



# **Denbighshire Green Infrastructure Assessment**

Fully accessible version

## **Denbighshire County Council**

**Final report**

Prepared by LUC

June 2024

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# Chapter 1

## Introduction

**1.1** This report presents the Green Infrastructure Assessment (GIA) for Denbighshire County Council. The GIA has been produced to support the emerging replacement Local Development Plan for Denbighshire.

**1.2** The GIA identifies and maps the existing Green Infrastructure (GI) network in Denbighshire and identifies opportunities to improve and expand the network and the multiple benefits it provides. The GIA makes recommendations on how planning policy and planning tools can be utilised to secure the delivery and enhancement of GI in Denbighshire.

**1.3** The GIA will be used by planners, developers and local communities to gain a better understanding of GI in Denbighshire, its benefits and how it can be improved.

## Chapter 2

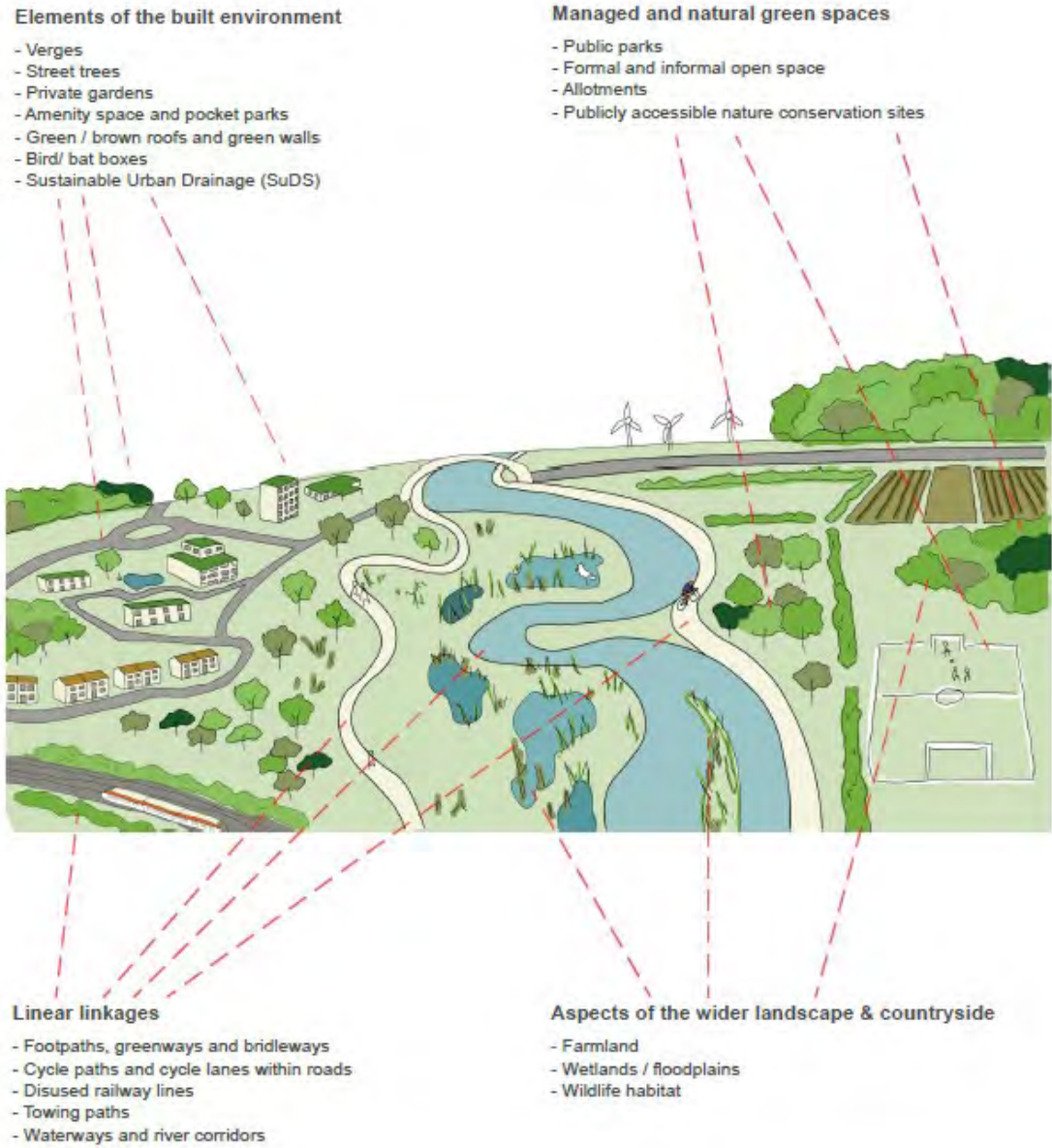
### Background and context

#### What is Green Infrastructure?

**2.1** Green Infrastructure (GI) refers to the network of multi-functional green and blue spaces that surround towns and cities and weave through them. Just as a transport network connects people across an area through a network of roads, rail or pavements – GI helps connect people, wildlife and nature.

**2.2** Elements of GI vary by scale and can include; managed and natural green spaces such as public parks, nature reserves and allotments; aspects of the wider countryside such as wetlands, floodplains and woodland; linear linkages such as footpaths, cycle paths and rivers and elements of the built environment such as verges, street trees and green roofs or walls. Figure 2.1 shows different elements of a GI network.

Figure 2.1: Figure showing different elements of a Green Infrastructure Network





## Benefits of Green Infrastructure

**2.3** The Wales Green Infrastructure Forum [See reference 1] highlights the importance of GI features serving ‘multiple functions’ when compared to ‘grey infrastructure’, which often serves only a single function. These might include storing or transporting rainwater, removing water pollution, providing homes for wildlife, improving access to nature, providing flowers for bees and other pollinators and helping to keep urban areas cool in the face of rising temperatures.

**2.4** It is vital that GI assets do not operate in isolation but should be linked to form part of a wider network. This helps them to withstand climate change and other impacts. It is equally important that the network threads through and around the built environment and connects the urban area to its wider rural hinterland.

**2.5** Green Infrastructure provides multiple benefits for people, nature and climate. Figure 2.2 summarises some of these benefits.

Figure 2.2: Figure showing the benefits of Green Infrastructure



- Improving residents' and visitors' physical and mental health.
- Aesthetic value and reinforcing sense of place.
- Play, education and interaction with nature.
- Improving air quality and noise regulation.
- Active transport opportunities, such as walking and cycling.
- Reducing the risk of flooding and improving water quality.
- Opportunities for community growing.
- Increased economic activity and attractiveness to inward investment.
- Space for biodiversity and improved ecological resilience.
- Opportunities for social interactions and community cohesion.

- Carbon sequestration and mitigating climate change.
- Urban cooling, natural air conditioning and shading.

## Ecosystem resilience

**2.6** "GI enhances the resilience of ecosystems by promoting sustainability and reducing vulnerability to environmental stressors. Natural Resources Wales applies the definition of ecosystem resilience published in its State of Natural Resources report in 2016, which is: "the capacity of ecosystems to deal with disturbances, either by resisting them, recovering from them, or adapting to them, whilst retaining their ability to deliver services and benefits now and in the future". The DECCA framework (discussed in detail in Chapter 6) can be applied to GI at different scales, habitats and land uses and by using these ecosystem attributes as proxies for resilience to guide the design of networks this ensures an approach based on resilience different to the traditional, more reactive responses in the management of natural resources and GI". The attributes of the DECCA framework include: diversity, extent, condition, connectivity and aspect.

## Policy context

**2.7** Policy at a UK, national, regional and local level provides direction and guidance on the implementation of GI. The figure below outlines all of the policy documents which have been reviewed in the preparation of this GIA and a detailed review of each policy document is provided in Appendix B.

**Figure 2.3: Figure showing relevant GI policies and strategies at a national, regional and local level**



## What is the purpose of the GIA?

**2.8** In order to tackle the identified piecemeal approach to planning for the environment, the Welsh Government requires all Planning Authorities in Wales to produce a GIA which brings together a GI evidence base in their area. GIAs should facilitate the strategic planning of the GI network in local areas and across Wales.

**2.9** The GIA will also support the development of Denbighshire County Council's (DCC) replacement Local Development Plan, currently being prepared. DCC is committed to expanding the GI network alongside new development to ensure the draft Local Development Plan vision is delivered: *“Denbighshire, through sustainable development, will have a vibrant urban coast, with thriving market towns and rural areas. The housing and employment needs of the County will be met and the high quality environment will be protected and enhanced. Life of a high quality will be maintained for all communities; with full recognition that we have a strong Welsh language and culture that should be supported and enhanced throughout the County.”*

**2.10** The outputs of the GIA will assist DCC's policy and development management planners to deliver new and enhanced GI through a variety of planning policies and tools.

## How was the GIA prepared?

**2.11** This GIA was produced using a four stage process, in line with guidance published by Natural Resources Wales on what a GIA needs to do [[See reference 2](#)].

**2.12** Firstly, the existing GI network was **identified** using mapping data and other desk-based research to build up a picture of the current strengths of the network and where there are gaps in the network or areas where the network could be enhanced. NRW has produced a guide of available datasets to support

## Chapter 2 Background and context

both the baseline analysis of the existing GI network and the identification of opportunities for improvement. Most of these datasets where up to date and relevant to Denbighshire were used in the preparation of this GIA and were supplemented with additional local and national datasets. A list of all data sets analysed is provided in Appendix D.

**2.13** Secondly, opportunities for improvement were **considered** which would enhance the GI network and lead to benefits for nature, people and place, including to mitigate and increase resilience to climate change and reduce pollution.

**2.14** Thirdly, **applicable** recommendations were developed on how to deliver GI enhancements through planning policy and planning tools at different levels.

**2.15** Finally, recommendations on mechanisms for the **regular review** of the GIA, its baseline data, and its successful implementation were developed.

## Chapter 3

# Existing GI Network

## Denbighshire Context

**3.1** The County of Denbighshire covers an area of 844 square kilometres, situated in the Northeast of Wales. Land is predominantly rural, bordering five other local authorities and the Irish Sea. An urbanised coastal strip with the two main coastal towns, Rhyl and Prestatyn, supports over half of the county's population with the remainder occupying scattered market towns and villages. There is limited rail provision in the County with only the coastal towns of Rhyl and Prestatyn served by rail stations. The A525 provides a north to south connection through the county connecting Rhyl to Ruthin, where the A494 provides onwards connections to the east and west. The North Wales express way provides an east-west connection through the north of the County.

**3.2** Agriculture and forestry are important to Denbighshire's economy, but the county is also heavily reliant on tourism, with coastal attractions and the River Dee renowned for its fishing and water recreation facilities. There is significant deprivation in parts of the county with Rhyl West being identified as one of the most deprived areas in Wales (Welsh Index of Multiple Deprivation).

**3.3** Denbighshire settlements have recently been the focus of regeneration opportunities, with significant investments from both the Welsh Government project 'Transforming Towns' and from the UK Government's Levelling Up Fund, alongside various other sources.

**3.4** The Rhyl Regeneration Project is progressing, with up to £65m aimed at the revitalisation of the town centre, the creation of a new Youth Centre, new housing developments, improving the promenade and connection to the beach, creation of a coastal defence scheme, and other recreational schemes

associated with its coastal location [See reference 3]. Major projects within the Rhyl Regeneration Project include;

- Rhyl Town Centre Vision; aims to improve the public realm, introducing greenery, improving community spaces, improved pedestrian and cyclist connectivity, and regeneration of the Queen's Market buildings.
- Greening Rhyl; aims to develop and improve green spaces within Rhyl Town Centre, creating new habitats and 'green corridors'.

**3.5** The county has a mix of landscapes which are valued for their natural beauty and tranquillity, ranging from remote and wild uplands and moorlands to narrow valleys, rolling pastoral lowlands and spectacular coastlines. The county benefits from a high-quality environment with a large area of the County within the Clwydian Range and Dee Valley Area of Outstanding Natural Beauty; the River Dee is also designated as a Special Area of Conservation. Work is underway by the Welsh Government to explore the designation of a new National Park which would incorporate this AONB and adjacent areas in north Powys and across to Gwynedd and the border with Eryri national park. The County's network of parks and open spaces vary in condition, but the recent DCC Climate and Ecological Change Strategy 2021-22 to 2029-30 stated that 62% of Council owned and operated land was in the lowest categories of species richness.

## Nature

### Context

**3.6** Nature (and landscape) plays a central role in the cultural heritage of Wales. Natural and semi-natural habitats and the biodiversity they support also provide a range of so-called ecosystem services that provide material benefits such as flood management, carbon sequestration and the economic benefits associated with tourism. Access to nature is also known to provide considerable health and well-being benefits.



**3.7** But the benefits that nature provides are being compromised by the degradation of natural and semi-natural habitats and the decline, or even loss, of many associated species. The latest update to The Nature Recovery Action Plan for Wales notes that ‘although positive steps have been made and some notable species are recovering, the loss of biodiversity continues’. [\[See reference 4\]](#).

**3.8** Denbighshire has a rich natural heritage and variety of habitats ranging from semi-natural coastal sand dunes, heather moorland, calcareous grassland, broadleaved woodland and streams to more modified landscapes of coniferous forest, farmland and rivers which have been constrained by flood defences. These habitats support a variety of species ranging from rarities such as black grouse, natterjack toad and Welsh hawkweed that rely on specially protected areas, to species which are more widespread such as otter, barn owl and adder but require the wider landscape to be managed in ways to maintain healthy populations. [\[See reference 5\]](#).

**3.9** DCC is part of Bionet, the Nature Partnership for north-east Wales which aims to co-ordinate action to reverse the decline in nature through collaboration, advice and information. [\[See reference 6\]](#). It has prepared a Nature Recovery Action Plan which focuses initially on the three key habitats of woodland, grassland, and rivers ponds and wetlands. [\[See reference 7\]](#).

**3.10** As a public authority DCC must comply with Section 6 of the Environment (Wales) Act which requires authorities to “seek to maintain and enhance biodiversity when carrying out their responsibilities” and “promote the resilience of ecosystems”. [\[See reference 8\]](#). Compliance with this duty also requires reporting every three years on the actions taken. The most recent report covering the period 2016 -2019 identified the following key achievements [\[See reference 9\]](#):

- Biodiversity is now listed as a Corporate Priority within the Corporate Plan.
- DCC has employed a Biodiversity Officer and signed a Service Level Agreement with Cofnod – the North Wales Environmental Information Service.

- DCC cut three-quarters of the road verge network (over 1,800km of road) just once, after the 1st of August.
- DCC has provided specialist training to key services.
- Work has begun to ensure that all new projects and developments consider impacts on biodiversity at the design stage.

