Cyd-Bwyllgor Corfforedig
Gogledd Cymru
North Wales
Corporate Joint Committee

North Wales Regional Transport Plan

Integrated Wellbeing Appraisal
Non-Technical Summary

(Draft)

Integrated Wellbeing Appraisal

Non-Technical Summary

Contents

1.   Non-Technical Summary

1.1   Purpose of the Non-Technical Summary

This document presents a summary, in non-technical language, of the Integrated Wellbeing Appraisal (IWBA) of the draft North Wales Regional Transport Plan (NWRTP).

1.2   What is the North Wales Regional Transport Plan (NWRTP)?

The NWRTP aims to solve transport problems in the North Wales area over the next 5 years (2025 - 2030). It will guide decisions on where to invest to address current and future local and regional transport issues. The plan shows how transport can support the delivery of the Llwybr Newydd, The Wales Transport Strategy and encourages growth and regeneration of the region.

The NWRTP includes policies to support the vision and ambitions of Llwybr Newydd, The Wales Transport Strategy.

A Monitoring and Evaluation Plan has been developed alongside the NWRTP to help ensure transport and climate change targets are met, while also contributing to measures set out in the Wales Transport Strategy Monitoring Framework.

The NWRTP should be read alongside the Regional Transport Delivery Plan (RTDP) which sets out local authority schemes that will be progressed to help deliver the NWRTP.

1.2.1   The vision
The vision that has been developed for the NWRTP states:

'North Wales will have a safe, sustainable, affordable, resilient, and effective integrated transport network that supports economic growth, prosperity and well-being'.

The vision is supported by four objectives, which will help monitor and evaluate the success of NWRTP:

1. **Improve digital connectivity and local services:** We will enable 30% or more of people in North Wales to work remotely by 2030 through better land use planning and improved digital connectivity, which should reduce the overall need to travel and enable shorter trips better suited to sustainable modes.

2. **Improved accessibility and transport choice:** We will develop infrastructure and services that provide people with a choice about how they travel for each journey and support sustainable economic growth through improved access to key settlements, employment, educational sites and tourist attractions. The accessibility of each key trip attractor should be improved, supporting the national mode share target of 45% of journeys to be undertaken by walking, wheeling, cycling and public transport by 2040.

3. **Enable decarbonisation through transition to a zero-emission fleet:** We will develop supporting infrastructure and support incentives to enable at least 50% of motor vehicles and all public buses operating in North Wales to be zero emission by 2035.

4. **Enable Sustainable Economic Growth:** We will develop a resilient, safe, well-maintained, and efficient transport network that delivers sustainable economic growth by improving accessibility to existing and planned employment areas. At least 50% of households in North Wales will have an increased range of travel within 1 hour by public transport, supporting access to key employment sites and regional centres by 2030.

1.2.2 Transport policies

The draft policies that have been developed for the NWRTP are based around policy themes which include:

- Enabling changes to travel behaviour
- Bus
- Coach, demand responsive and community transport
- Walking, wheeling and cycling
- Integration between modes
- Ports and freight
- Roads, streets, and parking
- Surface access to aviation
- Digital connectivity
- Land use planning

There are two further policy themes including rail and the strategic road network (including A roads). However, Ambition North Wales and local authorities have no direct control over these areas so there are no explicit policies in the NWRTP but aspirations instead.

1.3 What is the Integrated Wellbeing Appraisal (IWBA)?

Any transport policies, plans and programmes funded by the Welsh Government must include an integrated well-being appraisal that shows how it promotes well-being in Wales, contributing to the four well-being ambitions and the specific targets for transport. The IWBA guidance set out as part of Welsh Transport Appraisal Guidance (WelTAG) identifies a set of four questions to be asked when developing policies or projects. These are listed below along with topics that are considered under each of the questions:

1. How will it benefit **people** and **communities**? (equality, health and safety and confidence)

2. How will it benefit the **environment**? (reducing carbon emissions, benefitting biodiversity and ecosystems resilience and reducing waste)

3. How will it benefit **places** and the **economy**? (place-making, innovation, freight)

4. How will it benefit **culture** and the **Welsh language**? (arts and sport, the historic environment and opportunities to use and promote the Welsh language)

IWBA can be used for assessing the potential social, cultural, economic, and environmental impacts of a plan, and places sustainable development at the centre of decision making. It does not replace the need for statutory assessments (such as those required by the law) and so the IWBA is supported by different impact assessments including those relating to the environment, well-being, Welsh language, children's rights, equality, natural resources, health, rural proofing, climate change and ecology / habitats.

1.4 Engagement and consultation

The NWRTP adopts a collaborative and involved approach, considering the requirements of the Wellbeing of Future Generations (Wales) Act. Engagement with stakeholders has helped shape the NWRTP, for example the Welsh Government, local authorities and Transport for Wales have told us about what they want to see for the transport system in North Wales.

An IWBA scoping report was prepared and submitted to statutory consultees (including Natural Resources Wales and Cadw) for a 5-week period from 15th October until 19th November 2024. The scoping report outlined an approach to the impact assessments as part of the IWBA, the baseline data, relevant international, national and regional plans, policies and sustainability objectives, and the assessment methodology. It also suggested IWBA objectives to set a framework for assessment (the IWBA Framework).

The IWBA is submitted alongside the draft NWRTP for consultation for a period of 12 weeks (from 20 January to 14th April 2025).

Any comments received will be carefully considered and, where necessary changes will be made to address comments. Then the final NWRTP documents will be adopted and will be published alongside a statement that explains how the IWBA and feedback has shaped the documents.

