, either Amey Infrastructure Wales (AIW) for the CVL network or Network Rail for the wider Wales & Border network, and are an opportunity to control preparations and resilience in advance of adverse weather events. Information from the Met Desk and the overall Met Office forecasts are shared to inform decision making regarding precautionary measures.

In both instances, our colleagues began attending dedicated EWATs around 72 hours before the storms hit the network. From the EWATs, it was identified that Storm Bert was categorised as extreme, with up to 70mm of rain forecast across the CVL Network, and that a red weather warning had been issued for Storm Darragh with predicted winds as high as 80mph in areas where our lines were highest and most exposed, such as the Northwest coast. In addition to the EWATs, we also attended wider civil contingency calls, where local resilience forums were instigated, in order to supplement local knowledge and share our operational planning with stakeholders. The information collated in these meetings and the EWATs enabled us to begin planning our response in collaboration with industry partners, including Network Rail, to ensure our colleagues and customers were informed and, most importantly, safe if travelling on our network during these periods.

Storm Bert

In the case of Storm Bert, TfW made the decision to stop services on both the Conwy Valley and the Heart of Wales lines on Saturday 23 November and Sunday 24 November, before the storm hit the network. Although we recognise the disruption that closing these lines can cause for passengers, in instances such as this, our aim is to balance the running of services with our key priority of ensuring the safety of our colleagues, customers and the transport network. Some areas of Wales, including North Wales, were forecast up to 80mm of rainfall and strong winds in excess of 60mph, and we acted upon this information accordingly.

Unfortunately, the rail network across the UK experienced severe impacts due to Storm Bert, with torrential conditions effecting lines across Wales. Despite our precautionary measures, widespread rainfall caused disruption to several of the lines including the Marches line, the Ebbw Vale line (between Llanhilleth and Ebbw Vale) and parts of the CVL network north of Radyr. Many areas along these routes were submerged under flood water which meant we were unable to run services until the water had receded and the necessary safety checks to reopen the lines were in place (including route proving, temporary speed restriction checks and asset inspections). Both TfW and Network Rail colleagues worked incredibly hard to get the rail network in Wales and the Borders back up and running, however, the impact of Storm Bert on our infrastructure meant that services on these lines were subject to cancellations and delays into the following week whilst this large-scale effort took place.



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Although rail services and infrastructure were impacted across Wales and the Borders, our owned assets on the CVL network were particularly affected by the storm. For example, flooding in areas such as Aberdare and Mountain Ash, in Rhondda Cynon Taf, meant that large amounts of debris remained on the tracks after the water receded which delayed the full reopening of the CVL lines north of Radyr whilst clean-up was underway. The high and fast flowing waters of the River Taff caused debris to become wedged against and under the bridge deck of the Pentyrch Viaduct, south of Taff's Well, which caused damage to the handrail of the structure. Due to this, we implemented a precautionary 5mph speed restriction over the bridge until the large trees were removed and a detailed examination of the structure confirmed damaged sustained did not affect the overall structural capacity of the bridge.

Despite not foreseeing the extent to which the infrastructure of the CVL would be affected by Storm Bert, lessons learnt from this event and the data we were able to collate will contribute to improving our knowledge and capability to embed climate resilience & adaptation across our assets. For example, in order to complement our process of forecasting, warning and alerts in instances of extreme weather events, TfW have installed several weather stations to better understand weather patterns across the CVL network. The unique geography of the South Wales Valleys contributes to the existence of micro-climates, and so the different locations of these stations allow for a more effective response during extreme weather.

Our weather stations monitor local weather patterns including rainfall, wind gusts, humidity and heat. The data gathered from our weather monitoring stations helps us to develop our understanding of how and where extreme weather events may manifest across our network in the future. As such, we will develop appropriate resilience & adaptation measures to reduce the impacts on safety and operational performance of our assets and services. Hence, the data collected at these weather stations during storms, such as storm Bert, is used to determine the weather patterns that are likely to cause the most disruption to services on the CVL so that appropriate precautionary measures can be put in place.

As we improve our understanding, we can better protect our assets from damage and reduce the severity, frequency and duration of service disruption that extreme weather may cause. Although our teams worked incredibly hard during the aftermath of Storm Bert, this evidence base will further enable our Asset Management team to make swifter, more informed decisions with respect to protecting and maintaining our safety critical assets.

Storm Darragh

In the case of Storm Darragh, we made the advance decision to suspend all services on lines west of Carmarthen from 9.00pm on Friday 6 December following forecasts of strong winds of up to 90mph and extremely heavy rain. We also altered routes and cancelled specific services where appropriate. Further precautionary measures for Saturday 7 December, informed by Met Desk intelligence and in line with the 'danger to life' warning issued by the UK Government, included:

- A blanket 50mph speed restriction on all lines
- All day suspension of TfW services on the Conwy Valley line, Chester-Liverpool Lime Street and Hearth of Wales line



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- Suspension of services from Llandudno Junction-Holyhead, Machynlleth-Aberystwyth/Pwllheli and Carmarthen – Pembroke Dock/Milford Haven/Fishguard Harbour until 11.30am
- Reduced services on the Marches line.