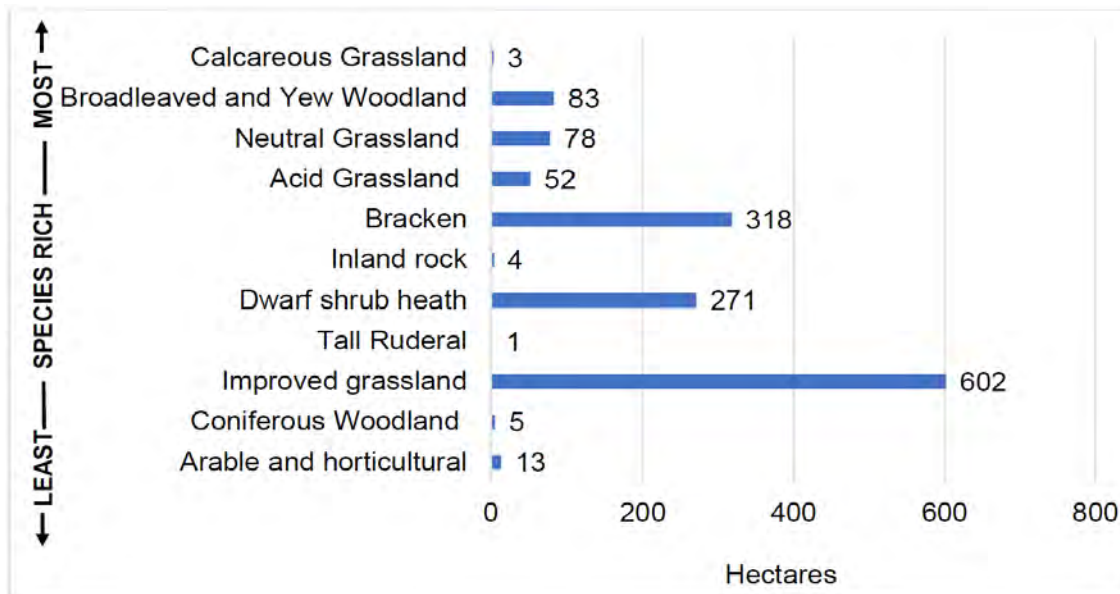
**3.11** DCC also recognises that biodiversity is a material planning consideration and had issued Supplementary Planning Guidance on Conservation and Enhancement of Biodiversity to ensure that all planning applications recognise the need to protect key areas, are accompanied by sufficient information to assess the ecological effect of proposed development and include suitable to mitigation and/or enhancement measures. [\[See reference 10\]](#).

## An Ecologically Positive Council

**3.12** As a consequence of the council's declaration of a Climate Change and Ecological Emergency in July 2019, DCC aims to become an Ecologically Positive Council by March 2030. This will require the protection, management and restoration of land owned or managed by the council as well as supporting and encouraging the creation of new spaces for nature so that the habitats across Denbighshire are as diverse, connected, extensive, healthy and resilient as possible in order to ensure nature recovery. [\[See reference 11\]](#).

**3.13** To meet its aims, DCC has categorised land it owns or manages into habitat types of varying species richness - as shown in Figure 3.1 – and is committed to ensuring that the amount of land in the lowest categories of species richness should be lower than amount of land in the highest categories of species richness by March 2030. To meet this commitment interim targets have been set as to the percentage of land that should be in the lowest and highest categories, see table 3.1. Both Figure 3.1 and Table 3.1 below are adapted from DCC's Climate and Ecological Change Strategy [\[See reference 12\]](#).

**Figure 3.1: Chart showing amount of DCC owned or managed land in each habitat type of varying species richness**



**Table 3.1: Target percentage change in habitats of lowest and highest species richness**

Species richness categories	Starting Point	2030 end goal	Projected % in Year 3 (2023/24)	Projected % in Year 6 (2026/27)
Lowest categories of species richness	62%	Reduce to below 49% or lower	Reduce to 57.7% or lower	Reduce to 53.3% or lower
Highest categories of species richness	38%	Increase to above 51% or higher	Increase to 42.3% or higher	Increase to 46.7% or higher

## Existing nature assets

**3.14** Like all other council areas across Wales the natural assets across the county – the most important habitats and locations of key populations of rare or uncommon species – are identified by a range of different statutory and

planning policy designations, including those that apply at international, national and local level.

### Statutory sites

**3.15** Figure 1 shows all of the statutory nature conservation sites in Denbighshire. The statutory protected sites network comprises those identified through UK or international legislation as Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites. These are the most important areas of habitat that are subject to legal protections to avoid harm or damage from operations such as changes to land-management or the direct or indirect impacts of development on or within a zone of influence.

**3.16** There are 29 SSSIs in Denbighshire, plus 6 SACs, 3 SPAs and 1 Ramsar site – all of which are part of SSSIs. The majority occur in the far south and east of the county, but there are also key sites such as Gronant Dunes and Talacre Warren, and parts of the Dee Estuary, along the coast at Prestatyn, and woodland sites such as Coed Nant Mawr (to the south west of Pentre Llanrhaeadr) and, Cil-y-Groeslwyd Woods, Eyrarth Woods and Rocks and Craigddwywynt (between Pwll-glas and Llanfair Dyffryn Clwyd) in the centre of the county.

### Non-statutory sites

**3.17** The non-statutory protected sites network includes those areas of land identified in the DCC Local Development Plan as Sites of Nature Conservation Interest (SNCIs)/County Wildlife Sites (CWS). These are areas that have been identified as supporting habitats or species that are of importance at the county or local level. There are 248 of these sites in Denbighshire.

**3.18** The ownership and responsibility for management of these sites ranges from public authorities and statutory agencies through to environmental organisations, farmers and other private landowners. The non-statutory designation ensures that the nature conservation value of these sites is properly

considered in any planning decisions and also highlights their ecological value to respective land-owners, land-managers and other bodies such as public authorities or utility companies whose actions or decisions may affect them.

**3.19** CWS in Denbighshire include several owned and managed by DCC including Moel Findeg, Brickfields Pond, Rhuddlan Pond and Prestatyn Hillside.

### Habitats of Principal Importance

**3.20** Not all land with existing ecological value lies within the statutory or non-statutory sites network. This may be because they are too small, have only recently been identified, or are the result of ongoing habitat creation or restoration. This includes all areas which support 'habitats of principal importance' as identified under Section 7 of the Environment (Wales) Act 2016 [See reference 13]. In Denbighshire this includes areas of calcareous grassland, fen and heath as well as ancient woodland. Figure 2 shows priority habitats found in Denbighshire.

### Resilient Ecological Networks

**3.21** Although nature recovery requires robust protection and better management of the statutory and non-statutory protected sites network, it also needs interventions at a landscape scale that better extend existing important habitats, provide additional areas for wildlife to forage and breed, and provide connectivity through the wider landscape to allow species to move, migrate and respond to the effects of climate change. Nature recovery can be supported by enhancement of land for biodiversity anywhere in Denbighshire but is best targeted on land that augments, buffers or connects the statutory and non-statutory sites network and the habitats of principal importance to create a wider habitat network that operates at a landscape scale. Natural Resources Wales has mapped habitat networks across Wales. These show three sorts of networks to represent the requirements of a wide range of species. They comprise:

- core networks, for species that require a lot of their habitat and disperse poorly;
- focal networks for species that require less habitat and disperse reasonably well; and
- local networks for species that require only small areas of habitat and disperse very poorly.

**3.22** The ‘lowland focal habitat networks’ in Denbighshire are shown in Figure 3. N.B. This subset of the focal habitat network has been selected as it highlights those areas where there is most scope for ecological connectivity to be improved through the land-use planning policies of DCC. The corresponding upland focal habitat network relates to large areas of land which are likely to be mostly out of scope with respect to DCC planning policy.

**3.23** This is effectively the basis for the creation of a ‘resilient ecological network’ that are:

“... networks of habitat in good ecological condition linking protected sites and other biodiversity hotspots across the wider landscape, providing maximum benefit for biodiversity and well-being” and “have existing or potential for healthy resilient ecosystems which provide a range of important ecosystem services as well as allowing the movement of species across landscapes in response to climate change.” [\[See reference 14\]](#).

## Quality

**3.24** The manner in which the existing natural assets across the county are managed and maintained is fundamental to whether they retain their ecological value and continue to contribute to or improve the ecological resilience of the network and the wider benefits this provides.

**3.25** The quality of the county’s nature conservation assets can be measured and monitored by:

- direct assessment of the condition of habitats (and associated species) within individual sites;
- monitoring trends in the populations of key species to act as a indicator of the ecological health of the wider landscape; and
- undertaking natural capital assessments determine whether the wider environmental and economic benefits being provided by the existing nature conservation assets are being sustained or are accruing over time as the 'resilient ecological networks' are established.

**3.26** The statutory site network is subject to relatively regularly monitoring by Natural Resources Wales to ensure the reasons for the sites designation (i.e. the special habitats or important populations they support) are being maintained in 'favourable condition'.

**3.27** The quality of the non-statutory site network and other areas of habitat of principal importance are less well monitored, in part due to the extensive areas of land that requires assessment. Nevertheless, key sites, such as those owned by environmental organisations are subject to more regular and systematic monitoring and rapidly advancing methods and practices in remote sensing are providing much more efficient and cost-effective ways of measuring the quality and robustness of the proposed resilient ecological networks. A key strand of the work of Bionet is to establish these monitoring programmes.

## Summary of key issues

- Large parts of Denbighshire are covered by existing nature conservation designations but there is a lack of understanding of the quality of many of these areas.
- The management and maintenance of these areas is dependent upon the use of a variety of different levers, incentives and controls by a number of different organisations and agencies. The influence exerted by DCC land-use planning policies and powers may be limited across much of the network.

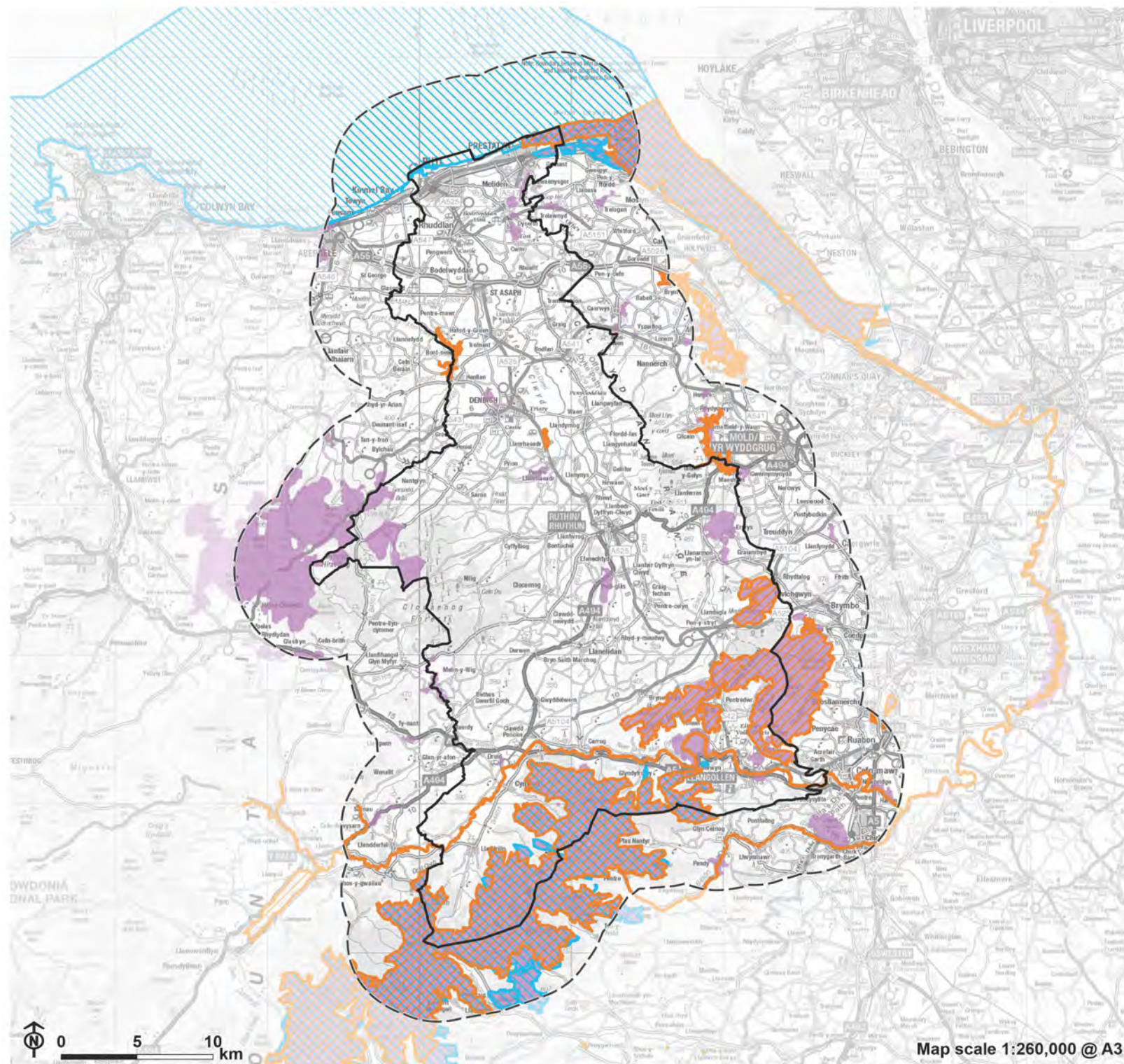
## Emerging opportunities

- The lowland focal habitat network identified by the mapping provided by Natural Resources Wales indicates where efforts to establish a more resilient ecological network should be targeted.
- ‘Nature-based solutions’ should be integrated into all projects for the improvement of parks and green spaces and the wider public realm, especially in those areas where these projects coincide with the lowland focal habitat network.
- Site allocations and/or new development within or close to the lowland focal habitat network should be required to identify how they can contribute to the resilience of the network.