1.5   Scope of the IWBA

The geographical scope of the IWBA is aligned with the North Wales region, i.e. the local authority areas of Isle of Anglesey, Wrexham, Conwy, Flintshire, Denbighshire, and Gwynedd (see Figure 1).
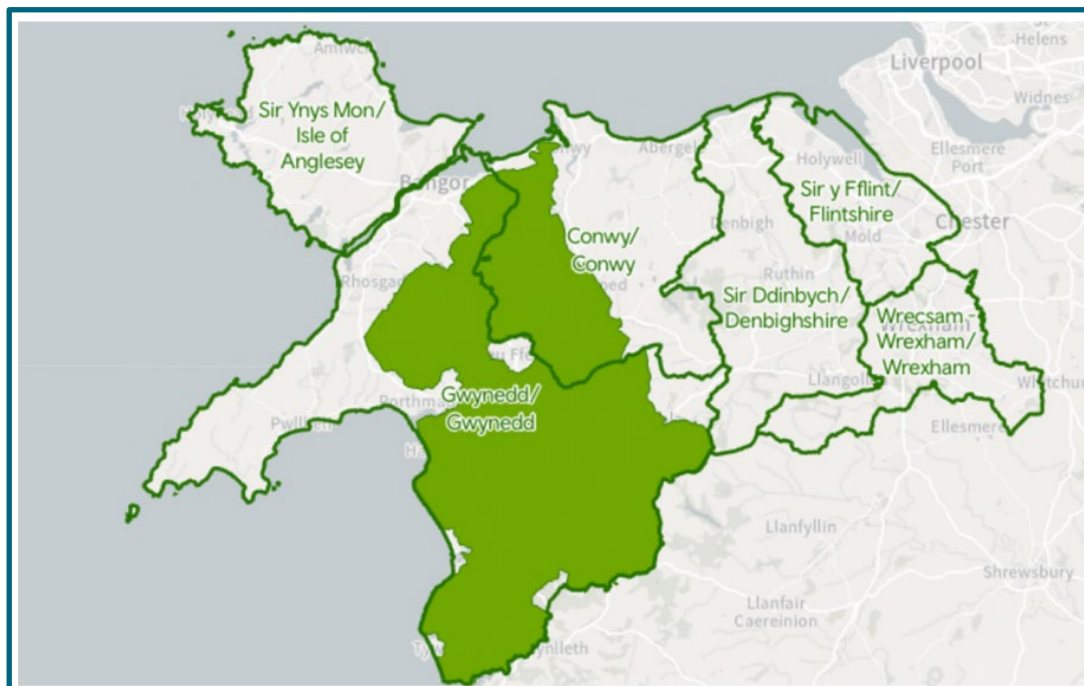

Figure 1: Local Authorities Covered By The North Wales Regional Transport Plan (With Eryri National Park In Green)

Consideration is also given to neighbouring areas of Wales and England, in particular Chester and Liverpool as there is significant migration both ways across the border in relation to employment, services (e.g. health) and education. The presence of coastal areas within study area also indicates that both terrestrial and relevant marine effects are possible and will need to be considered in the IWBA.

In terms of timescales, the NWRTP sets the 5-year plan for the region (2025-2030) which from a well-being appraisal perspective is 'short term'. The appraisal has identified that impacts resulting from the policies of the NWTRP would likely result in effects that extend beyond this five-year time frame and have been identified as 'long-term'.

1.6   IWBA objectives

The IWBA Framework encompasses a set of objectives that have been developed to assess to the sustainability of the polices (or group of policies) set out in the draft NWRTP. These are complementary to the NWRTP four objectives and the IWBA objectives are required to provide a means by which the environmental performance of the plan can be assessed.

The IWBA objectives, listed in Table 1 alongside the appraisal questions, were initially identified at scoping stage and have been created to take account the following:

- **NWRTP Context**: key themes from the Plans, Programmes and [sustainability] Objectives (PPO) review (IWBA Report, Section 3.2) and the key sustainability issues and opportunities from the baseline data review (IWBA Report, Section 4.2), have been used develop appraisal objectives specific to the NWRTP.

- **Well-being Goals**: The Wales Transport Strategy's (WTS) well-being ambitions are closely tied to the goals of the Well-being of Future Generations Act 2015. This legislation emphasises long-term well-being, environmental protection, and social progress.

- **Statutory assessments** – the appraisal objectives have been developed to encompass the requirements of the statutory assessments outlined in Section 1.3 above and their relevant regulations.

In summary, the IWBA Framework provides a structured approach to ensure that the NWRTP aligns with broader well-being goals and contributes to sustainable development in North Wales.

Each of the questions outlined in Section 1.3 have been answered considering the IWBA objectives to consider a wide range of potential effects of the NWRTP policies. Table 1 identifies which IWBA objective is of relevance to each of the IWBA topics scoped into the appraisal, as well as which WTS ambition they aim to address.

Table 1 - IWBA objectives, appraisal questions and how they align with each IWBA topic and overarching theme

IWBA Objective	How will we test if the objective has been met? Will the NWRTP……	Relevant IWBA Topic	WTS ambition alignment
1. Support the delivery of housing and local services to meet the needs of local communities	• Support the creation of communities which offer viable and sustainable transport options within and between locations? • Improve access to local services?	Population Human health Infrastructure Economy	People and Communities
2. Reduce inequality and promote community cohesion	• Improve environmental conditions and quality of life for the most deprived communities? • Support the needs of members of society who have protected characteristics? • Improve the accessibility of public transport and active travel for all members of society? • Engage with stakeholders, partners and local communities? • Create opportunities for community participation? • Support the transport needs of children?	Population Human health Cultural heritage Transport Economy	People and communities

IWBA Objective	How will we test if the objective has been met? Will the NWRTP……	Relevant IWBA Topic	WTS ambition alignment
3. Improve the health and wellbeing of the local population, including with respect to physical and mental health	- Encourage uptake in active travel? - Improve connectivity between local communities, particularly within rural areas? - Reduce social isolation? - Reduce physical damage and improve the safety of transport services and infrastructure? - Improve access to key health services? - Improve access to recreation activities? - Improve public access to green spaces?	Population Human health Land use and landscape Air quality Noise Economy	People and communities
4. Conserve, protect and enhance biodiversity and geodiversity interests, including through safeguarding important sites, species and habitats.	- Cause harm or any deterioration in the condition of any designated sites? - Result in the loss of valuable habitats? - Deliver opportunities to restore or create semi-natural habitats? - Deliver net benefit for biodiversity and contribute to ecosystem resilience?	Biodiversity Ground conditions Water environment	Environment
5. Protect and enhance local landscape character, designations and visual amenity	- Cause harm to any designated or protected landscapes? - Result in the enhancement to the condition and character of any protected or designated landscapes? - Reduce the adverse impacts of road traffic and parking on landscapes and designations? - Result is loss of amount of Best and Most Versatile (BMV) land? - Contribute to the efficient management of travel in tourist areas during peak periods?	Land use and landscape Cultural heritage Economy	Places and economy

