

October 2024

The National Infrastructure Commission for Wales (NICW) was established in 2018 as an independent, non-statutory, advisory body to Welsh Ministers.

Its key purpose is to analyse, advise and make recommendations on Wales' longer term strategic economic and environmental infrastructure needs over a 5–80-year period.

NICW conducts studies into Wales' most pressing infrastructure challenges and makes recommendations to the Welsh Government.

The advice provided by NICW will be impartial, strategic and forward looking in nature.

NICW is accountable to the Welsh Ministers for the quality of its advice and recommendations and its use of public funding.

Nature and Community

Integrating nature and community as cross-cutting issues is crucial for creating sustainable and resilient solutions to flood risk management. Nature-based approaches, such as restoring wetlands and maintaining natural floodplains, enhance the environment's ability to absorb and mitigate floodwaters, reducing the impact on human settlements. These methods not only provide ecological benefits but also support biodiversity and improve water quality.

Meanwhile, involving the community ensures that flood management strategies are tailored to local needs and knowledge. Community engagement fosters a sense of ownership and responsibility, leading to better

preparedness, quicker response times, and more effective recovery efforts. By combining natural solutions with community involvement, flood risk management becomes more holistic, adaptive, and capable of addressing the complex challenges posed by climate change.

We believe that Nature and community have been insufficiently considered within flooding policy and practice. These two themes are overarching themes throughout our report and should be considered as integral to delivery of all our recommendations.

Our recommendations

Governance, Structures and Policy

1. Water Commissioner

By 2026, establish a new Water Commissioner with sufficient powers to be able to implement our recommended outcomes.

2. 30 Year Strategy

By 2026, create a long-term 30-year national flood & coastal erosion resilience strategy, building on a 30-year vision for flood resilience.

3. Nature As A Stakeholder

By 2028, set up the mechanisms to incorporate nature as a key stakeholder within flooding policy and implementation.

4. Land Use Planning

Avoid development on flood risk areas

5. Catchment Partnerships

By 2026, pilot and set up regional/ local Catchment partnerships.

Collaboration, Partnerships and Community

6. Wales Water Resilience Forum and Community Resilience Groups

By 2027, establish a new Water Resilience Forum for Wales along with community resilience groups.

7. Catchment Resilience Strategies

By 2026, streamline Flood & Coastal Erosion Risk Management plans into catchment resilience strategies.

8. Community Involvement

Involve communities in decision-making processes related to flood resilience.

Funding and Capacity

9. Climate Change Adaptation Fund

By 2026, Set up a new cross-sector climate change adaptation and resilience fund.

10. FCERM Investment Programme

Extend and align the current FCERM investment programme.

11. Funding Sources

Explore and diversify funding sources to offer an alternative to conventional funding streams.

12. Nature-Based Solutions

Set up a taskforce to explore how the uptake of nature-based solutions can be scaled and landscapes can be adapted to a future climate.

13. Householder Grants

Welsh Government to provide subsidies to private homeowners with the least means to build flood resilience at the property level.

Awareness, Skills and Data

14. Curriculum and Public Awareness

Increase awareness of flooding and climate change impacts in schools via the curriculum; and with the public through a national education campaign.

15. Skills

Support the development of blue skills and a new discipline for Water Environments and establish apprenticeships for the sector.

16. Community Training

Provide training and support for local councillors, town councils, and community councils on flood resilience

17. Data

Establish open and transparent access to data allowing communities access to open-source data so they understand flood risk better

Our Vision for a flood resilience in Wales by 2050

“Working collectively, alongside nature: a unifying vision and clear pathway helps create a vibrant partnership of society working together with nature to build resilience and adapt to the impacts of climate change.”

“The rapid innovations and changes of the late 2020s set Wales on a path to resilience that has marked it as a world-leader in community-led flood management. Success is fundamentally driven by good communication and shared responsibility between government, business and communities that allows collective and clear ownership and decision-making. By empowering communities to voice and act on their own futures with the support of

government, augmented by innovation, we have worked together to ensure a resilient, dynamic, and abundant future for generations to come”.

Adaptive Grounds: Our homes, infrastructure and landscapes are adaptable and water resilient.

The turning point for the Welsh Government and communities working on flood resilience in the 2030s was the understanding that the pace of climate change far outgrew any previous planned investments in flood management. By implementing long-term policy and planning which was supported by sustainable funding and financing mechanisms, Wales could prepare an adaptive response which considered sea level rise and precipitation changes over the next 100+ years. This supported the management of existing flood mitigation assets, the development of new flood mitigation schemes, and considered how to transition and adapt landscapes to a changing climate. The task was enormous, as the uncertainty around climate came from both coastal erosion and rising sea levels, as well as in-land rivers flooding rural and urban areas. However, national conversations, Citizens and Youth panels, shaped the plan and gave a sense of influence and hope even though there were hard decisions to be made.