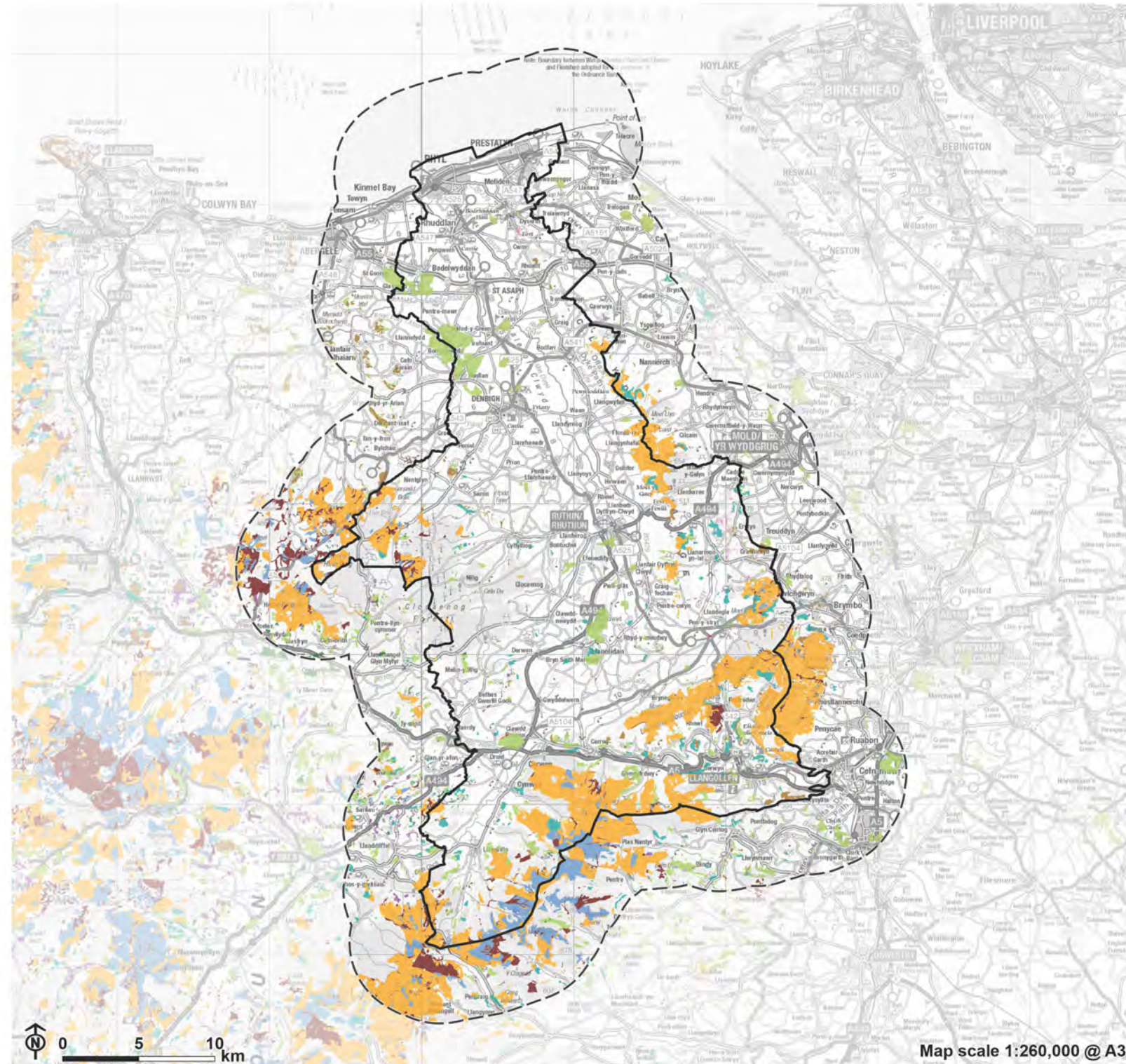
Figure 1: Statutory Nature Conservation Sites

- Denbighshire county boundary
- 5 km from Denbighshire county boundary
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area



Map scale 1:260,000 @ A3

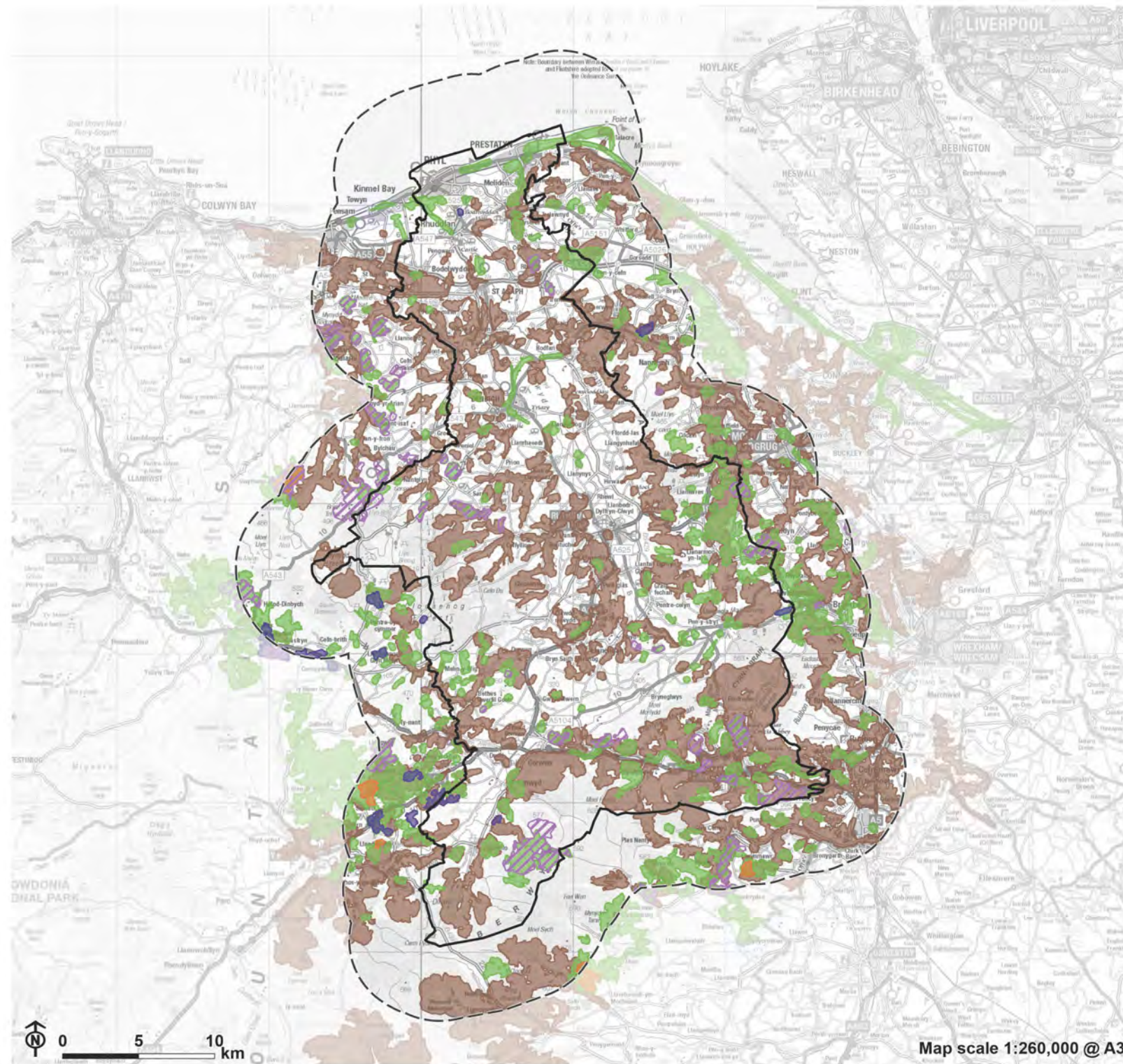
Figure 2: Priority Habitats



- Denbighshire county boundary
- 5 km from Denbighshire county boundary
- WOM21 Priority Habitat - High Sensitivity (all habitats)**
- Blanket bog
- Lowland calcareous grassland
- Lowland dry acid grassland
- Lowland fens and reedbeds
- Lowland Heathland
- Lowland Meadows
- Open Mosaic Habitat on Previously Developed Land
- Parkland
- Purple Moor Grass and Rush Pastures
- Raised Bog
- Traditional Orchards
- Upland Calcareous Grassland
- Upland Flushes, Fens and Swamps
- Upland Heathland
- Wood Pasture

Map scale 1:260,000 @ A3

Figure 3: Lowland Focal Habitat Network



- Denbighshire county boundary
- 5 km from Denbighshire county boundary
- Lowland focal habitat network**
- Bog
- Fen
- Grass
- Heath
- Wood

Map scale 1:260,000 @ A3

## Climate Change and Pollution

**3.28** This chapter covers the themes of Climate Change and Pollution in relation to GI and the existing GI network in Denbighshire.

### Context

**3.29** As a result of climate change, Denbighshire can expect to see more intense rainfall and flooding in low-lying coastal areas, as well as hotter, drier summers. The projections also foresee more extremely warm days together with milder, wetter winters. People and nature will need to try to adapt to these changes. The people most likely to be affected live in the most deprived communities [\[See reference 15\]](#). This is demonstrated by the Joseph Rowntree Foundation's Neighbourhood Flood Vulnerability Index which provides insight into the social vulnerability of a neighbourhood should a flood occur. Rhyl, and notably west Rhyl, consistently demonstrates high susceptibility, an inability to prepare, an inability to respond, an inability to recover and a lack of community support following flooding. The most deprived areas of Denbighshire, including Rhyl and pockets of Prestatyn and Denbigh are the most vulnerable, and are in the higher bracket of the Neighbourhood Flood Vulnerability Index [\[See reference 16\]](#).

**3.30** GI can play a key role in mitigating and adapting to climate change. Habitats of various types can be used to “sequester” carbon i.e. draw excess carbon down from the atmosphere. Certain kinds of habitat, particularly woodland, can also act as natural defences against risks associated with climate change, including flood risk and high temperatures. Active travel provision through GI can also help to reduce carbon emissions by assisting people to move away from car travel. Active travel is covered in the ‘People’ section of this chapter.

**3.31** GI can also play an important role in the reduction of pollution of various forms including: water pollution by using vegetation to filter out pollutants; air

pollution through the use of vegetation for the absorption of particulate matter or to create a barrier against the dispersion of pollution; and noise pollution by using vegetation as a sound barrier, particularly along roads.

# Existing GI assets and issues

## Climate change

### Woodland cover

**3.32** Trees and woodland have a major role in mitigating and adapting to climate change including through local climate regulation by providing shade, reducing ambient temperatures and urban heat island effects, providing habitats and species resilience, managing air quality and helping mitigate against extreme weather events such as flooding events and heat waves. Trees and woodland also have a key role in carbon storage.

**3.33** Denbighshire has the lowest county canopy cover in Wales. Wales' tree cover was estimated to be 16.3% for 2013, down from 17.0% in 2009. Denbighshire's canopy cover was estimated to be 11.7% (305 hectares) in 2013, down from 12.4% in 2009 [\[See reference 17\]](#). Figure 4 shows the existing woodland cover in Denbighshire.

**3.34** Landscape character influences the noticeable differences that exist - often low in coastal towns such as Rhyl (5.5%) and high in the South Wales Valleys (outside of Denbighshire e.g. 30% in Treharris). Llangollen's 25% cover contrasts with Denbighshire's coastal towns and cover tends to be much higher away from the coast [\[See reference 18\]](#). Overall, Rhyl has the lowest canopy cover (5.5%), followed by Rhuddlan (7.2%), Denbigh (9%), Ruthin (11.7%) and Prestatyn (13.2%). In alignment with canopy cover trends, these are all located on the north coast, other than Denbigh and Ruthin, which are categorised as hinterland [\[See reference 19\]](#).

**3.35** Whilst variation exists across Wales, 63% of more affluent wards (wards as Lower Super Output Areas) have average tree cover greater than 15% compared to only 23% of more deprived wards. The 'west / south-west & Upper Denbigh' communities first cluster area is one of Wales' most striking in terms of lack of cover across all wards. Rhyl west 1, 2 and 3 have 1%, 2% and 3% canopy cover respectively. Where high tree cover and high level of deprivation coexist, this is often associated with local urban woodland being present rather than amenity trees. Woods of this nature can be unmanaged and inaccessible, limiting their utility for biodiversity and recreation [\[See reference 20\]](#).

**3.36** Given the significant value of trees in delivering resilient and climate positive places, current and potential future tree canopy cover is a key consideration. Given the deficit of tree coverage in the north of the County, there are opportunities to deliver medium sized woodlands in proximity to west Rhyl, where tree coverage is demonstrably needed the most. Opportunities exist along the River Clwyd on farmland and seminatural grassland between Rhyl and Rhuddlan. Furthermore, there are opportunities for the delivery of medium sized woodland to the east of Rhyl, adjacent to the coast road (A548) corridor towards Prestatyn on urban, farmland and seminatural grassland. Notably, there is less need for the delivery of medium sized woodland towards the south of the County, however there are greater opportunities around Denbigh too [\[See reference 21\]](#).

### Mitigating increased flood risk

**3.37** Floods are one of the most common environmental emergencies in the UK, with widespread and long-lasting health, environmental and financial impacts affecting homes and businesses. Floods can significantly disrupt the normal functioning of whole communities. There are large pockets of Flood Risk Zones 2 and 3 throughout Denbighshire, primarily in coastal areas of the County such as Rhyl and Prestatyn and in other centres that follow the River Clwyd and the River Dee and their many tributaries, such as St. Asaph, Denbigh, Llangollen and Ruthin [\[See reference 22\]](#). This follows the pattern of NRW's Communities at Risk Register (CaRR), which identifies the locations of greatest risk of flooding from all sources (tidal, fluvial and surface). According to

the Communities at Risk Ranking 2019, Rhyl is at most risk of flooding followed by Prestatyn, Rhuddlan, St. Asaph, Denbigh, Ruthin, Llandrillo, Dyserth, Llangollen and Glyndyfrdwy [\[See reference 23\]](#). These include the most deprived communities in Denbighshire, notably Rhyl, Prestatyn and Denbigh, which also fall within the higher brackets of the Neighbourhood Flood Vulnerability Index. Areas of flood risk in Denbighshire are shown on figure 5.

**3.38 Surface water flooding** is most common in built-up/urban areas predominantly in the north, including St. Asaph, Rhyl and Prestatyn where development such as roads, buildings and other hard surfaces prevent rainwater from infiltrating into the ground [\[See reference 24\]](#). It can also occur in rural areas where heavy rain runs off steep sloping fields, compacted land and other impermeable surfaces. Notably the Denbigh Moors and adjacent Clocaenog Forest and rural areas along the River Clwyd corridor have areas of high flood risk from surface water. [\[See reference 25\]](#).

**3.39** Overall, Denbighshire is shown to have 8,320 properties at tidal flood risk, 3,097 properties at risk from rivers and 3,776 properties at risk from surface water flooding. These properties at risk figures are based on FRAW (Flood Risk Assessment Wales), which is national modelling dataset and does not take account of local detailed modelling studies/evidence or the impact of climate change, however these numbers are almost certain to increase as climate change accelerates [\[See reference 26\]](#).

**3.40** Green Infrastructure can be designed to reduce the risk of flooding from all sources by reducing the speed and quantity of runoff heading towards drains, combined sewers and water courses. Working with natural processes, **natural flood management measures** can reduce flooding at catchment and local scales. If woodland (riparian) is planted adjacent to rivers and channels that flow with rainwater after severe storm events, these woodland belts can provide a last barrier to overland flow and hence reduce the severity of river swelling. Within Denbighshire, the Welsh Information for Nature-based Solutions mapping highlights large opportunities for riparian woodland planting along the River Clwyd between Rhyl and Rhuddlan and between Bodfari and Ruthin. Cynwyd and Llandrillo also present large opportunities for riparian planting along the River Dee in the south west [\[See reference 27\]](#).

**3.41** Furthermore, **Sustainable Drainage Systems** (SuDS) are a surface water management approach that mimics or incorporates natural processes and features into urban areas to control and treat rainwater runoff. Examples of SuDS include swales, vegetated channels, rain gardens, or ponds with natural vegetation and substrates. SuDS encompass both new installations integrated into urban development and retrofitted solutions designed to manage and mitigate stormwater runoff in an environmentally sustainable manner. These features help slow down, filter, and store rainwater runoff, allowing it to be absorbed into the ground or released at a controlled rate.

**3.42** In Denbighshire, the use of SuDS is part of an effort to address urban drainage and flooding issues. The Denbighshire Local Flood Risk Management Strategy (DLFRMS) recognises the multifaceted nature and variety of SuDS, including detention basins (dry), retention ponds (wet), grassed swales, porous pavements, soakaways and 'green' roofs that store water within a building's own footprint [\[See reference 28\]](#).