IWBA Objective	How will we test if the objective has been met? Will the NWRTP……	Relevant IWBA Topic	WTS ambition alignment
6. Protect and enhance the local cultural heritage, including the Welsh language	• Cause direct or indirect harm to designated heritage assets? • Enhance the condition or setting of designated heritage assets? • Provide measures to avoid and/or mitigate harm to non-designated heritage assets? • Support Welsh speaking communities? • Include initiatives to implement and encourage use of Welsh language?	Population Cultural heritage	Culture and Welsh language
7. Protect and enhance the health of groundwater, surface and coastal waterbodies, water quality and water resources.	• Have a negative impact on water resources used for water abstraction? • Have a negative impact on the quality of water resources? • Have a negative impact on the general health of waterbodies? • Help to achieve the WFD water body measures and support WFD waterbodies achieve 'good' ecological status?	Ground conditions Water environment	Environment
8. Support a transition toward a transport sector with reduced (including zero) carbon emissions and enhance the resilience of transport infrastructure to withstand the effects of climate change.	• Help meet Wales targets to be 'net zero' by 2050? • Increase modal shift from private cars to public transport and active travel. • Include opportunities to support decarbonisation of the transport section? • Support an uptake in the use of cleaner fuels for transport, including electric vehicles? • Include measures to increase the resilience of existing and new infrastructure to the effects of climate change? • Reduce the impact of extreme weather events on the transport network? • Reduce the need to travel to access key amenities and services?	Climatic factors Transport	Environment
9. Protect and enhance local air quality.	• Improve air quality for communities? • Cause any deterioration in air quality? • Include initiatives to encourage the uptake of active travel and public transport?	Human health Air quality	Environment

IWBA Objective	How will we test if the objective has been met? Will the NWRTP......	Relevant IWBA Topic	WTS ambition alignment
10. Reduce disturbance from transport related noise and vibration to local communities.	• Improve the local soundscapes? • Result in a reduction in noise pollution? • Include initiatives to encourage the uptake of active travel and public transport?	Human health Noise	People and communities
11. Incorporate circular economy principles to reduce the use of raw materials.	• Use sustainably sourced materials and ensure materials and resources are used efficiently? • Include transport initiatives and infrastructure that enable recycling and waste to be collected, transported, sorted and managed effectively? • Support the transition of waste collection fleets to cleaner fuels, such as use of EV? • Encourage use of locally sourced material?	Resources and waste Economy	Environment
12. Create an integrated transport system that facilitates efficient and safe movement of both people and freight, contributing to increased economic prosperity in the region.	• Increase the land available for employment development? • Support equitable access to employment, education and training opportunities? • Improve the reliance and resilience of the transport network to better support businesses and workers? • Encourage regeneration and investment, particularly in more deprived areas? • Improve access between England and North Wales and improve access between North and South Wales? • Encourage sustainable access to tourist facilities and attractions? • Support the rural economy? • Protect and enhance the natural beauty of the area?	Population Economy Transport	Places and economy

1.7   Appraisal scoring

The NWRTP options are assessed against the IWBA objectives using the corresponding questions identified in Table 2.

A score has been assigned to each objective using the criteria outlined in Table 2 depending on the type and level of effect that the NWRTP policy, or group of policies, is likely to have on the objective. This is accompanied by a qualitative appraisal (non-numerical) which describes the identified likely effects, providing references where appropriate.

uchelgaisgogledd. cymru | ambitionnorth. wales

Table 2: IWBA scoring criteria

IWBA Score	Definition
++	Likely significant positive effect
+	Likely minor positive effect
0	Likely negligible effect
-	Likely minor negative effect
--	Likely significant negative effect
?	Likely effect uncertain
+/-	Likely to be a mix of positive and negative effects

1.8   Appraisal outcomes

The IWBA Report and its appendices present the full and detailed assessment results for the NWRTP. A summary of the IWBA assessment scores is presented in Table 3 followed by an assessment narrative in response to the four ambitions of the WTS in Section 1.9.

Table 3 – IWBA scores for each policy/policy group against each IWBA Objective

IWBA Objectives / Policy group	1. Delivery of housing and local services	2. Reduce inequality and promote community cohesion	3. Health and Wellbeing	4. Biodiversity	5. Landscape character areas and designated sites	6. Welsh culture and language	7. Water health	8. Decarbonisation	9. Air quality	10. Noise and local soundscapes	11. Circular economy and reduced raw material use	12. Economic prosperity
WTS ambition	People & communities	People & communities	People & communities	Environment	Places and Economy	Culture & Welsh language	Environment	Environment	Environment	People & communities	Environment	Places & Economy
Enabling changes to travel behaviour												
Policy CB1 – CB7: Providing people with a choice about how they commute	++	?	++	?	+/-	+	+	+	+	+	+	++
Policy CB8 – CB12: Providing people with choices about how they access services and education	++	++	++	?	0	+	+	++	+	+	+	+
Policy CB13: Providing people with choices in rural and semi urban areas	+	++	++	+	0	+	+	+	+	+	+	+
Policy CB14 - CB23: Providing people with information to make more sustainable travel choices & supporting the tourism sector	0	++	+	+	+	+	+	+	+	+	+	+
Bus, coach and community transport												
Policy PT1: Bus Franchising	+	++	+	+	+	+	+	+	+	+	+	++

uchelgaisgogledd. cymru | ambitionnorth. wales

IWBA Objectives / WTS ambition / Policy group	1. Delivery of housing and local services	2. Reduce inequality and promote community cohesion	3. Health and Wellbeing	4. Biodiversity	5. Landscape character areas and designated sites	6. Welsh culture and language	7. Water health	8. Decarbonisation	9. Air quality	10. Noise and local soundscapes	11. Circular economy and reduced raw material use	12. Economic prosperity
	People & communities	People & communities	People & communities	Environment	Places and Economy	Culture & Welsh language	Environment	Environment	Environment	People & communities	Environment	Places & Economy
Policy PT2 - PT3: Decarbonising the bus fleet	0	+	+	+	0	0	+/-	++	+	0	+	0
Policy PT4 – PT5: Bus Transformation Network	+	++	+	+	+	+	+	+	+	+	+	++
Policy PT6 – PT8: Improving bus infrastructure	+	++	+	+	+	+	+/-	+	+	+	+	+
Policy PT9 – PT10: Making bus travel easier	+	++	+	+	+	+	+	+	+	+	+	+
Coach, demand responsive and community transport												
Policy PT11 – PT12: Fflecsi and Ring & Ride services	++	++	+	+	0	+	+	?	?	+	+	+
Policy PT13: Taxi	+	+	+	+	0	+	0	+	+	0	+	+
Policy PT14: Longer distance coach services	0	+	+	0	0	+	+	+	+	+	+	+
Policy PT15: Community involvement in rail	+	+	+	+	0	+	0	+	+	0	+	+