However, despite our preparation for the impacts of Storm Darragh and our close collaboration with Network Rail, the situation evolved and we implemented additional reactionary measures in order to further ensure the safety of our colleagues, customers and the network. Hence, overnight on Friday 6 December, the decision was then taken to suspend TfW services across the whole of South Wales until the routes could be proved and deemed clear for services to run the next morning.

Over the course of the two days, the extremely high winds and rainfall across the network caused power supply faults, fallen trees on the line and flooding. This resulted in widespread disruption to the network and the effects were, once again, felt into the following week as damage was assessed and necessary repair works were undertaken. As conditions eased, the priority for both TfW and Network Rail on Sunday 8 and Monday 9 December was to route prove and to open all routes as quickly and as safely as possible. By the Monday morning, we'd reinstated the majority of our services on the South Wales Mainline, east of Swansea, on the Vale of Glamorgan and CVL lines.

There were several service affecting incidents on our owned infrastructure on the CVL including fallen trees on the Overhead Line Equipment (OLEs) and debris on the track. As was also the case during Storm Bert, our Asset Management team kept our owned infrastructure assets, over or adjacent to large watercourses (including bridges, culverts, earthworks, track etc.), under close examination. This was to ensure that the impact of water levels and debris accumulation was minimised as much as possible. During both storms, we deployed on site watchmen and remote condition monitoring devices to continually assess the effects of flooding on our infrastructure. This data and lessons learned will be used alongside data captured by our weather stations to inform our infrastructure resilience plans and future investment for the CVL.

An additional challenge faced by TfW colleagues during Storm Darragh was caused by the emergency alert issued by the UK Government which cautioned a red weather warning and advised people in Wales and the Borders to 'stay indoors if you can' and 'not to drive' in the conditions. Understandably, this had an impact on our staffing levels on Saturday 7 December which increased pressure on operations. However, the majority of colleagues safely made their way into work and only a few stations were operating with reduced staffing. Although in our preparation for Storm Darragh internal calls were held with colleagues to provide assurance and updates on services, we have since reviewed our Adverse Weather Procedure with a specific focus on internal messaging for colleagues on travelling to work safely but also the importance of providing a critical service in these events.



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Impact on Customers and Communities

Customer Communication

Another of our key priorities during extreme weather events such as storms Bert and Darragh is that we clearly communicate service disruption and travel advice to our customers. For both the storms, we worked closely with colleagues in Network Rail and issued joint statements to ensure that our messaging was aligned and consistent across our platforms. We also engaged with other Train Operating Companies (TOCs), including Great Western Railway (GWR) and those across the borders, so that all operators are informed on ticket easements, ticket acceptance and Rail Replacement Services (RRS).

As well as sharing regular updates with local and regional media, we informed customers of service changes through our established channels that we know are consistently used by customers to find out information. This included:

- Displaying a yellow Disruption Banner on the TfW website and an icon on the TfW app.
- Sharing real time updates on our Journey Check website.
- Sharing real time updates under the 'Live Information' section on the TfW app.
- Updating Customer Information Screens at stations in real time and displaying service bulletins on screen where possible.
- Delivering station announcements, both automatic at unstaffed stations and automatic and manual announcements at staffed stations.
- Pinning graphics and statements simplifying the service changes on our social media pages, as well as sharing details with customers and linking posts to journey planners.
- Issuing updates to key stakeholders and community groups to let them know as soon as operationally confirmed so that they can inform their communities.
- Delivering frontline communications via station colleagues and conductor announcements regarding any journey amendments.

Our messaging was mirrored on the National Rail Enquiries website and app with a red Disruption Banner and real time updates on their Online Journey Planner.

During both events, the main goal for our customer communications was to publish alternative travel advice as soon as changes to services were confirmed. For example, during Storm Bert we issued a 'check before you travel' message so that customers were aware of possible changes to their journeys and to allow for extra time to travel due to flood damage in key routes. As the picture changed, our control team were able to update our messaging digitally on our key channels in real time. During Storm Darragh we issued a notice advising customers that they cannot travel with us on all lines except for Treherbert, Merthyr and Aberdare lines as soon as we deemed it necessary, and the rail/road conditions meant we couldn't run services on Sunday 7 December. In instances such as this, we do our best to help customers complete a journey as far as safely possible and advise them ahead of time that a storm is forecast and to expect disruption. If customers still chose to travel, we react to the situation as it progresses and when it becomes unsafe to operate services, we advise these customers that they cannot continue to travel with us.