**3.43** Whilst not situated in Denbighshire, but the neighbouring authority of Conwy County Borough Council, the "Basin at the 16th" in Deganwy has delivered the first Welsh Water green infrastructure RainScape scheme in north Wales. It is a large attenuation basin for managing stormwater generated through upstream surface water separation, retrofitted on previous scrubland, next to the 16th hole of a golf course. It is part of an overall national environment programme (NEP) being delivered by Welsh Water to reduce spills to the Afon Conwy estuary. The design consists of an open planted attenuation basin sited immediately adjacent to the 16th hole of the Maesdu Golf Course. The retrofitted basin is providing offline storage which is hydraulically controlled using a simple timber weir with a low flow slot in the adjacent watercourse. Associated works included realigning a short section of the watercourse, providing new access bridges, and associated landscaping to reduce the amount of soil transported off site [\[See reference 29\]](#).

**3.44** The DLFRMS states that it embraces Welsh Government guidance on the encouragement, adoption and maintenance of SuDS, providing an opportunity to ensure that amenity and biodiversity are considered with the same importance as managing volumes of water [\[See reference 30\]](#). Since January



2019 in Wales, SuDS have been a mandatory requirement on all new developments involving more than one building or a construction area more than 100m<sup>2</sup> [See reference 31].

**3.45** The integration of SuDS can yield significant environmental and sustainability benefits. Net Benefits for Biodiversity (NBB), the approach that developers in Wales will have to use to demonstrate that they have met their obligations to maintain and enhance biodiversity [See reference 32], encourages the incorporation of measures for biodiversity and ecosystems, such as grey water management and SuDS to contribute to wider green infrastructure and resilient ecological networks [See reference 33]. These elements help manage stormwater, enhance water quality, and create habitats for various species. The design of natural water bodies, public spaces, and the aesthetic appeal of urban areas can be optimised to balance ecological improvements with urban functionality.

**3.46** In an effort to address the issue of tidal flooding, the central area of Rhyl (approximately between Splash Point to the east and the Children's Play Area, opposite John Steet, to the west) is protected by sea defence structures. However, these are deteriorating and, if no repair work is carried out, they could fail within the next 10-15 years. There is an ongoing Coastal Defence Scheme to address these deficiencies. Construction of the western section, from the former SeaQuarium to John Street, will be undertaken from February 2023 to October 2025, whilst the eastern section from Splash Point to the former SeaQuarium is expected to be complete by March 2024 [See reference 34].

**3.47** Similarly, Prestatyn is protected from coastal flooding by defences along the waterfront. Due to the age and condition of these defences they no longer provide an adequate level of protection. Within the next 50 years, rising sea levels and bigger storms caused by climate change will result in waves overwhelming the defences more often. Without improvements to the sea defences, the risk of coastal flooding faced by homes and businesses in Prestatyn is likely to increase in future. The Central Prestatyn coastal defence scheme focuses on the area of most immediate concern, adjacent to Rhyl Golf Club. Planning permission was granted in July 2022 by Denbighshire County Council and the work is expected to be completed in 2026. Both Coastal

Defence Schemes utilised funding from Denbighshire County Council and the Welsh Government's Coastal Risk Management Programme [See reference 35].

### Water quality

**3.48** Safe and readily available water is important for public health, whether it is used for drinking, domestic use, food production or recreational purposes. Improved water supply and sanitation, and better management of water resources, can boost countries' economic growth and can contribute greatly to poverty reduction. In 2010, the UN General Assembly explicitly recognised the human right to water and sanitation. Everyone has the right to sufficient, continuous, safe, acceptable, physically accessible and affordable water for personal and domestic use [See reference 36].

**3.49** In Denbighshire, two main catchments dominate – the River Clwyd and the River Dee. The majority of the River Clwyd catchment is within North East Wales with one major tributary, the River Elwy, lying mainly in the Natural Resources Wales' North West area. The upper Dee also stretches into the north-west area, with the lower catchment spreading over the English border into the Cheshire Plain and the Dee estuary [See reference 37].

**3.50** The main uses of the River Dee are water abstraction for water supply for 2.5m people; tourism including recreational angling, canoeing and navigation; nature conservation [See reference 38]; and farming, predominantly cattle and sheep grazing along the river banks. The strategic importance of the Dee as a potable water source, and the risk posed to it from pollution, has led to the river becoming one of the most protected in Europe and, as of 1999, a designated Water Protection Zone [See reference 39]. The Dee is the largest river in North Wales and has been designated as a Special Area of Conservation (SAC). Its catchment area is more than 1,800 km<sup>2</sup>.

**3.51** In 2015, almost half (48%) of all surface water bodies (as defined by the Water Framework Directive) were not achieving good or better overall status in

the NRW catchment of Clwyd, which captures the vast majority of Denbighshire. A water body is part, or the whole, of a river, lake, ground water or coastal water. In the Clwyd catchment area, there are 36 total water bodies. 42% of these scored moderate, whilst 6% scored poor. The reasons for not achieving good status include [\[See reference 40\]](#):

- Pollution from rural areas (including land management practices as well as impacts from other uses, for instance horses/stables, golf courses), responsible for 36% of water bodies.
- Pollution from sewage and wastewater, responsible for 33% of water bodies.
- Physical modification, responsible for 17% of water bodies.
- Mitigation Measures assessment, responsible for 11% of water bodies.
- Other, responsible for 8% of water bodies.
- Pollution from towns, cities and transport, responsible for 6% of water bodies.

**3.52** The beach at Rhyl is surrounded by the town itself and located next to the mouth of the River Clwyd. Here, the bathing water designation can be subject to short-term pollution caused when heavy rain washes faecal material into the sea from livestock, sewage and urban drainage by way of rivers and streams. Since 2015, the bathing water has been designated as 'sufficient'. The bathing waters along the coast are vital to the local tourist economy [\[See reference 41\]](#).

**3.53** Green infrastructure can help to improve the quality of water. Vegetation provides storage and interception of rainfall at the source and can reduce diffuse pollution by enhancing sediment retention. Also, trees and woodland are effective at intercepting aerial drift of pesticides from agricultural land that would otherwise enter watercourses [\[See reference 42\]](#).

**3.54** Nutrient neutrality is an approach for managing new development and water discharge permit proposals to prevent them from causing any net increase in nutrients for the duration of the authorisation. Nutrient neutrality is

applicable in Wales to developments with phosphorus discharges into Special Areas of Conservation (SAC) rivers, such as the River Dee [See reference 43]. GI can play a valuable role in reducing nutrient enrichment, particularly around sensitive surface water bodies. Whilst riparian planting can aid in preventing nutrient enrichment, GI can further help through habitat restoration, hedgerow planting and channel belts. The Welsh Information for Nature-based Solutions mapping identified large opportunities for reducing nutrient enrichment along the River Clwyd, particularly near to Denbigh and parallel to Moel Famau County Park, as well as along the River Dee to the south [See reference 44].

### Air quality

**3.55** Air pollution is the single largest environmental health risk in Europe and a major cause of premature death and disease. Latest estimates by the European Environment Agency (EEA) show that fine particulate matter (PM<sub>2.5</sub>) continues to cause the most substantial health impacts [See reference 45]. In the UK, poor air quality contributes to up to 36,000 deaths per year and costs cities/regions a combined total of over £20 billion [See reference 46].

**3.56** In Denbighshire, air quality is primarily affected by the major road networks that span the landscape. Air quality monitoring is undertaken by all six Local Authorities in North Wales with a total of five automatic monitoring stations measuring nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) concentrations and 159 NO<sub>2</sub> diffusion tube monitoring sites, located at key locations within town centres and along main transport links. In 2021 there was no exceedance of the NO<sub>2</sub> annual mean AQO of 40 µg/m<sup>3</sup>. In 2021, there were no new monitoring sites introduced in Denbighshire County Council [See reference 47]. Although the road networks will affect air quality in adjacent areas, there has been no significant issues with air quality have been recorded across the county.

**3.57** Green infrastructure can act as a physical barrier that can block and redirect the flow of polluted air and it can act as a surface upon which particles and other gases can be deposited and absorbed. By planting green screens, hedges and trees along roads, creating a barrier between the source of

pollution and where pedestrians walk, the flow of polluted air can be redirected and dispersed, reducing the concentration of pollutants in the air. Furthermore, the creation of woodland increases the ‘roughness’ of the urban environment. This stimulates greater levels of turbulence in the air, which promotes the dispersion of pollution [See reference 48]. In Denbighshire, the highest demand for greenspace with air quality issues (areas with PM<sub>2.5</sub> greater than 8 µg/m<sup>3</sup>) is in west Rhyl and in Denbigh [See reference 49].

## Noise

**3.58** Environmental noise pollution, and in particular road traffic noise, is a growing concern. Long-term exposure to noise from environmental sources such as road, rail and air transport can cause a variety of health effects including annoyance, sleep disturbance, negative effects on the cardiovascular and metabolic system, as well as cognitive impairment in children [See reference 50]. Noise is regarded as a form of environmental pollution and is sometimes considered an international health concern [See reference 51].

**3.59** Green infrastructure can mitigate noise in urban areas. Planting “noise buffers” composed of trees and shrubs can reduce noise by five to ten decibels for every 30m width of woodland, especially sharp tones, and this reduces noise to the human ear by approximately 50%. To achieve this effect, the species and the planting design must be chosen carefully [See reference 52]. In Denbighshire the Welsh Information for Nature-based Solutions mapping identifies the demand for noise management that can be mitigated through GI along urban road corridors, particularly in the main coastal settlements to the north. This includes the Rhyl to Prestatyn Coast Road (A548), the primary route between the most populous settlements, and Vale / Rhuddlan Road (A525) leading towards Rhuddlan and the main route to access the largely used dual carriageway A55, the regions busiest route [See reference 53].

**3.60** In Wales, the definition of tranquillity that has been adopted by both Welsh Government and NRW is “*An untroubled state, which is peaceful, calm and free from unwanted disturbances. This can refer to a state of mind or a particular environment. Tranquillity can be measured in terms of the absence of unwanted*”

*intrusions, or by a balancing of positive and negative factors. These include the presence of nature, feeling safe, visually pleasing surroundings and a relaxing atmosphere.”* Tranquil areas should not be confused with ‘quiet areas’ which are defined by the European Environmental Noise Directive as “*those areas delimited by national authorities that are undisturbed by noise from traffic, industry or recreational activities*”, however tranquil areas are still an important consideration if used to withdraw from areas of high noise pollution [See reference 54]. Notably, tranquil areas decreased by 10% (81km<sup>2</sup>) in Denbighshire over an 11 year period spanning 1998 to 2009 [See reference 55].

### Summary of key issues

- Denbighshire has the lowest county tree canopy cover in Wales. Canopy cover is particularly low in the most deprived areas of the County, particularly in west Rhyl.
- There are many communities in Denbighshire that have a high risk of flooding, particularly the coastal towns of Rhyl and Prestatyn. Figure 5 shows the existing flood risk areas across Denbighshire. This is likely to increase due to the effects of climate change.
- Surface water bodies have not been achieving good or better overall status in Denbighshire, notably the River Clwyd. This is largely due to pollution from rural areas or pollution from sewage and wastewater.

### Emerging GI priorities

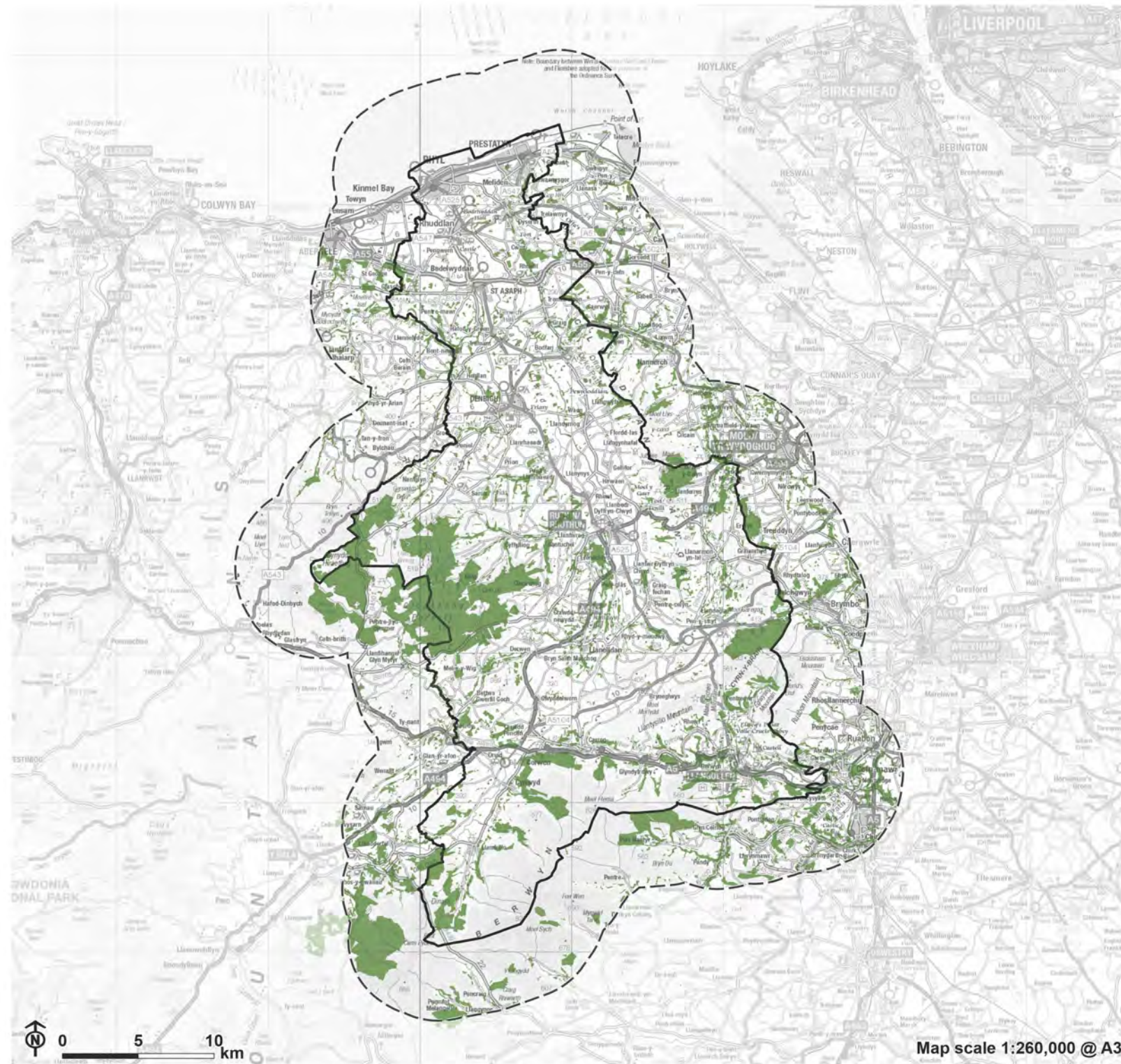
- Increase canopy cover across Denbighshire, particularly in the most deprived areas of the County such as Rhyl. There are opportunities for this to the west and east of Rhyl, where canopy cover is required the most.
- Utilise Natural Flood Management such as catchment or riparian planting to reduce the likelihood of flooding in areas of high flood risk

across Denbighshire and to help improve the quality of lower quality surface water bodies.

- Integrate SuDS into development from an early design stage to reduce the likelihood of flooding in areas of high surface water flood risk across Denbighshire and to help improve the quality of lower quality surface water bodies.