uchelgaisgogledd. cymru | ambitionnorth. wales

IWBA Objectives	1. Delivery of housing and local services	2. Reduce inequality and promote community cohesion	3. Health and Wellbeing	4. Biodiversity	5. Landscape character areas and designated sites	6. Welsh culture and language	7. Water health	8. Decarbonisation	9. Air quality	10. Noise and local soundscapes	11. Circular economy and reduced raw material use	12. Economic prosperity
WTS ambition / Policy group	People & communities	People & communities	People & communities	Environment	Places and Economy	Culture & Welsh language	Environment	Environment	Environment	People & communities	Environment	Places & Economy
Walking, Wheeling and Cycling												
Policy AT1 – AT2: Further improving infrastructure	+	++	++	+/-	0	+	+	++	+	+	+	+
Policy AT4 – AT6: Making active travel more attractive	+	++	++	+/-	0	+	+	++	+	+	?	+
Policy AT7 – AT11: Leadership and funding	+	+	+	0	0	+	+	+	+	+	+	+
Policy AT12 – AT14: Cycle hire, E-bikes and E-scooters	+	++	+	0	0	+	0	0	0	0	0	+
Integration between modes												
Policy IN1 – IN3: Mobility hubs and Gateway stations	+	+	+	+	+	+	+	+	+	+	+	+
Policy IN4: Integration	+	++	++	+	+	+	+	+	+	+	+	++
Policy IN5 – IN6: Park & ride or Park & share schemes	+	+/-	0	+/-	+	+	+	+	0	0	+	+/-

uchelgaisgogledd. cymru | ambitionnorth. wales

IWBA Objectives / Policy group	1. Delivery of housing and local services	2. Reduce inequality and promote community cohesion	3. Health and Wellbeing	4. Biodiversity	5. Landscape character areas and designated sites	6. Welsh culture and language	7. Water health	8. Decarbonisation	9. Air quality	10. Noise and local soundscapes	11. Circular economy and reduced raw material use	12. Economic prosperity
WTS ambition	People & communities	People & communities	People & communities	Environment	Places and Economy	Culture & Welsh language	Environment	Environment	Environment	People & communities	Environment	Places & Economy
Ports and Freight												
Policy PF1 – PF2: Ports	+	+	+/-	--	+	+	?	+/-	+/-	+/-	-	++
Policy PF3: Road freight	+	+	+	?	?	+	-	?	+/-	+	0	0
Policy PF4: Low Emission HGVs	0	+	+	0	0	0	+/-	++	+	0	+	+
Policy PF5 – PF8: Local deliveries	+	+	+/-	?	?	?	+/-	+	+	+	+	+
Policy PF9: Rail freight	0	+/-	+	0	0	0	+	+	+	+	+	+
Roads, Streets and Parking												
Policy RS1 – RS2: Maintenance	+	+	+	+	+	+	0	+	0	+	0	+
Policy RS3 – RS4: Road Safety	++	+	+	0	0	0	0	+	+	+	+	+
Policy RS5 – RS6: Public car parking in towns and cities	+/-	+/-	+/-	+	+	0	+	+	+	+	+	+
Policy RS7 – RS11: Low emission vehicles	+	+	+	+	0	0	+	+	+	0	+	+
Policy RS12 – RS13: Car clubs / sharing	+	++	+	0	0	0	0	+	+	0	+	+

uchelgaisgogledd. cymru | ambitionnorth. wales

IWBA Objectives	1. Delivery of housing and local services	2. Reduce inequality and promote community cohesion	3. Health and Wellbeing	4. Biodiversity	5. Landscape character areas and designated sites	6. Welsh culture and language	7. Water health	8. Decarbonisation	9. Air quality	10. Noise and local soundscapes	11. Circular economy and reduced raw material use	12. Economic prosperity
WTS ambition / Policy group	People & communities	People & communities	People & communities	Environment	Places and Economy	Culture & Welsh language	Environment	Environment	Environment	People & communities	Environment	Places & Economy
Surface access to aviation												
Policy AV1: Surface access to aviation	+	+	0	0	0	0	0	--	+	0	+	+
Digital Connectivity												
Policy DC1: Digital connectivity	+	+	+	+	0	+	+	++	+	+	+	+
Land use planning												
Policy CB19 – LU6	The Strategic Development Plan for North Wales is also the responsibility of the North Wales Corporate Joint Committee. However, as it will itself require various statutory assessments, this has not been included within this IWBA.											

1.9 Wales's Wellbeing Ambitions

The well-being ambitions set out in the Wales Transport Strategy contribute to the goals in the Well-being of Future Generations (Wales) Act 2015. Each of the objectives in the appraisal contribute to the four well-being ambitions. These are explored in more detail in this section. Full appraisals and associated references are included in the IWBA report and associated appendices.

1.9.1 How will the NWRTP benefit people and communities?

IWBA Objectives 1, 2, 3 and 10 assess impacts of the NWRTP on equality, health and safety, catering directly to the wellbeing of people and communities. The policies play a key role in creating a transport system that promotes better health outcomes and fosters greater equality across Wales, aligning with Welsh Government's Accessible and Inclusive Public Transport Objectives[1], the priorities set out in the Action on Disability[2] framework and Connected Communities[3] and Age friendly Wales[4] strategies.

Objective 1 - Support the delivery of housing and local services to meet the needs of local communities

The appraisal identifies that policies (AT1-AT14) would promote active travel infrastructure, encouraging healthier lifestyles by making it easier to walk and cycle to essential services such as healthcare and education. Increased physical activity through active travel also helps reduce rates of obesity and over 20 chronic conditions such as coronary heart disease, stroke, type 2 diabetes in local communities, helping meet commitments according to 'Healthy Weight: Healthy Wales' Strategy[5].

Improved local delivery systems and reduced congestion (PF1-PF9) benefit the environment and local amenity, contributing to better public health as a result of improved air quality, reduced noise and lower anxiety caused by busy roads.

Enhancements (PT1-PT15) would contribute to more reliable access to essential services, particularly benefitting deprived areas and rural communities. Improved ticketing, journey times, and service reliability make public transport more accessible. Flexible, community-led transport solutions would be designed to meet specific local needs, fostering social inclusion and cohesion.

Policies (DC1-DC2) encourage remote working and access to services, increasing employment opportunities, (particularly for groups who are less able to travel for work (e.g. disabled people, carers, and people with no access to private transport) and digital literacy, which helps more people use public transport confidently.

---

[1] Welsh Government, Policy Statement: Accessible and Inclusive Public Transport Objectives, December 2017. Available online at: https://www.gov.wales/sites/default/files/publications/2017-12/policy-statement-accessible-and-inclusive-public-transport-objectives.pdf [Accessed 02/12/2024]

[2] Welsh Government, Action on Disability: The Right to Independent Living, 2019. Available online at: action-on-disability-the-right-to-independent-living-framework-and-action-plan.pdf [Accessed 02/12/2024]

[3] Welsh Government, Connected Communities Strategy, 2020. Available online at: https://www.gov.wales/sites/default/files/publications/2020-02/connected-communities-strategy-document.pdf [Accessed 02/12/2024]

[4] Welsh Government, Age friendly Wales: our strategy for an ageing society, 2021. Available online at: https://www.gov.wales/age-friendly-wales-our-strategy-ageing-society-html [Accessed 02/12/2024]

[5] Welsh Government, Healthy Weight Strategy, 2019. Available online at: https://www.gov.wales/sites/default/files/publications/2019-10/healthy-weight-healthy-wales_0.pdf [Accessed 02/12/2024]

Improvements to the road infrastructure (RS1-RS13) make roads climate-resilient and safer, reducing the risk of accidents and associated costs. Encouraging sustainable transport options through controlled parking charges and reallocating space from parking (RS5-RS6) aims to reduce reliance on private vehicles, potentially lowering accident rates.