In total, we issued 49 social media posts on our @tfwrail account on X (formerly known as Twitter) relating to warnings of line closures and disruption caused by Storm Bert, and 31 social media posts on X during Storm Darragh. For both storms, we saw a spike in customer contact with the majority of social media queries coming through WhatsApp and X, with 294 incoming messages during Storm Bert and 617 incoming messages during Storm Darragh. Further to this, our Customer Relations team estimate that we received approximately 700 cases from customers during Storm Bert and 600 cases from customers relating to Storm Darragh, which were primarily refund and delay claims due to performance impact caused by the disruption. A summary of both storms' performance impact figures can be seen in the tables below:

Storm Bert Performance Impact (22– 25 November 2024)	
Incident Count	87
Delay Minutes	1,756
Full Cancellations	4
Part Cancellations	11
Pre-Cancellations	113

Storm Darragh Performance Impact (6– 9 December)	
Incident Count	103
Delay Minutes	3,724
Full Cancellations	824
Part Cancellations	115
Pre-Cancellations	120

Impacts on Community Groups

As well as aiming to minimise the impact on our customers, we also feel it's important to support our communities and neighbours in the face of the devastation caused by extreme weather events such as storms Bert and Darragh. In particular, during the excess rainfall and flooding during Storm Bert, we felt it was integral to help those around us to recover from the impact.

Our Llys Cadwyn office is located in Pontypridd town centre, which was one of the worst affected areas in South Wales during Storm Bert. Many properties and businesses were impacted by flooding from the River Taff, as well as Ynysangharad War Memorial Park which is situated directly across the river from our office building. As part of the clean-up effort following the devastation, a number of TfW colleagues volunteered to help clean up the Pontypridd Lido and Bowling Club.

Our volunteers also assisted the clean-up of both Pontypridd Town Council's Meadow Street Community Garden and Woodland, in Treforest, and Cynon Valley Organics, in the Cynon Valley, two community groups we'd previously supported through our Community Impact funding to improve their sites. As well as the organisation of volunteers, we also provided both groups with some additional impact funding to replace lost plants and supplies.



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At Tfw, we feel strongly about doing the right thing and supporting the communities we're a part of to flourish. Hence, we actively sought and created opportunities to help those around us to recover from the devastating impact of the storms.

Climate Change Resilience & Adaptation

In order to increase our response to climate risks, we've developed a comprehensive [Climate Adaptation and Resilience Plan](#) (CARP) to provide strategic direction and governance with the aim to ensure that climate resilience is embedded into new assets, maintenance programmes and decision-making processes. The CARP, published in 2023, is informed by and draws evidence from a range of sources, including Welsh policy and legislation such as the Environment (Wales) Act 2015 and the Well-being of Future Generations (Wales) Act 2015.

Since publishing our CARP in 2023, we've begun delivering against our commitments to climate adaptation. For example, we conduct site specific climate change risk assessments for our key assets, routes and facilities to account for the effects of climate change. These findings are used to implement mitigating measures to ensure we maintain a high standard of safety and service for our customers and key stakeholders. Measures include but are not limited to:

- Proactive maintenance schedules and condition monitoring
- Planning for adverse weather and implementing necessary control measures
- Appointing contractors to attend affected sites to conduct emergency maintenance and repairs on any sites and Tfw assets that are affected by floods and storms, for example.

In particular, we've embedded our lessons learned from the impact of previous storms, including Storm Dennis in 2020, into our approach to climate change resilience & adaptation. We review the impacts of extreme weather events on our services, assets and network to consider any opportunities for reducing the scale of impacts when similar events reoccur. This includes co-ordinating our approach to weather resilience with local authorities (and other risk management authorities) to ensure their emergency planning procedures accurately reflect any risks to communities and other third parties within shared land boundaries.

The damage and disruption caused by Storm Dennis had highlighted the need to prepare for low probability-high consequence events in a changing climate. Since then, we have implemented a number of features into our weather resilience strategy based on lessons we've learned. These include installing more weather monitoring systems on CVL assets (such as rain gauges), improving our trackside drainage to reduce the risk of surface water flooding on and near our tracks, as well as monitoring the condition of assets. We also account for adverse weather events in our transport planning and endeavour to reduce the recovery time after an incident.



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We also use learnings from these adverse weather events to build our working knowledge of how physical climate risks impact our railway network. This informs our approach to climate change risk assessments and transport scheduling for our assets and services on key routes. It's key we focus our efforts on ensuring we are aptly prepared should similar events reoccur, and our approach includes proactive asset maintenance, emergency planning procedures, and shared contingency plans with key stakeholders. As well as this, we are building a strong evidence base to steer longer term investment strategy towards more robust climate resilience & adaptation measures throughout our network.

I hope this letter finds you and the Committee well and the evidence I've provided supports your inquiry into the impact of Storm Bert and Storm Darragh in Wales. If you'd like me to further expand on any points raised or you have any questions, please get in touch.

Kind regards,

James Price
Prif Weithredwr / Chief Executive