Figure 4: Woodland Cover

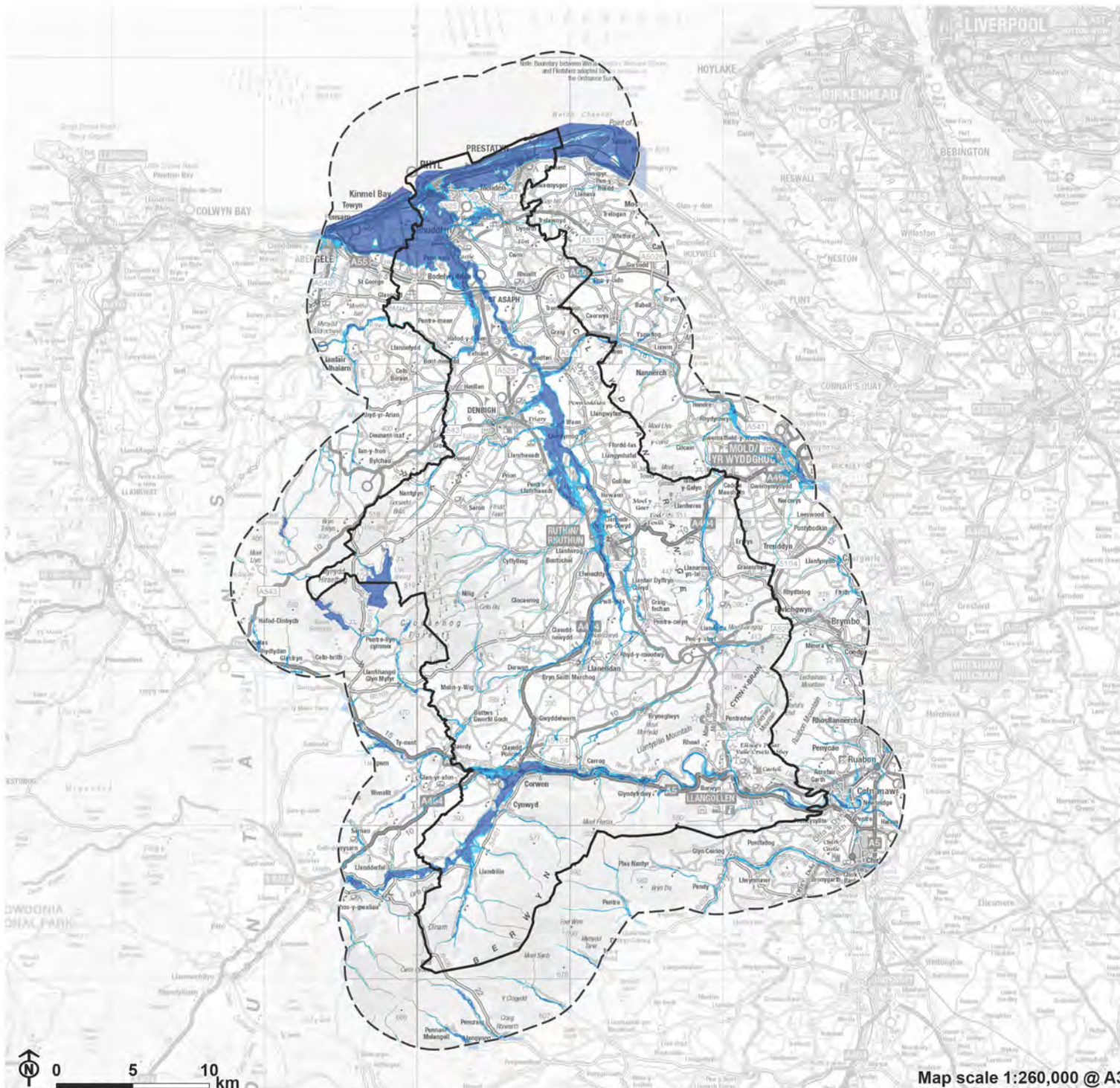
- Denbighshire county boundary
- 5 km from Denbighshire county boundary
- National Forest Inventory



Map scale 1:260,000 @ A3



Figure 5: Flood Risk Zones 2 and 3



- Denbighshire county boundary
- 5 km from Denbighshire county boundary
- Flood Map for Planning: Rivers and Sea**
- Flood Zone 3
- Flood Zone 2

## Place

**3.61** This chapter covers the theme of Place in relation to GI, providing an overview of Denbighshire's existing landscape, cultural and heritage assets or features, potential risks, and how GI can respond to gaps in the network.

## Context

**3.62** Despite its relatively small size Denbighshire presents an incredibly varied landscape with a wealth of heritage features and historic character. Ongoing pressures placed on both landscape and heritage assets come from a variety of sources, including from increased or inappropriate development, recreational impacts, and lack of management. Providing a robust response to said pressures will be key in preserving and enhancing both landscape and historic character, and thus ensuring Denbighshire is able to maintain its unique setting.

**3.63** Landscape character can be defined as the qualities or features which contribute to a 'sense of place' and setting which makes a landscape distinct and special to those who live there. Heritage assets are an important part of GI networks and together with the landscape setting are an essential part of forming local character. These aspects are the foundation for what begins to define a 'sense of place', and which provides the backdrop for growth of community and culture, and social cohesion. Within the public realm, accessible and attractive spaces help people come together and strengthen their communities **[See reference 56]**.

**3.64** PPW 12 sets out the framework for strategic planning with regards to urban regeneration, town centres, and protecting local and historic character. A holistic approach to planning, with a focus on understanding what makes a place distinct, can be referred to as 'placemaking', and is highlighted as a preferred strategy within PPW 12 **[See reference 57]**.

**3.65** The diversity of the rural and coastal landscape within Denbighshire forms the setting for its many heritage features and contextualises the rich history of the area. Stretching from the Irish Sea in the north to the Berwyn range in the south, tourism is an important part of the economy, and would benefit from a GI-led approach with a focus on regeneration. Good quality placemaking responds to the area's character and contributes to the conservation and enhancement of the landscape and historic environment and can contribute to the regeneration of vibrant communities with increased value.

## Existing GI assets and issues

### Historic and cultural features

**3.66** The conservation and protection of heritage assets across Wales is highlighted as a concern by PPW 12. It is essential to preserve the historic environment using a sustainable and holistic approach, in order to allow future generations continued connection to and understanding of their surroundings. Heritage assets are a key part of the physical character of Denbighshire's landscape and are by nature irreplaceable, and as such their protection is a priority.

**3.67** Denbighshire is a County rich in heritage, with numerous listed buildings and historic settlements, all set within a varied landscape that partially encompasses the Clwydian Range and Dee Valley AONB, River Dee SAC and a UNESCO World Heritage Site. Important heritage features, monuments, parks and gardens are spread across the district and there are designated conservation areas within many of the settlements. There are multiple types of conservation areas within the County, including those associated with historic forts or castles (Denbigh, Ruthin, Rhuddlan), Victorian seaside towns (Rhyl and Prestatyn) or historic settlements within designated landscapes (Llangollen and Llantysilio). Comparatively across Wales, the region of north-east Wales has a higher than average number of 'at-risk' listed buildings **[See reference 58]**. Figure 6 shows all of the designated historic features across Denbighshire.

**3.68** The pattern of villages, isolated farmsteads and numerous remains of castles are a visible link to the long history of settlement within Denbighshire, dating from before medieval times. A string of prominent stone hillforts from the Iron Age can be found at Moel Arthur, Penycloddiau, Moel y Gaer, and Caer Drewyn among other summits across the Dee Valley and Clwydian Range [See reference 59]. Many of these hillforts can be found along the route of Offa's Dyke, along the eastern edge of the County. The Heather and Hillforts project was established through the Heritage Lottery Fund in 2012 to better manage access and use of the historic uplands in the Clwydian Range, and to promote carefully thought out and designed recreational and educational routes along the string of Iron Age hillforts. As part of the Heritage Lottery Fund project, erosion restoration was also undertaken at Moel Arthur and Caer Drewyn.

**3.69** There are also elements of more recent history throughout Denbighshire, with estate parklands and manors derived from industrial wealth and power accumulated in the 19<sup>th</sup> and 20<sup>th</sup> centuries. Multiple areas of Registered Parks and Gardens are located in the north between Denbigh and Rhuddlan, and in the centre of the County near Ruthin.

**3.70** In the southeast of Denbighshire, the Pontcysyllte Aqueduct and Llangollen Canal, a designated UNESCO World Heritage Site, passes through the Dee Valley along the edge of the Berwyn range. Built in the early 19<sup>th</sup> century, the aqueduct and canal are a key feature of the surrounding valley and form an integral part of the cultural landscape. As a designated landmark, maintaining the integrity of the aqueduct and canal is a priority, with new developments required to avoid adverse effects on its setting [See reference 60]. In recent years, increasing visitor numbers have placed pressure on the landmark, putting it at risk. In collaboration with the Clwydian Range and Dee Valley AONB's 'Picturesque Landscape Project', new interpretation panels have been installed along the WHS site and canal as part of a 5 year project to increase understanding of the heritage in the area [See reference 61]. Just east of the Denbighshire administrative boundary in the nearby settlement of Trevor, improvements around the Pontcysyllte Aqueduct include proposals for a rewilding project, new visitor centre, and woodland activity area, funded by the UK Government's Levelling Up Fund [See reference 62].

**3.71** Given the density and breadth of heritage features within the County, there are numerous opportunities for enhanced protection and education around the historic environment. A GI-led strategy should integrate these strands into any intervention, ensuring that heritage assets continue to be protected and are embedded and understood as part of the physical fabric of the landscape.

### Town centres

**3.72** The gradual decline of the traditional high street has been noted throughout the country, particularly over the past decade as online shopping has grown in popularity. This trend accelerated in 2020 as the beginning of the COVID-19 pandemic necessitated a drastic reduction and evolution of in-person shopping, and changes in working patterns. This has resulted in commercial centres subject to more and longer vacancies, with less footfall and activity within town centres, and a sense of neglect.

**3.73** Denbighshire County Council, as part of their preparation of the LDP, have completed a 'Town Centre Health Check (2022)' [See reference 63]. The report seeks to better understand local footfall within settlements, levels of vacancy, and projected growth and needs within town centres. Although retail vacancy rates across the nation are still elevated due to impacts of the pandemic, Denbighshire has slightly higher than average rates [See reference 64]. Reported town centre retail vacancies hover around 20% in some of the larger settlements, such as Rhyl and Denbigh (ibid).

**3.74** Within the same report, it also identified that many of the larger settlements within Denbighshire have tourist driven footfall, such as Rhyl, Prestatyn, Llangollen and Denbigh, with coastal locations and historic features identified as major visitor draws. Other settlements such as Rhuddlan, Ruthin and St Asaph had relatively stable footfall throughout the year, indicating a more local trend.

**3.75** Denbighshire settlements have recently been the focus of regeneration opportunities, with significant investments from both the Welsh Government project 'Transforming Towns' and from the UK Government's Levelling Up

Fund, alongside various other sources. Both Rhyl and Ruthin have recently been recipients of Levelling Up funds.

**3.76** The Rhyl Regeneration Project is progressing, with up to £65m aimed at the revitalisation of the town centre, the creation of a new Youth Centre, new housing developments, improving the promenade and connection to the beach, creation of a coastal defence scheme, and other recreational schemes associated with its coastal location [\[See reference 65\]](#). Major projects within the Rhyl Regeneration Project include;

- Rhyl Town Centre Vision; aims to improve the public realm, introducing greenery, improving community spaces, improved pedestrian and cyclist connectivity, and regeneration of the Queen's Market buildings.
- Greening Rhyl; aims to develop and improve green spaces within Rhyl Town Centre, creating new habitats and 'green corridors'.

**3.77** GI is a proven tool to promote urban regeneration and community. Some studies have shown that incorporating GI into public open spaces within settlements can improve economic activity by up to 40% [\[See reference 66\]](#). Increasing the attractiveness and accessibility of these public spaces can encourage people to stay longer, increasing footfall and commercial activity, and thus attracting new investments and increasing value. Evidence suggests that integration of green space and proximity to tree-lined streets can add up to 20% to the total value of properties [\[See reference 67\]](#).

### Landscape character and setting

**3.78** The gradual erosion of landscape character through development, mismanagement or neglect can lead to a disconnect between locals and their heritage.

**3.79** The landscape of Denbighshire is varied, with a beautiful coastline in the north, undulating pastoral landscape and river valley farmland in the centre, and dynamic upland hills and valleys in the south-east. Diversity within the

landscape provides a distinct setting for the people and settlements across the County. Settlements located along the coast in the north are built around their proximity to the sea, with their coastal heritage evident in both settlement pattern and historic infrastructure. The pastoral river valley in the centre of the area provides a rural setting for the historic market towns such as Ruthin and Denbigh. In the south and south-east of the area, settlements such as Llangollen, Corwen and Llantysilio draw on their upland setting, with key views and settlement patterns arranged along the winding valleys.

**3.80** Despite the setting of the coastal settlements within Denbighshire it has been noted that the connection from town centre to seaside has deteriorated over past years. As part of the Rhyl Regeneration Project, this disconnect has been noted as one of its biggest issues, identifying the tarmac parade along the waterfront as a dividing feature [\[See reference 68\]](#).

**3.81** Set within the Pontcysyllte Aqueduct and Llangollen Canal World Heritage Site, the town of Llangollen has a strong relationship with the surrounding valley and hills. Alongside the historic features and Victorian architecture, the town still maintains its dense layout and street pattern, and key views out to the hills. The Llangollen Town Design Guide states that new development must be sympathetic to the surrounding streetscape, protect the town's historic fabric and unique characteristics, and encourage public spaces and routes which are safe and work effectively for all [\[See reference 69\]](#).

**3.82** Variations in landscape setting have produced unique characteristics in the different areas of the County, which should be reflected in any GI-led proposals.

## Summary of key issues

- Historic features are at risk from increasing visitor pressures and should be protected. This includes the WHS and numerous archaeological features which given location and spatial extent can be difficult to provide adequate protection for.
- Historic town centres affected by vacancies and decline, such as in Rhyl and Denbigh, and which provide gaps for uncharacteristic new developments or anti-social behaviours.
- Gradual erosion of landscape character may lead to loss of distinctiveness and sense of place. Lack of connection between landscape and settlement.