Overall, these policies aim to create a more inclusive, healthier, and safer transport system by improving public transport, active travel routes, and road infrastructure, while also addressing the specific needs of local communities.

Objective 2 - Reduce inequality and promote community cohesion

The appraisal finds that the enhancement of public transport services would create a transport system that promotes health, equality, and safety. These policies focus on improving access to essential services, employment, education, and recreational opportunities, particularly benefitting socio-economically disadvantaged people, younger and older individuals, disabled people, and those from global ethnic majority groups. By fostering an integrated transport network and encouraging active travel modes like walking, wheeling and cycling, these policies enhance social interactions, reduce isolation, and improve community well-being.

The policies prioritise connecting rural areas to essential services, thereby reducing inequality of opportunity for rural communities. Flexible, community-led transport solutions and the promotion of safe taxi services further support vulnerable populations such as older people, children and disabled people. They also benefit those groups at higher risk of hate crimes such as women, racialised groups and people from the LGBTQ+ community and who are more likely to use taxis as they are deemed safer than standard public transport.

Improvements in active travel infrastructure and multimodal transport would make walking, wheeling, cycling, and public transport more accessible for everyone, reducing transport inequality. Furthermore, policies that promote port development and enhance public transport services to these ports would boost economic prosperity for coastal communities in North Wales, which face higher levels of deprivation compared to other parts of the region. Promoting low-emission vehicles would offer health benefits, especially for vulnerable groups sensitive to air pollution (e.g. children, pregnant women, older people, people with respiratory disease).

Overall, NWRTP policies would contribute to the enhancement of community bonds, promote economic development and improve equality of opportunity for communities throughout North Wales.

Objective 3 - Improve the health and wellbeing of the local population, including with respect to physical and mental health

The appraisal highlights that the policies aim to develop a transport system that enhances health and safety by improving public transport and active travel routes. This encourages physical activity thereby reducing the risk of obesity and other chronic diseases. The policies focus on creating sustainable, accessible transport that reduces social isolation and improves connectivity to healthcare, recreation, and community facilities. These improvements would result in health benefits for everyone but would particularly benefit more vulnerable groups who rely more on public transport, such as older people, disabled people and people experiencing socioeconomic deprivation.

Enhancements to the bus network and demand-responsive transport in rural areas would also provide more sustainable transport options and improve access for those without a private vehicle in these areas to essential services. This would enhance social connectivity, and promote physical activity, resulting in improved physical and mental health outcomes.

uchelgaisgogledd. cymru | ambitionnorth. wales

Integrated transport networks simplify transitions between modes, encouraging public transport uptake with improved ticketing systems and making it easier to navigate whilst also potentially reducing costs for passengers. This would help people who are more nervous travellers, or those who find existing systems overly complicated and not user friendly. The improvements in affordability would also be disproportionately beneficial for people experiencing socio-economic deprivation, and those living in more rural areas, reducing social isolation and increasing access to employment and training which are strong determinants of both physical and mental health.

Port development policies are likely to result in mixed health outcomes, balancing sustainable transport options, and improved connectivity to employment, with potential air quality issues from increased HGVs in the area. Road and street policies improve safety and support public transport initiatives, while digital connectivity policies reduce travel needs, alleviating stress and improving employment access, particularly for people with caring responsibilities (such as parents of young children) or people with disabilities.

Objective 10 - Reduce disturbance from transport related noise and vibration to local communities

NWRTP's policies aim to enhance sustainable transport options and improve accessibility and connectivity, leading to a shift from private car use to active travel and public transport. This shift is expected to reduce traffic and subsequently reduce levels of noise and vibration, benefitting noise priority zones and residential areas (particularly residential areas along stretches of the stretches of the A55, A47, A4087, A547, A5119, A494, A550, A483 and A5152).

Enhancements of port facilities and subsequent increases in freight movements may increase noise locally, although careful site selection can mitigate this. Policies aimed at improving facilities for HGVs (and their drivers) include the development of freight consolidation centres and specific parking areas/services for HGVs that are away from town centres and residential areas. This, along with encouraging more rail freight would reduce HGV traffic in town centres which, along with increased EV use, would further decrease noise disturbances. Road maintenance and safety policies would reduce noise that can be a problem along poorly maintained roads. Additionally, digital connectivity initiatives will reduce the need to travel, particularly for work, and improve access to public transport information. This promotes sustainable travel and reduces private vehicle use, contributing to a quieter, healthier, and safer transport system

1.9.2 How will the NWRTP benefit the Environment?

IWBA Objectives 4, 7, 8, 9 and 11 assess impacts of the NWRTP on the environment, incorporating aspects relating to reducing greenhouse gas emissions from transport, benefitting biodiversity and ecosystems resilience and reducing waste. The policies aim to increase use of active travel and public transport, and/or increase use of low emission vehicles, this would result in a reduction in emissions and pollution run off from roads, both of which can adversely impact species and habitats. The policies include decarbonisation initiatives that reduce use of raw materials (i.e. fuels), resulting in improved air quality and climate resilience, contributing to Wales Climate change targets and carbon budgets.[6]

Objective 4 - Conserve, protect and enhance biodiversity and geodiversity interests, including through safeguarding important sites, species and habitats

The NWRTP's policies aim to reduce greenhouse gas emissions, maintain biodiversity, and enhance ecosystem resilience by promoting active travel, public transport, and low-emission vehicles.

---

[6] Welsh Government, Climate change targets and carbon budgets, 2021. Available online at: https://www.gov.wales/climate-change-targets-and-carbon-budgets [Accessed 02/12/2024]

These policies encourage a shift away from private car use, reducing traffic emissions and pollution caused by road runoff, and therefore mitigating the adverse impacts of poor air quality and poor water quality on species and habitats. Improved sustainable travel options to tourist areas and attractions would help prevent the ecological damage that can occur from inappropriate parking, which is a particular problem in Eryri National Park. However, it could also potentially increase visitor pressures to these areas resulting in damage to ecological habitats.

Currently, it is unclear if transport infrastructure improvements will require additional land. This is especially relevant to the port and freight infrastructure policies, as development could threaten biodiversity at protected sites like the Anglesey Tern Special Protection Area and the North Anglesey Marine Special Area of Conservation. Development activities in these areas may increase pressure on these sensitive habitats. Careful planning at project level would therefore be essential to avoid negative impacts on biodiversity and geodiversity from physical disturbance when/if land is required.