Collective Strength: Representation and collective decision-making supports community action and resilience.

In 2050, transparency around planning for future climate resilience has increased and there is a better public understanding of how to be prepared for flood events. Wales uses River and Coast partnerships to represent voices from across the country, ensuring collective decision-making drives grass-roots innovation and improves communications between communities and the

government. Tangible inclusivity and diversity in decision-making considers all demographics, including ethnic minority groups and vulnerable populations, ensuring that flood resilience measures are equitable and just. There are funded roles (e.g. ‘Agents of Change’) for individuals, or community groups to provide additional support to at risk communities, with additional roles from business and industry. They work with communities to build capacity, raise awareness and develop local scale or “grass roots” community flood resilience plans, drawing on a designated funding pot and pool of technical engineers and flood specialists for support.

Water Environments: Wales is a hub for flood resilience and adaptation, working alongside nature to enable resilience.

The Well-being of Future Generations Act ensures Wales considers nature as a stakeholder, using the Nature Commons as a forward-looking approach of working alongside nature and water environments, developing a knowledge base and resources for the future communities to inherit and build on.

Predictive Data: Emerging technology supports open and transparent access to data which those in Wales understand and helps to steward landscapes.

Technology was harnessed to foster a systemic approach to predicting and managing flood risks across Wales. Cities are equipped with data-driven weather prediction models that provide real-time, hyper-localised forecasts of flood risks. Autonomous machines are deployed to monitor water levels, the structural integrity of flood defences and performance of Nature-based Solutions. Satellite data is freely shared between regions. This information is used daily by communities, businesses, the

Government and emergency responders to help manage responses to flood events up and down the country.

Resilient Roots: Action is empowered through education, training and skills.

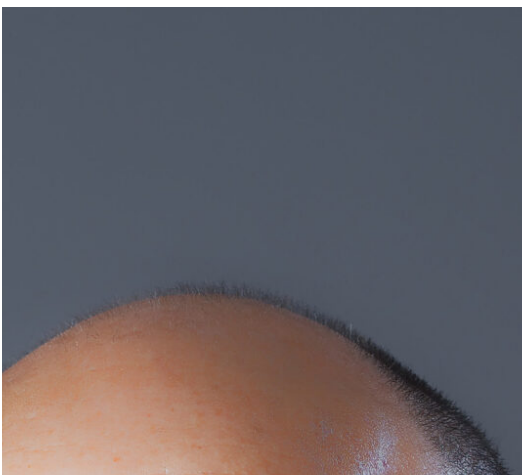
‘Working collectively alongside nature’ is one of the national campaign slogans which drew attention to Wales’s role in supporting planetary needs and developing climate resilience. Education and strengthening communities have become foundational. Schools regularly conduct flood preparedness exercises and include climate change in future skills required for generations to be resilient, embedding this knowledge from a young age. National campaigns make the experience of flooding tangible, ensuring every citizen and organisation understands flood risk and their role in it. Accountable government stakeholders and agencies build trust by working across sectors and communities to understand socioeconomic inequalities, tackle deprivation and improve flood responses in disadvantaged communities. Farmers and land stewards have increasingly embraced diversification, with regenerative farming practices that restore natural ecosystems driving sustainable growth in Wales’s rural economy. Communities have come together to thrive whilst agricultural land has begun to teem with wildlife not seen in such abundance for hundreds of years, as the soil underpinning ecosystems has been replenished with vital nutrients. This biodiversity has massively increased the sponginess of the soil further reducing the risk of flooding in a virtuous cycle of land, people and produce.

Rising Resilience: Leadership and integrated responses support a flood resilient Wales

As well as giving voice to nature through Nature Commons and river

and sea spirits, an independent Water Environments Commissioner was instigated to provide clear ownership of the direction of travel and ambition for a future flood resilient Wales, acting in the interest of communities across Wales. In tandem, coalitions of experts and communities were organised by the Welsh Government through River and Coastal partnerships. These nation-wide government-hosted catchment and coastal zone platforms provide resources about flood resilience and connect multiple disciplines, technical experts, the government, and communities to make decisions about the future of their regions, access shared information and distribute funding. Hailed as a huge success by once fragmented communities, the forums represent local management of rivers like Taff and Wye and coastlines across Wales. They bring together residents and organisations, allowing them to work together within a shared ecosystem. Following a radical restructure of the governance models by including the Nature Commons as a way of listening to nature, and appointment of a national Water Environments Commissioner, Wales is now considered a leader in resilient community infrastructure. Through national educational campaigns, new forms of funding that values nature, and an effort from the government to create River and Coastal Forums, the country is better prepared to tackle uncertainty around flooding.

Welcome



Flooding presents an increasing challenge to the people and communities of Wales.

We know that the public sector cannot protect every property. This knowledge