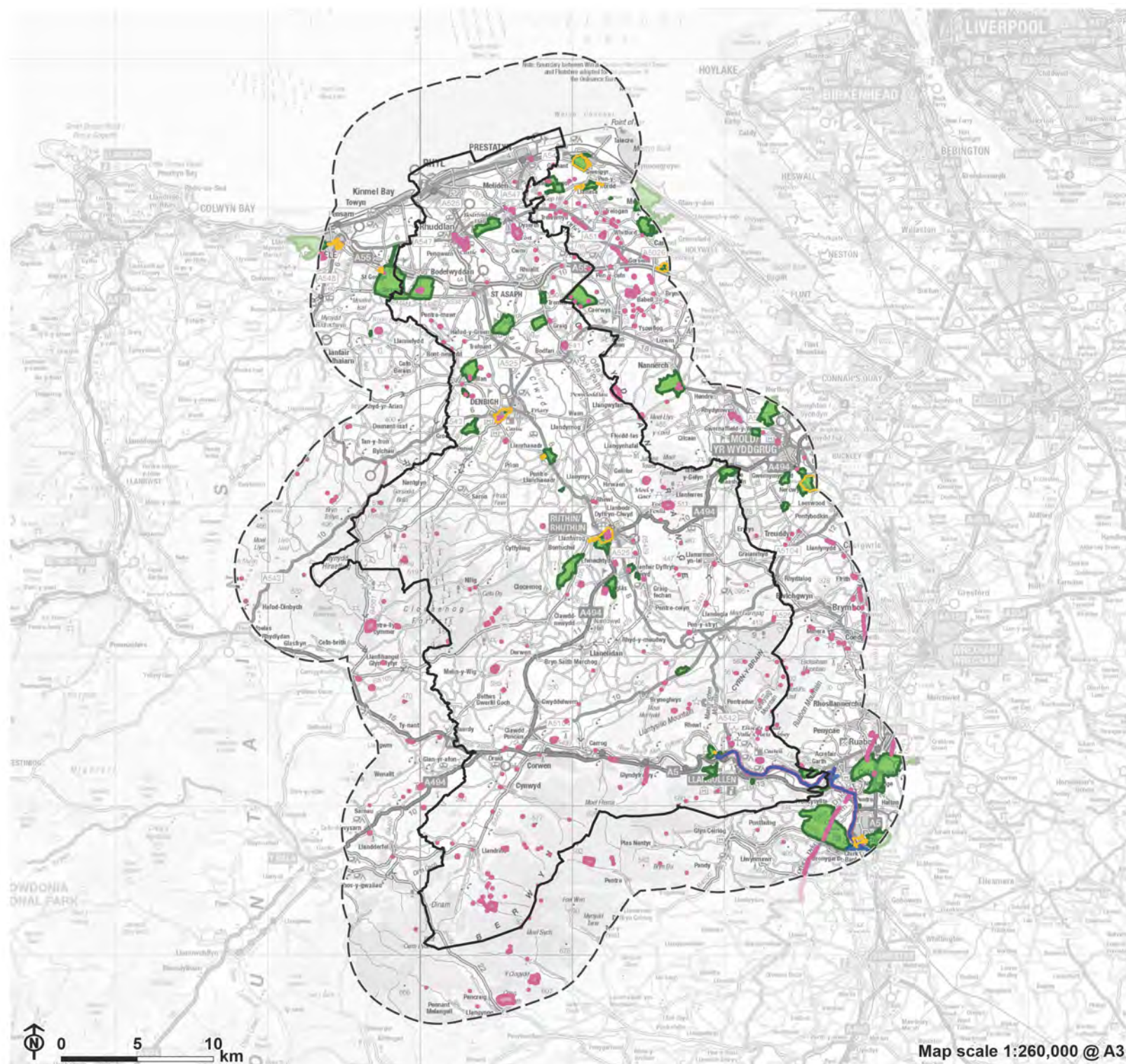
## Emerging priorities

- New development should be carefully planned and designed to retain local character and support community growth and activities. GI projects should aim to support the distinct needs of individual settlements, providing for local interests while bolstering tourism.
- Creation of community-focused green spaces within town centres, with the aim of providing support for public engagement, and re-animating settlement cores.
- Identification of opportunities to promote heritage tourism, to increase understanding of archaeological and cultural history, and to improve access while mitigating recreational impacts.
- Linking town centres with their natural and historic landscapes, providing enhanced wayfinding and connectivity between settlement/seaside and settlement/countryside.



Figure 6: Historic Features

- Denbighshire county boundary
- 5 km from Denbighshire county boundary
- Conservation area
- Pontcysyllte Aqueduct and Canal World Heritage Site
- Registered Parks and Gardens
- Scheduled monument



Map scale 1:260,000 @ A3

## People

### Context

**3.83** Access to green and blue spaces on our doorstep has long been known to benefit physical health. It is also increasingly linked to positive mental health – whether it is a footpath for a morning dog walk, leafy trees on the local high street, or a local area to play. The experience of the Covid-19 pandemic in 2020 and the importance of access to local greenspaces during the lockdowns heightened awareness of these benefits.

**3.84** Inequalities in access to greenspaces have also been correlated to inequalities in health outcomes and it has been evidenced that deprived communities are much less likely to have greenspace close to home [See [reference 70](#)]. Evidence has shown that the ‘naturalness’ of greenspaces can improve mental health benefits. However, it is important to note that preferences for types of greenspace vary across different groups and it is important the provision of greenspace meets the needs of the local communities it serves.

**3.85** Natural spaces are not only a place for exercise. They also provide opportunities to come together and socialise, improving community cohesion. This might happen at the scale of a ‘pocket park’ or a larger community garden where people can connect through volunteering and can also act as venues for community events. Green spaces can also be a setting for preventative healthcare. ‘Green social prescribing’, for example, works by linking people with specific medical conditions with local ‘green’ activities, such as walking groups, community gardens and food-growing projects.

**3.86** Walking, cycling and wheeling infrastructure is a key part of the GI network, with the greening of these routes providing linear connections for wildlife, attractive connections between greenspaces for people as well as features which provide health and wellbeing benefits in their own right.

## Health and wellbeing in Denbighshire

**3.87** This section sets the context on current health and wellbeing indicators in Denbighshire to help demonstrate the benefits enhanced GI could provide communities in Denbighshire.

### Physical health

**3.88** 80.8% of working age adults in Denbighshire are in good health. This is above the Wales average (76%). For people over 65 years of age, Denbighshire has a higher percentage of people in good health (60.0%) than the Welsh average (56.1%) **[See reference 71]**.

**3.89** Life expectancy for women in Denbighshire is 81.4 years, although healthy life expectancy is 67.7 years. The life expectancy for women in Denbighshire is lower than the national average of 82.6 **[See reference 72]**. Women in Denbighshire spend 83.2% of their life in good health.

**3.90** Life expectancy for Men in Denbighshire is 78.1 years, although healthy life expectancy is 67.5 years. The life expectancy for men in Denbighshire is marginally lower than the national average of 78.6 **[See reference 73]**. Men in Denbighshire spend 86.5% of their life in good health.

**3.91** Around 52.2% of adults in Denbighshire are overweight or obese, which is lower than the national average in Wales of 59.9%. 51.5% of those in Denbighshire report being active for at least 150 minutes the previous week. This is lower than the Wales average, as across Wales, 53.2% report being active.

**3.92** The number of people with limiting long term illness in Denbighshire is around 22,000, making up roughly 23.5% of the population. This is marginally lower than the Wales figure of 23.7%. The number of people with limiting long

term illnesses in Denbighshire is predicted to rise by about 3,000 each between 2015 and 2035 [\[See reference 74\]](#).

### Mental health

**3.93** The average mental well-being score for Denbighshire is 51.6 compared to the Wales average of 51.4 and the BCUHB average of 52.3. The higher the score the better the mental health. Life satisfaction for working age adults in Denbighshire is 80% which is the lowest in North Wales, and below the Wales average (81.8%). Despite this, life satisfaction for older adults in Denbighshire is 86.7%, and is above the Wales average (84.7%).

**3.94** Social isolation can reduce independence and damage mental health but can also lead to problems with physical health if services such as GPs, dentists and active leisure and social opportunities are inaccessible. Loneliness in Denbighshire, particularly the north, is a significant issue [\[See reference 75\]](#). Rhyl in north Denbighshire is amongst the highest Middle Super Output Areas (MSOAs) for predicted risk of loneliness amongst usual residents. Despite this, 54.8% of adults in Denbighshire report feeling that they belong to their community, which is above the Wales average (52.2%). Denbighshire also has the joint lowest percentage of adults reporting they feel lonely overall (12%) which is below the Wales average (15%).

### Community cohesion and deprivation

**3.95** Community cohesion in Denbighshire is generally slightly lower than the Welsh average. The National Survey for Wales states that the percentage of people who agree that they have a 'feeling of belonging to the local area' is 81% in Denbighshire compared to an all-Wales figure of 82%[\[See reference 76\]](#).

**3.96** The Welsh Index of Multiple Deprivation measures relative deprivation across a range of domains (income; employment; health; education; access to services; community safety; physical environment; housing) at the Lower Super

Output Area (LSOA) level for the whole of Wales. 7 LSOAs in Denbighshire are in the 10% most deprived in Wales (12.4% of all its areas) for most of the domains (and especially in terms of health) except the Physical Environment domain. Denbighshire has the top 2 ranked LSOAs most deprived in Wales overall: Rhyl West 2 and Rhyl West 1. Multiple Deprivation in West and south-west Rhyl is among the highest in Wales and encompasses worklessness, low income, and poor educational outcomes. Rhyl West 1, Rhyl West 2 and Rhyl south-west 2 are identified by the Wales Index of Multiple Deprivation as areas of 'deep-rooted' deprivation. Areas with 'deep rooted deprivation' are those that have remained within the top 50 most deprived – roughly equal to the top 2.6% – small areas in Wales for the last five publications of WIMD ranks [See reference 77].

## Existing GI assets and issues

### Access and accessibility

#### Location of greenspace

**3.97** An ever-increasing number of people live in densely populated, urban areas, and depend on urban green infrastructure for local generation of ecosystem services [See reference 78]. Denbighshire is the ninth least densely populated of Wales' 22 local authority areas, with an average of around 114.5 people per km<sup>2</sup> [See reference 79]. This is not consistent across the authority however, with higher densities of 3,005 people per km<sup>2</sup> around more built-up urban settlements such as Rhyl, and densities as low as 8.4 people per km<sup>2</sup> in more rural areas of the County such as Nantglyn.

**3.98** The Access to Natural Green Space Standard (ANGSt) framework adopted by Natural Resources Wales established the standard that everyone should be within 300 metres of an accessible greenspace of at least 2 hectares in size. Within established urban areas this is not always possible, which is why more recent greenspace analyses have considered access to smaller existing

greenspaces as well [See reference 80]. In Denbighshire, the areas with the highest demand for urban accessible greenspace are located in areas with higher levels of deprivation [See reference 81]. Notably, the Welsh Index of Multiple Deprivation statistics based on a range of socio-economic factors indicate that 'West Rhyl 2' is the most deprived of the 1,896 Lower Super Output Areas in Wales and 'West Rhyl 1' is seventh [See reference 82]. As such, here there is a high demand for accessible greenspace, particularly in west Rhyl [See reference 83]. This trend continues through the County, with other areas in high demand for access to greenspace located primarily around more urban main centres and in areas of higher relative deprivation, including Prestatyn, Denbigh and Ruthin and some smaller villages such as Glyndyfrdwy and Cyffylliog to the south. Figure 7 shows areas of highest demand for accessible greenspace across Denbighshire.

**3.99** Policy BSC11 of Denbighshire's adopted Local Development Plan and Denbighshire's Recreational Public Open Space SPG requires developments to contribute to open space provision. The Policy also sets out the Council's standard for open space provision, which reflects the Fields in Trust 'benchmark' standards. The standards include 1.6 hectares per 1,000 population for outdoor sport, including playing pitches, 0.25 hectares per 1,000 population for children's equipped play space and 0.55 hectares per 1,000 population for children's informal space. Overall, the minimum standard in Denbighshire is therefore 2.4 hectares per 1,000 population (or 24 m<sup>2</sup> per person) [See reference 84].

### Types of open space

**3.100** Different types of open space serve different purposes e.g. sports pitches, play, natural spaces, formal parks etc. particularly in areas of differing demographics and population densities. Public parks and gardens, including urban parks, country parks and formal gardens play an important role in communities particularly for the older generation. Parks and gardens are areas of land normally enclosed, designed, constructed, managed and maintained as public parks and gardens and they do not therefore include such open spaces

as informal open space or parkland that is not usually accessible for the enjoyment of the general public.

**3.101** Public parks and gardens are intended to provide accessible, high quality opportunities for a variety of informal recreation and community events [See reference 85]. Within Denbighshire, public parks and gardens tend to be located within built up settlements, including Rhyl, Prestatyn, Bodelwyddan, St Asaph, Denbigh, Ruthin and Llangollen. Whilst these provide important access to greenspace in more urban areas, they are limited in more rural areas of the County. Similarly, these same areas benefit from greater accessibility to amenity greenspace. Amenity greenspaces are smaller doorstep spaces which include informal recreation spaces, green spaces in and around housing and village greens. They most commonly consist of mown grass with boundary planting and sometimes include play facilities providing opportunities for everyday access to greenspace. However, they often have low nature conservation value [See reference 86].

**3.102** Natural and Semi-natural greenspaces are higher in nature-rich qualities and therefore provide greater contact with nature, enhancing the health benefits of use. They can include habitats such as woodlands, grasslands and wetlands [See reference 87]. With population density below the Wales average of 140 persons per km<sup>2</sup>, Denbighshire is classified as a rural authority [See reference 88]. As such, Denbighshire tends to have higher access to semi-natural greenspace than other authorities in Wales or the wider UK. This includes smaller parcels of Natural and Semi-natural land around some urban settlements, such as the open rough grasslands of Twt Hill in Rhuddlan, or larger greenspaces in rural areas such as Loggerheads, west of the Moel Famau Country Park along the eastern boundary of Denbighshire. Despite the higher number of Natural and Semi-natural greenspaces in Denbighshire, there is still a high percentage of residents with limited access, which is typical of more urban, well populated settlements like Denbigh, St Asaph and Ruthin. Due to the rural nature of Denbighshire however, there are many green corridors which facilitate access to the countryside. Green corridors link places together and are often captured within the natural and semi-natural greenspace typology. Some rural settlements in Denbighshire have a large number of these in the form of walking paths and cycle routes countryside [See reference 89].

## Public rights of way and active travel network

**3.103** Figure 8 shows the active travel network across Denbighshire including public rights of way, cycle routes and national trails.

**3.104** Denbighshire has a recorded network of 1,298 kms (809 miles) of Public Rights of Way (PROW) of which 84% (1,088 kms) are footpaths and available only to walkers. Bridleways, which can also be used by horse riders and cyclists, make up 14% of the network (182 kms) and byways open to all traffic, including vehicles, make up 2% (26 kms). The right of way network is highly valued and extensively used both by residents and visitors of Denbighshire [See reference 90]. It is the main way people have of getting into the heart of the countryside for recreation, to relax, explore and enjoy peace and tranquillity. However, the PROW network is often fragmented between settlements, with often limited connections to local amenity greenspaces, semi-natural greenspaces and the wider rural area. The most recent comprehensive survey carried out in 2002 by the Public Rights of Way Service found that, out of nearly 10,000 stiles, signposts and other items of path furniture on the PROW network, many were dilapidated or missing while other were nearing the end of their useful lives [See reference 91]. Without maintenance, the PROW network can become further fragmented, discouraging to newer users and encourage alternative and often dangerous routes in place of a managed network.

**3.105** In September 2014, the Welsh Government introduced the Active Travel (Wales) Act which makes it a legal requirement for local authorities in Wales to map and plan for suitable routes for active travel within certain settlements in Denbighshire, as designated by the Welsh Government. The first stage of the act required local authorities to produce Existing Routes Maps (ERMs) to show existing routes in Denbighshire that the council considered suitable for active travel. Denbighshire has therefore created ERMSs for Denbigh, Dyserth, Llangollen, Meliden, Prestatyn, Rhuddlan, Rhyl, Ruthin and St. Asaph. Integrated Network Maps (INMs) have also been produced for the same areas (and additionally Bodelwyddan and Corwen) to show potential new routes or improvements to existing routes in Denbighshire. Annual reports demonstrate



the progress of the Council in achieving goals outlined in INMs [\[See reference 92\]](#).