Policies that seek to enhance place making within urban centres by replacing parking spaces with ecological enhancements would contribute positively towards net benefit for biodiversity, provided they are designed sensitively using appropriate species planting.

Objective 7 - Protect and enhance the health of groundwater, surface and coastal waterbodies, water quality and water resources

NWRTP policies aim to reduce greenhouse gas emissions and protect water health and biodiversity interests by promoting public transport and active travel routes, encouraging a shift away from private vehicles. Policies such as PF9 support rail freight, while DC1-DC3 focus on digital connectivity to reduce the need to travel for employment, thus decreasing road traffic and its associated pollutants. This reduction benefits aquatic ecosystems by lowering the amount of oil, grease, and airborne pollutants entering waterways. However, some policies, such as PF3, which improve HGV infrastructure, may increase HGV traffic, pollution and carbon emissions in certain areas such as the routes that provide access to the ports. Additionally, the development of hydrogen hubs (PF4) and port expansions (PF1-PF9) could negatively impact water resources and quality if not properly managed due to the large volumes of water required for hydrogen production.

Objective 8 - Support a transition toward a transport sector with reduced (including zero) carbon emissions and enhance the resilience of transport infrastructure to withstand the effects of climate change

NWRTP policies aim to create a sustainable transport system that reduces greenhouse gas emissions and makes the network more resilient to climate change impacts such as flooding. By encouraging a shift to public transport and active travel, along with integrating zero-emission vehicles into the public transport fleet, these policies would lower carbon emissions. Other policies which would contribute to decarbonisation of the transport sector include those related to development of community-led transport initiatives, hydrogen hubs, enhancement of rail freight options, promotion of electric vehicles including improved EV charging infrastructure and e-cargo bikes for local deliveries.

Additionally, digital connectivity policies promote remote work and improve access to public transport information, reducing the need for travel and encouraging a shift to more sustainable modes of transport; both of which help reduce emissions.

uchelgaisgogledd. cymru | ambitionnorth. wales

Objective 9 – Protect and enhance local air quality

NWRTP's policies aim to reduce greenhouse gas emissions and enhance air quality by promoting active travel, public transport, and low-emission vehicles.

Policies CB1-CB23, PT1-PT10, AT1-AT6, and IN1-IN6 encourage a shift from private cars to sustainable transport, improving air quality. Policies PT11-PT13 and DC1-DC3 enhance accessibility and connectivity, further supporting this shift to sustainable transport modes. Policies PT2-PT3, AT12-AT14, PF4, and RS7-RS11 support the transition to zero-emission vehicles, benefitting air quality, especially in urban centres like Wrexham and Bangor, but also in other urban centres. Port and freight policies (PF1-PF9) promote sustainable transport to ports and rail stations, though increased HGV movements encouraged by improvements to port infrastructure may adversely impact local air quality. Policies DC1-DC3 would contribute to a reduction in emissions by facilitating remote working and improving digital access to public transport information that would make it easier and more convenient for people to use public transport.

Objective 11 - Incorporate circular economy principles to reduce the use of raw materials

There are no policies within the NWRTP that directly incorporate circular economy principles. However, for the purpose of this IWBA objective, fuel has been considered a raw material. Policies proposed within the NWRTP aim to improve sustainable transport options and enhance their accessibility, encouraging a shift from private car use to active travel and public transport. This, in addition to policies which reduce the need to travel (e.g. improved digital connectivity that enables remote working) would reduce fuel consumption and would be enhanced further through public transport itself using increased numbers of low/zero emission vehicles.

The promotion of cleaner fuels such as developing hydrogen hubs at Deeside and Holyhead would also support use of locally sourced materials. While infrastructure development may require material consumption, there is no specific information available at this stage and therefore impact is currently uncertain. Growth at ports could increase HGV movements and fuel use, but policies supporting cleaner fuels and EV infrastructure could help mitigate any associated adverse effects.

1.9.3   How will the NWRTP benefit places and the economy?

IWBA Objective 5 and 12 assess impacts of the NWRTP on places and the economy, evaluating how policies contribute to place-making, innovation and sustainable freight movements. Initiatives outlined in the policies can help reduce tourism induced road congestion and parking pressures, thereby mitigating adverse impacts of inappropriate parking on visual amenity in these areas and maintaining the integrity of local landscapes. Improved sustainable transport connectivity to economic hubs and tourist attractions, encourages regeneration and investment in more deprived and rural areas. Policy initiatives also contribute to improved access between England and North Wales and North and South Wales for employment and tourism and enhance freight movement, contributing to economic prosperity.

Objective 5 - Protect and enhance local landscape character, designations and visual amenity

Policies CB1-CB23 and PT1-PT15 focus on enhancing public transport services and active travel routes contributing towards mitigating the adverse impacts of increased traffic, particularly in sensitive areas such as Eryri National Park. By promoting sustainable travel options, these policies can help reduce tourism induced road congestion and parking pressures, thereby mitigating adverse impacts of inappropriate parking on visual amenity in these areas and maintaining the integrity of local landscapes.

uchelgaisgogledd. cymru | ambitionnorth. wales

Transport infrastructure enhancements may result in adverse effects on designations and landscapes where physical changes are required (e.g. road building, port expansion, and parking or active travel infrastructure) so careful planning and implementation will be crucial at project level to ensure that any associated developments do not impact the area's scenic and cultural value.

While policies AT1-AT14 support improvements to active travel infrastructure, making active travel more accessible, even to tourists, the policies are unlikely to reduce vehicle usage in more remote areas which are noted for their special landscape character. Policies IN1 - IN6 promote the development of mobility hubs and better integration of public transport, facilitating transitions between transport modes and supporting a modal shift from private vehicles to sustainable transport. This shift is expected to alleviate adverse effects of traffic congestion and parking pressures on popular tourist destinations, enhancing visual amenity.

Reallocation of road and parking space and discouraging single occupancy car use through parking charges that is advocated through policies RS5 – RS6, could result in reduced road traffic and parking pressures, enhancing the visual amenity of towns and cities. This would be further enhanced where parking areas are reallocated to the development of high-quality places.

Objective 12 - Create an integrated transport system that facilitates efficient and safe movement of both people and freight, contributing to increased economic prosperity in the region

Policies related to enabling changes to travel behaviour (CB1- CB23) focus on improving public transport services and active travel routes to major employment sites (such as Deeside Industrial Park, Wrexham Industrial Estate, and Chester Business Park), education and travel destinations. This supports equitable access to employment, education, and training opportunities, particularly benefitting communities in coastal towns that experience higher levels of social deprivation as well as commuters to investment zones.