**3.106** There are a variety of community walking groups that utilise Denbighshire's path network, including PROW. These groups offer opportunities to meet new people, with the aim of getting people physically active. Some walking groups around Denbighshire include walking groups sponsored by Mind that lead walks from Corwen and Ruthin on Tuesdays, Corwen on Wednesdays, Denbigh on Thursdays and Llangollen on Fridays [\[See reference 93\]](#). The Vale of Clwyd Ramblers also offer popular walks in and around Denbighshire, including into adjacent areas towards the Conwy Valley and into Flintshire, with walks further afield into Snowdonia also offered [\[See reference 94\]](#).

**3.107** Ride North Wales, an initiative by Denbighshire Council, describes short, medium and long distance recreational cycling routes in and around Denbighshire. This includes 11 routes around the Clwydian Range, three routes around the Dee Valley, six routes around Hiraethog and Llyn Brenig, four routes around Coed Llandegla, and two tracks at Marsh Tracks and along the coastline of Rhyl [\[See reference 95\]](#).

### Quality of greenspaces

**3.108** Open space is an essential element of a modern everyday life and it is widely recognised that the provision of high quality 'public realm' facilities such as parks and gardens, civic spaces and informal greenspaces are not only highly valued by residents of an area, they can assist in the promotion of an area as an attractive place to live, increase property values and improve local environmental quality. However, these benefits are significantly dependent on the *quality* of the open space [\[See reference 96\]](#).

**3.109** The Green Flag Award is an international standard for parks and green spaces, operated by Keep Wales Tidy in Wales. The Award is a sign to the public that a park or green space boasts the highest possible environmental

standards, is beautifully maintained and has excellent visitor facilities. Wales holds more than a third of the UK's Green Flag community sites, which are maintained and run by volunteers. In Denbighshire, there are six Green Flag parks and green spaces. These include Ffrith common land park, Coed y Morfa / Prestatyn Community Woodland and the Marine Lake between Rhyl and Prestatyn in the north of the County and Maes Ysgawen, Llanferres Playing Field and Maeshafn Playing Field and Orchard towards Llanferres in central Denbighshire [See reference 97].

**3.110** The Green Flag Award is the only national quality benchmark standard for parks and open spaces in the UK, however, many local authorities have adopted their own localised quality standards. The most recent Open Space Assessment conducted by Denbighshire County Council in 2017 employed site visit criteria used for the Green Flag Award to assess the quality of Public Parks and Gardens in the County. Within their assessment, the Council did not consider amenity greenspace due to their typically small size, lack of biodiversity and recreational provision on these sites and the low maintenance required. They also did not consider Natural and Semi Natural Greenspace sites due to their complex and diverse biodiversity and typically large site size [See reference 98].

**3.111** Of the open spaces which were assessed the highest number of sites which were recorded to have poor quality and were in need of attention are located in Ruthin. Other sites of recorded poor quality were typically in the other main centres, including St. Asaph, Prestatyn and Meliden. Further sites of average quality that could be improved were concentrated in Denbigh, Rhyl, Prestatyn, and Meliden. It is worth noting however, that these areas also have some of the highest number of Public Parks and Gardens due to their status in the County's settlement hierarchy, however, which may skew figures.

## Summary of key issues

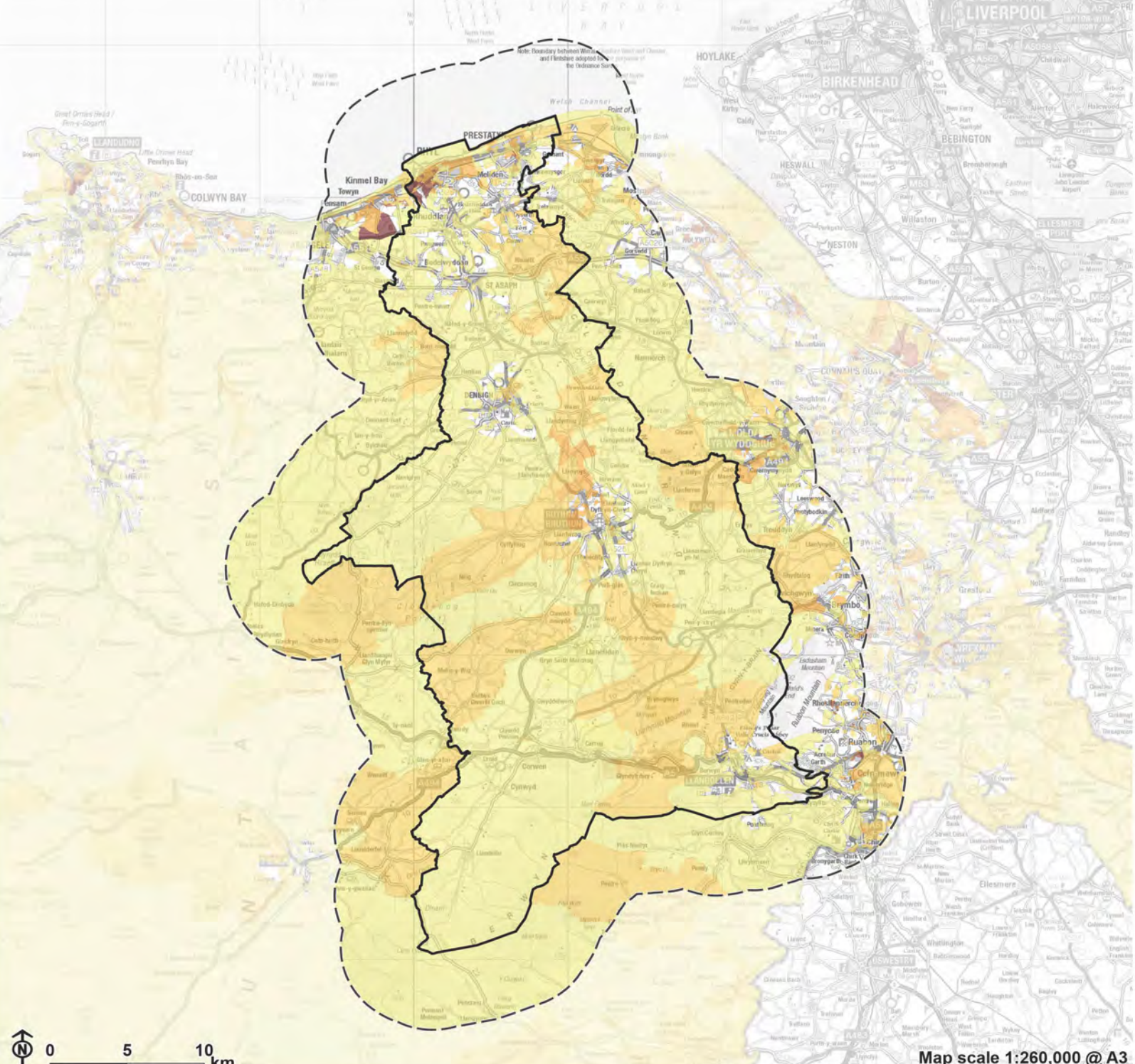
- The most deprived areas in Denbighshire have the most limited access to greenspace and are in the greatest need. This includes areas such as Rhyl and Denbigh.
- Access to Natural and Semi-natural greenspaces is low in some population centres including Denbigh, St Asaph and Ruthin.
- Denbighshire's PROW network is fragmented and in need of maintenance to ensure its continued use.
- The standard for public parks and gardens is lowest in Denbighshire's main centres, where higher quality greenspace is often needed the most. This includes areas such as St. Asaph, Prestatyn and Meliden

## Emerging opportunities

- Facilitate greater access to quality greenspace in more deprived areas of the County, including Rhyl and Denbigh.
- Provide greater access to Natural and Semi-natural greenspaces in main centres of the County including Denbigh, St Asaph and Ruthin.
- Enhance active travel provision across Denbighshire, ensuring that the network is cohesive and managed effectively to encourage its continued use and attractiveness to new users
- Improve the quality of public parks and gardens in Denbighshire's main centres. This includes areas such as St. Asaph, Prestatyn and Meliden

Figure 7: Demand for Accessible Greenspace

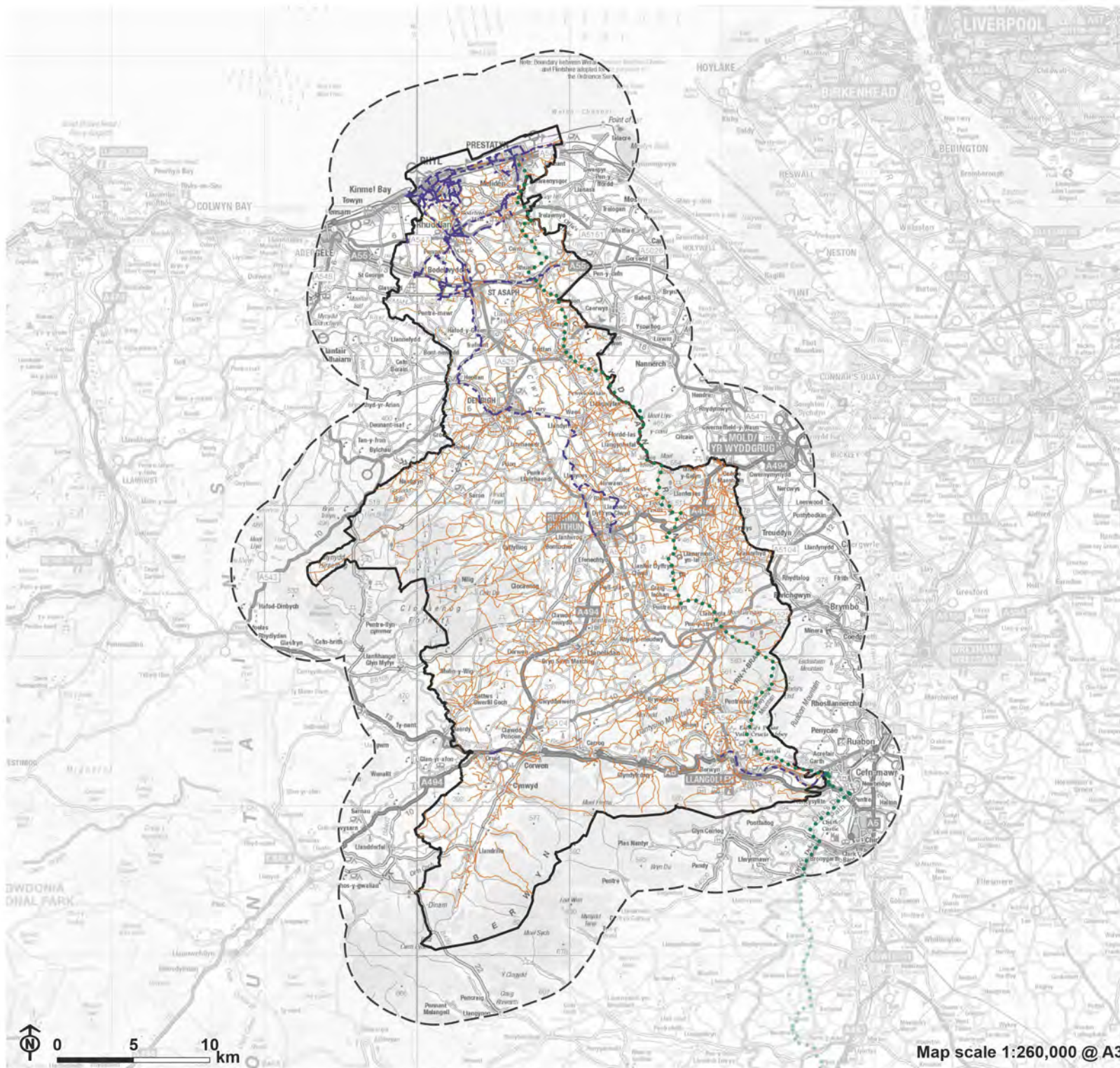
- Denbighshire county boundary
- 5 km from Denbighshire county boundary
- Demand for urban accessible green space**
- Lowest priority
- 
- 
- Highest priority



Map scale 1:260,000 @ A3

Figure 8: Path Network

- Denbighshire county boundary
- 5 km from Denbighshire county boundary
- Cycle route
- National Trail
- Public Right of Way



Map scale 1:260,000 @ A3

## Chapter 4

# Strategic objectives

**4.1** From the baseline assessment of the GI network in Denbighshire, a series of eight strategic objectives have been developed which can be used to guide the identification of GI opportunities in order that they help to address the key issues identified in the existing network.

## Objectives

**4.2** This vision is given further definition by a series of nine strategic objectives which in turn inform the opportunities identified.

- SO1: Improve the quality and resilience of habitats across the County, targeting efforts at the lowland focal habitat network.
- SO2: Integrate 'nature-based solutions' into all projects for the improvement of parks and green spaces and the wider public realm.
- SO3: Increase woodland canopy cover across Denbighshire, particularly in the most deprived areas of the County and where it would have benefits for biodiversity, carbon sequestration, NFM and air and water quality.
- SO4: Integrate SuDS into new development and retroactively integrate them in areas of high flood risk across Denbighshire.
- SO5: Carefully plan and design GI within new development to retain local character and support community growth and activities, ensuring that GI projects aim to support the distinct needs of individual settlements, providing for local interests while bolstering tourism.
- SO6: Facilitate greater access to quality greenspace (including Natural and Semi-natural greenspace and public parks and gardens) in the main settlements of the County, with a particular focus on areas of higher deprivation.

## Chapter 4 Strategic objectives

- SO7: Create new community-focused green spaces within town centres, with the aim of providing support for public engagement, and re-animating settlement cores, focussing on areas where there is currently poor access to good quality greenspaces and high levels of deprivation.
- SO8: Enhance and establish new active travel links within town centres and as connecting routes between town centres and their natural and historic landscapes, providing enhanced wayfinding and connectivity.

## Chapter 5

# GI Opportunities

**5.1** Using the baseline analysis and strategic objectives as a guide, a series of 10 GI opportunities have been identified. These include two ‘strategic’ opportunities which connect across significant areas of the County and are ambitious in scale and eight locationally specific opportunities which are concentrated around singular settlements while also providing opportunities to connect into the wider county-wide GI network.

**5.2** The ten opportunities arose from a long-list of opportunities which were short listed based on their practical application and ability to meet multiple strategic objectives. The strategic objectives which each opportunity will contribute towards are outlined in the table below.