Community led transport initiatives improve the reliance and resilience of the transport network, supporting businesses and workers and encouraging sustainable tourism. Improved sustainable transport connectivity to economic hubs and tourist attractions, encourages regeneration and investment in more deprived and rural areas.

Policy initiatives improving sustainable transport connectivity also contribute to improved access between England and North Wakes and North and South Wales for employment and tourism, further enhancing economic prosperity.

The policies related to bus, coach and community transport (PT1- PT10, IN4) focus on improving bus services, facilitating travel by public transport between major areas of employment both in North Wales and adjacent areas of Northern England including Chester and Deeside and focusing on target areas of concerns like the Menai crossings. By fostering connectivity between communities and these employment hubs, the policies seek to provide equitable access to job opportunities, education, and essential services, particularly benefitting people experiencing socioeconomic deprivation and individuals who rely more on public transport modes. Policies include initiatives to design routes and services to meet customer needs, enhancing connectivity and access to opportunities and services.

Policies PT11- PT15 focus on demand-responsive transport solutions enhancing safety, accessibility and flexibility. The policies support local economies by improving access to workplaces for people without access to a private car and extend tourism geographies accessible by public transport. This can further encourage regeneration and investment in more deprived areas. The integration of low-emission vehicles strengthens the transport network's resilience, mitigating risks from fossil fuel disruptions.

Policies supporting improvements to active travel infrastructure (AT1-AT14, IN1-IN2) are likely to encourage more sustainable travel (including more public transport uptake) to access educational, training and employment opportunities benefitting long term economic prosperity of the region. AT12 - AT14 support cycle/e-bike hire generating income for these businesses and facilitating active travel to and from city centres among tourist, supporting local economies.

Policies IN5-IN6 relate to improvements to Park & Ride and Park & Share schemes, which would contribute to reduced congestion in urban centres. Whilst lower congestion reduces travel time (and therefore frees up time for more productive work or training) and may encourage businesses to locate in an area (due to better local amenity), it may have the opposite effect if subsidies are required from the local economy, therefore stifling economic growth[7]. However, it has also been shown that P&R projects are most successful where they are explicitly for providing more parking for economic growth or traffic management reasons, rather than to enhance sustainable mobility[8]. Economic outcomes would therefore depend on the location and intention of the P&R and P&S facilities.

Policies PF1-PF2 support the growth of port developments providing more employment opportunities and contributing to economic growth. This would encourage regeneration and investment in areas around ports of Holyhead, Anglesey and Mostyn, benefitting more deprived communities in the areas. The policies also focus on freight and improve connectivity beyond the ports, further boosting economic development. By supporting the development of hydrogen hubs, PF4 contributes to increased employment opportunities in North Wales. Further, the introduction of freight consolidation centres through PF6 - PF7, could create new employment opportunities. A shift to rail freight (PF9) would improve reliance and resilience of the transport network (through improved rail freight reliability, capacity and frequency, and also reducing congestion on the roads) better supporting businesses and workers and encouraging investment in the region.

Policies RS1- RS11 relating to roads, streets and parking, promote safe, climate-resilient and reliable transport links to improve access to employment, education, and tourism. Sustainable transport infrastructure such as P&R, P&S schemes and EV charging infrastructure, could improve road and travel conditions, offering lower travel costs and transport options for those without cars, encouraging tourism and supporting the local economies. Better regional and cross-country connectivity would also encourage regeneration and investment, particularly in more deprived areas that are connected to highway networks.

Improved public transport access to airports (AV1) could facilitate international business opportunities. Enhanced digital connectivity (DC1- DC3) will support remote work opportunities, facilitating economic activity by encouraging additions to the job markets by offering flexible working schedules and a reduced need to travel. It also helps improve reliance of the transport network, supporting better journey planning via sustainable transport, supporting commuting workers and encouraging sustainable tourism.

---

[7] Park and Ride first principles assessment, University of Leeds

[8] Parkhurst, G. & Meek, S. (2014). The effectiveness of park-and-ride as a policy measure for more sustainable mobility. Chapter 9 in Ison, S. & Mulley, C. (Eds) Parking Issues and Policies. Emerald, 185-211.

1.9.4 How will the NWRTP benefit culture and the Welsh language?

IWBA Objective 6 assesses the impacts of the NWRTP on Welsh language and culture, including arts, sports and the historic environment. Policies initiatives from the NWRTP align with Cymraeg 2050[9] by increasing use of Welsh in public spaces like transport services, interchanges and digital information.

Additionally, they support the aims of the Future Wales National Plan 2040[10], by strengthening the relationship between transport, economic growth and the Welsh language.

The NWRTP includes opportunities to improve sustainable access to heritage attractions in North Wales, in line with Welcome to Wales - Priorities for the Visitor Economy 2020-2025[11].

Objective 6 - Protect and enhance the local cultural heritage, including the Welsh language

Policies of the NWRTP which aim to improve public transport services and active travel infrastructure (CB1- CB23; PT1 - PT15; AT1 -AT14; IN1 - IN6), would facilitate better connectivity between communities and key cultural sites as well as Welsh medium educational facilities. By reducing traffic congestion and enhancing accessibility, these initiatives make it easier for individuals, particularly those without private vehicles, to visit cultural venues, heritage sites, and improve connectivity between local Welsh-speaking communities. This increased patronage of cultural attractions supports their economic viability.

Improved connectivity between Welsh speaking communities and to educational resources for learning Welsh, are crucial for promoting the daily use of the Welsh language. The policies support initiatives that create opportunities for community engagement and improving access to social opportunities for Welsh speaking communities, especially in areas of Gwynedd and Anglesey that consist of the highest proportion of Welsh speakers. The policies would also facilitate the use of Welsh language in social and community spaces such as transport interchanges, bus waiting areas, bus stops and buses themselves in verbal and written formats.[9]

Overall, the NWRTP policies collectively contribute to the preservation and promotion of local cultural heritage without posing risks to designated heritage assets.

1.10 Recommendations

Based on the outcomes of the IWBA, a series of recommendations have been identified in Table 4, which would help mitigate any potential adverse effects.

---

[9] Welsh Government, 2024. Cymraeg 2050: Welsh language strategy action plan 2024 to 2025. Available online at: https://www.gov.wales/cymraeg-2050-welsh-language-strategy-action-plan-2024-2025-html [Accessed 13/11/24]

[10] Welsh Government (2021), Future Wales: National Development Plan 2040. Available online at: https://www.gov.wales/future-wales-national-plan-2040-0 [Accessed 03/12/2024]

[11] Welsh Government (2020), Welcome to Wales - Priorities for the Visitor Economy 2020-2025. Available online at: https://www.gov.wales/sites/default/files/publications/2020-02/welcome-to-wales-priorities-for-the-visitor-economy-2020-2025.pdf [Accessed 03/12/2024]

uchelgaisgogledd. cymru | ambitionnorth. wales

Table 4 Mitigation recommendations for policies which may have negative effects

Policies	Recommendations
Objective 1: Support the delivery of housing and local services to meet the needs of local communities	
Interaction between modes (IN1 - IN3)	During the implementation of policies, it will be vital to make sure that they meet the actual needs of the communities. Community consultation and engagement with local and community organisation would facilitate better understanding of what these needs are so that they can be met. This should be led by local authorities overseen by Ambition North Wales.
Objective 2: Reduce inequality and promote community cohesion	
Bus (PT1)	Community engagement should be used to design routes and timetables. This would increase the sense of community cohesion and create a network that meets local needs. Accessibility should be embedded into the design of new services, infrastructure and vehicles (project level). This would support equitable access to public transport and active travel, whilst also encouraging more people to shift to these modes. This should be led by the scheme designers and planners, overseen by the scheme owner, which is likely to be local authorities in partnership with operators and overseen by Ambition North Wales.
Walking, wheeling and cycling (AT4 -AT6)	Engagement with community stakeholders, particularly those who represent Protected Characteristic/Vulnerable Groups, would ensure that accessibility concerns, ideas and lived experiences are embedded into designs. This should be led by local authorities overseen by Ambition North Wales.
Interaction between modes (IN5-IN6)	When policies relating to P&R and P&S facilities are being implemented, review should be made to ensure that investment in these facilities is not at the expense of investment in conventional public transport and that they do not only benefit motorists (i.e. non-motorist should still be able to benefit from any service). This should be led by local authorities overseen by Ambition North Wales.
Roads, Streets and Parking (RS5 - RS6)	It is important that reallocation of road and parking space is implemented along with initiatives to provide better public transport or carpooling infrastructure to prevent any unintended adverse impacts on accessibility to essential services like healthcare, recreation and green spaces. Any reallocation should also be accompanied by a review of disabled parking requirements in these locations. This should be led by local authorities overseen by Ambition North Wales.
Digital Connectivity (DC1 - DC3)	Digital training and education delivered by DC2 should incorporate the different learning needs of people with physical or mental disabilities to overcome barriers to digital inclusion. This should be led by local authorities overseen by Ambition North Wales.

Policies	Recommendations
Roads, Streets and Parking (RS3 - RS4)	Consideration should be given to the potential use of segregated cycle lanes and pedestrian routes which would make active travel a more attractive mode of transport for more people and increase safety. This should be led by local authorities overseen by Ambition North Wales.
Objective 4: Conserve, protect and enhance biodiversity and geodiversity interests, including through safeguarding important sites, species and habitats.	
Bus (PT4 - PT5)	At project level, protected sites/areas of natural habitat need to be considered where infrastructure developments require land. Appropriate survey and design mitigation should be incorporated at that stage. This should be led by the scheme designers and planners, overseen by the scheme owner, which is likely to be local authorities in partnership with operators and overseen by Ambition North Wales.
Ports and Freight (PF1 - PF2)	Mitigation measures should be in place to protect biodiversity and geodiversity interests. The HRA Screening Report and recommendations must be followed. This should be led by the scheme designers and planners, overseen by the scheme owner, which is likely to be local authorities in partnership with operators and overseen by Ambition North Wales.
Ports and Freight (PF3)	Areas of protected habitats must be avoided if new areas of land are required. The HRA Screening Report and recommendations must be followed. This should be led by the scheme designers and planners, overseen by the scheme owner, which is likely to be local authorities in partnership with operators and overseen by Ambition North Wales.
Objective 8: Support a transition toward a transport sector with reduced (including zero) carbon emissions and enhance the resilience of transport infrastructure to withstand the effects of climate change.	
Coach, demand responsive and community transport (PT14)	Use of zero emission vehicles for longer distance coach services could contribute to decarbonisation for the transport sector. This should be encouraged. This should be led by local authorities in partnership with operators and overseen by Ambition North Wales.
Objective 7: Protect and enhance the health of groundwater, surface and coastal waterbodies, water quality and water resources.	
Ports and Freight (PF3)	Appropriate drainage should be installed in any new facilities that would experience an intensification of HGVs. This should be led by the scheme designers and planners, overseen by the scheme owner, which is likely to be local authorities in partnership with operators and overseen by Ambition North Wales.
Roads, Streets and Parking (RS3 - RS4)	Flood mitigation should be incorporated into highway maintenance. This should be led by local authorities overseen by Ambition North Wales.

uchelgaisgogledd. cymru | ambitionnorth. wales

Policies	Recommendations
Objective 10: Reduce disturbance from transport related noise and vibration	
Ports and Freight (PF3)	Any new services (and their access) for HGV parking should be located away from residential areas and protected habitats.
	This should be led by the scheme designers and planners, overseen by the scheme owner, which is likely to be local authorities in partnership with operators and overseen by Ambition North Wales.
Objective 12: Create an integrated transport system that facilitates efficient and safe movement of both people and freight, contributing to increased economic prosperity in the region.	
Bus (PT6 -PT7)	The A55, the "North Wales Expressway" is the busiest road in North Wales, a dual carriageway primarily connecting Chester to Holyhead, along the coast of North Wales and passing Llandudno Junction, Conwy, and Bangor. It is one of Wales's most important roads that runs through to the port of Holyhead. The crossing of the Menai to Anglesey is important both locally and strategically as, though separated by the Menai Strait and in different local authority areas, towns on both sides of the Strait form a single economic area. A focus on these routes in the improvement of the bus network, policy PT6 could have an enhanced contribution to increased economic prosperity.
Interaction between modes (IN1 - IN3)	Transport services should include as much integration as possible, taking account of local needs and differing needs of the various groups within communities. For example, the transport needs of a person accessing employment (travelling A to B) is likely to be different to a parent who is making several trips within their day (travelling A-B-D-C-A). All user needs should be taken account of.
	This should be led by local authorities in partnership with operators and overseen by Ambition North Wales.

1.11 Monitoring and evaluation

A Monitoring and Evaluation Plan has been prepared for the NWRTP and includes a set of measures based on the National Wales Transport Strategy Monitoring Framework, adapted to the NWRTP's SMART and IWBA objectives. Each measure sets targets for improvements over the Plan period up to 2030. The Monitoring and Evaluation Plan outlines how the success of NWRTP will be measured, focusing on transport objectives and associated well-being outcomes, and highlights the region's contribution to national decarbonisation and modal shift targets.