**Table 5.1: GI opportunities**

Opportunity	Location	SO1	SO2	SO3	SO4	SO5	SO6	SO7	SO8
1. Creation of active travel route and expansion of woodland along the Rhyl Cut, adjacent to Maes Gwilyn estate.	Rhyl	x	x	x		x	x	x	
2. 2a/2b. Establish an accessible multi-modal travel corridor along the River Clwyd.	Rhyl / Rhuddlan	x	x	x			x		x
3. Promote opportunities for greening at Prestatyn Shopping Park and along the High Street.	Prestatyn		x	x	x	x		x	
4. Increase the quality and multifunctionality of low-quality amenity greenspace in the residential estate bounded by Marsh Road to the north and Rhydwen Drive to the south.	Rhyl	x	x	x	x	x	x	x	
5. Embrace and enhance the riverine setting of the settlement, between two waterways of St Asaph.	St Asaph		x		x	x	x	x	
6. Increase the extent and connectivity of habitat and greenspace surrounding Denbigh.	Denbigh	x	x	x			x		
7. Increase the extent and connectivity of habitat and greenspace surrounding Ruthin.	Ruthin	x		x			x		

**Chapter 5** GI Opportunities

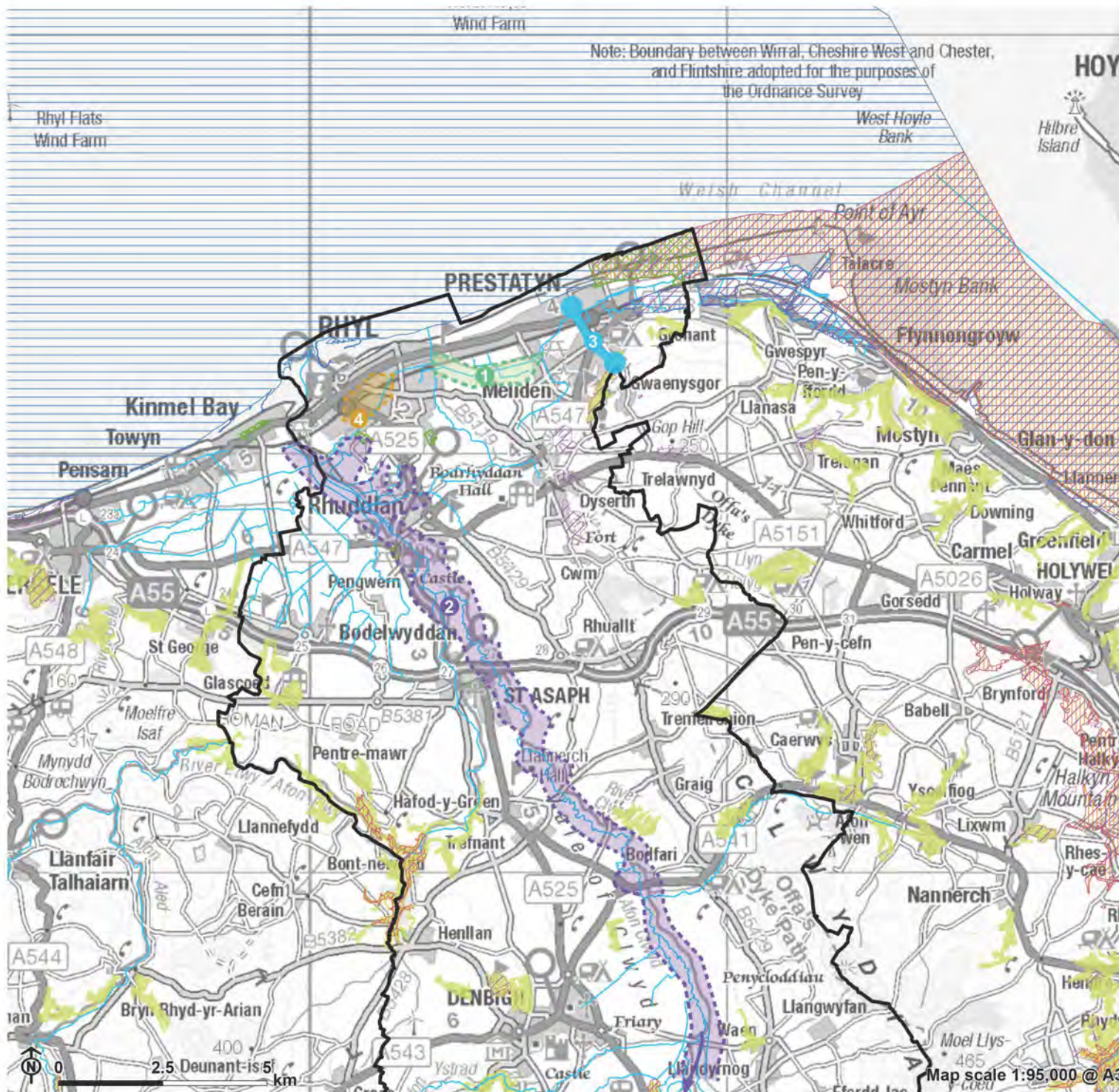
Opportunity	Location	SO1	SO2	SO3	SO4	SO5	SO6	SO7	SO8
8. Refresh riverside public spaces along the Dee Valley.	Llangollen, Corwen					x	x	x	
9. Promote and maintain a Heritage Trail Network from valley settlements to historic uplands	Uplands (River Dee and Clwyd Range)					x	x		x
10. Provide multifunctional community spaces and accessible travel routes to accommodate both visitors and locals in Llangollen.	Llangollen			x		x		x	x

**5.3** The remainder of this chapter outlines each of the ten opportunities in detail. Each opportunity is presented as follows:

- **Context:** covering the location of the opportunities and local issues in the GI network
- **Purpose:** why the opportunity is important and which strategic objectives it addresses
- **Description:** detail on the main components of the opportunity and why these are beneficial
- **Challenges:** an overview of what the main challenges may be to delivery
- **Delivery:** an overview of how the opportunity could be delivered through the planning system via mechanisms outlined in chapter 6. Where it has been identified that an opportunity is unlikely to be able to be delivered via the planning system alone, alternative or additional delivery mechanisms are identified.

**5.4** The opportunities are split into three areas, north, central and south Denbighshire and their indicative locations are shown on accompanying figures.

**Figure 9: Strategic Opportunities - North Denbighshire**



- Denbighshire county boundary
- Lowland core habitat network - woodland
- Local Nature Reserve
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- Main Rivers

**GI Priority Projects**

- 1** Creation or expansion of woodland areas adjacent to Maes Gwilyn estate and the Rhyl Cut.  
*Strategic.* Develop a multi-functional blue-green corridor along the River Clwyd.
- 2** Support the extension of the Lon Clwyd cycle route and PRoW network south of Rhuddlan.
- 3** Promote opportunities for greening at Prestatyn Shopping Park and along the High Street.
- 4** Increase the quality and multi-functionality of low-quality amenity greenspace in the residential estate bounded by Marsh Road to the north and Rhydwen Drive to the south

## Key GI Opportunities

### North Denbighshire

#### **GI Opportunity 1: Creation of active travel route and expansion of woodland adjacent to Maes Gwilym estate and ‘Rhyl Cut’.**



### Context

**5.5** The Rhyl Cut, designated as a statutory 'main river' watercourse, runs eastwards from the River Clwyd, across Rhyl town centre via Vale Road and

Grange Road and then out towards Prestatyn. As it leaves Rhyl, it passes through the Maes Gwilym nature reserve, adjacent to the Maes-Y-Gog residential estate. The Maes Gwilym reserve received substantial funding in 2019 to create additional woodland, restore a wetland area, enhance the site for biodiversity, improve footpath access and introduce seating areas with benches. This was completed at the end of 2022 and is now a popular local recreational destination.

**5.6** The section of the Cut between Rhyl and Prestatyn passes through maintained private agricultural land. The Cut passes under six private bridges primarily used for agricultural vehicle access between fields, and two private roads. Local information suggests that the Cut is currently poorly maintained and prone to fly tipping and accordingly has poor water quality [\[See reference 99\]](#). The Flood Map for Planning (FMfP) shows that the area surrounding the Rhyl Cut is susceptible to surface water & small watercourses flood risk.

**5.7** Besides along the sea front, the PRoW network between Rhyl and Prestatyn is fragmented and pedestrian travel between the two towns is reliant on the use of pavements along busy roads. There is no dedicated accessible footpath / cycleway between the two settlements. The Rhyl Cut runs in close proximity to some of the most deprived areas in Wales.

### Purpose of the opportunity

**5.8** This opportunity seeks to establish an accessible, interconnected footpath / cycleway along the south bank of the Cut between Maes Gwilym nature reserve in the east of Rhyl and Ffordd Penrhwylyfa in Prestatyn, incorporating new woodland, scrub and wildflower planting to create a continuous habitat corridor between the two settlements.

**5.9** This opportunity aligns with the outlined strategic objectives as it has the potential to create and improve the quality of woodland habitats and increase canopy cover, increase carbon sequestration, improve water quality, facilitate

greater access to new, quality greenspace and enhance and establish new active travel links between the settlements of Rhyl and Prestatyn.

### Description

**5.10** The primary component of this opportunity is the creation of an accessible active travel route along the south bank of the Cut between the two settlements. The route would cross to the north bank of the cut as it reaches Ysgol Clawdd Offa Primary school utilising the existing access bridge in this location. The route could then be extended along the north of the cut through Prestatyn, terminating at the Prestatyn Nature Reserve where it meets the Prestatyn Gutter and an existing Public Right of Way. Tying into the existing PRoW network here and the existing cycle route to the south of the nature reserve would enable a continuous link all the way to the town centre. The creation of this route will enable increased access to nature and active travel options for locals and visitors by providing a fully off-road, safe active travel link between Rhyl and Prestatyn. This will encourage increased positive engagement with the local environment and nature, strengthening appreciation for the area's setting, reducing existing instances of anti-social behaviour and increasing general well-being.

**5.11** The path should follow the natural form of the Cut, beginning at the Maes Gwilym nature reserve and ending at Ffordd Penrhwylyfa in Prestatyn, passing through the natural landscape and spanning a distance of approximately 2km. To ensure accessibility, the pathway is expected to be no less than 2 metres wide with a semi or fully bound surface to allow for safe wheelchair access and cycling. The new active travel link should achieve high standards of accessibility, including the provision of benches and quality waymarks. Other components include;

- Cycle infrastructure, including bike storage and options or tools for emergency repairs, situated at both ends of the route
- Sufficient seating to accommodate various population demographics and fitness levels

**5.12** In addition to the creation of a new active travel link between the two settlements, this pathway will provide the opportunity to establish a new 10m wide habitat corridor adjacent to the path comprising a mix of woodland, scrub and wildflowers. This habitat would create a continuous habitat corridor spanning between the two settlements. There would be particular benefit for pollinators with the route falling within a Bug Life 'B-Line'. The provision of benefits from this planting will be reliant on:

- That all planting is selected and designed in consultation with an ecologist.
- An effective maintenance programme being put in place will be key ensuring the health of habitat, to avoid any negative impact on flood risk to adjacent farmland, and that clear visibility and access along the path is preserved.

### Challenges

**5.13** The proposed network will span approximately 2km of private agricultural land, and as such, a robust consultation process with local landowners and residents will be required, and may encounter extensive pushback from consultees, particularly farmers. Any planting should be done in collaboration with landowners, making obvious the benefits of habitat creation, and potential funding schemes such as the Sustainable Farming Scheme that may promote the benefits of the scheme to local landowners.

### Delivery mechanisms

**5.14** This opportunity could attract funding for delivery, both through the planning system and from other sources. A list of potential funding sources and delivery partners is provided below.

### Planning system

- Developer contributions for infrastructure



- Delivery of net benefits for biodiversity in cases where off-site contributions are regarded as exceptional

### Other Sources

- Sustainable Farming Scheme
- National Lottery Community Fund
- Nature Networks Fund
- Sustrans
- Welsh Government Active Travel Fund (administered by Transport for Wales)

### Potential delivery partners

- Landowners and farmers
- Natural Resources Wales
- North Wales Wildlife Trust
- Denbighshire County Council
- Local community groups

## Key Strategic Opportunity 2a / 2b: Establishing an accessible multi-modal travel corridor along the River Clwyd



### Context

**5.15** The River Clwyd is one of two major rivers in Denbighshire. The River Clwyd flows through Denbighshire, forming the border between Denbighshire and Conwy County Borough at its mouth. It rises 7 miles (11 km) south-west of Ruthin and falls about 1,200 feet (370 metres) as it flows 35 miles through the Vale of Clwyd, past St. Asaph, to the Irish Sea at Rhyl.

**5.16** The River Clwyd faces challenges from flood risk, water quality and pollution, all of which are likely to increase as a result of climate change. Notably, in 2015, almost half (48%) of all surface water bodies (as defined by

the Water Framework Directive) were not achieving good or better overall status in the NRW catchment of Clwyd, which includes the vast majority of the River Clwyd. Pollution from rural areas (including run-off from agriculture) was responsible for 36% of water bodies not achieving a good status. Land use along the river is largely pastoral agriculture, with some arable use. Sections of the eastern bank of the River Clwyd form part of the lowland core habitat network for grassland, with notable sections stretching from Rhyl to Rhuddlan and north east of St Asaph. There are limited blocks of woodland along the eastern bank of the river, particularly south of Rhuddlan but these are fragmented.

**5.17** The River Clwyd is also home to the Lon Clwyd cycle route which follows the east bank of the River Clwyd between Rhyl and Rhuddlan, connecting the two settlements. However, the PRoW network stretching beyond this is often fragmented, with limited connections to local amenity greenspaces, semi-natural greenspaces and the wider rural area.

### Purpose of the opportunity

**5.18** The purpose of this opportunity is to enhance habitat condition and connectivity along the River Clwyd whilst supporting the extension of the Lon Clwyd cycle route / PRoW network south of Rhuddlan.

**5.19** This opportunity aligns with the outlined strategic objectives, having the potential to improve the quality and resilience of habitats, integrate nature-based solutions to reduce flood risk and improve water quality, increase tree canopy cover, facilitate greater access to good quality greenspace and enhance and establish new active travel links.

### Description

**5.20** This opportunity would introduce additional riparian habitat in areas where it doesn't currently exist along the River Clwyd and to extend areas of existing

woodland. The focus of this should be on the eastern banks of the river, north of the A525 where there is the greatest amount of arable land and where existing tree canopy cover is lowest. WINS data shows the potential for riparian woodland, particularly towards the mouth of the river, north of the A525. The greatest amount of arable land is also found in this area. Increased riparian planting will provide natural flood management in this area as well as manage pollution / run-off from adjacent arable land, improving local water quality. Specific interventions to consider include the following:

- Where existing riparian tree cover exists and at natural bends in the river, widen areas of habitat by building off the existing vegetation foundation. Barriers to grazing should be implemented around new planting, allowing it to establish.
- Where possible, link pockets of habitat along the River Clwyd, creating a continuous buffer along the waterway as it passes through settlements and arable land. Riparian buffers should extend to a minimum of 2m either side of the river, rising to 5m wide or more where possible.
- Particularly where the River Clwyd passes through arable land, areas of new lowland habitat should be located in the most flood-prone parts of the fields, thereby reducing impacts on productive land. Selected plant species should be native and coordinated with local landowners and ecologists.

**5.21** This opportunity will complement the existing landscape scale project to reduce peak flows into the River Clwyd and improve biodiversity in the upper reaches of the river by Cadwyn Clwyd Cyfngedig, and contact should be made with this organisation to see how this opportunity can complement the existing project [\[See reference 100\]](#)

**5.22** This opportunity would also extend and improve the Lon Clwyd cycle route / PRow south of Rhuddlan, enhancing the fragmented PRow network in the area. The PRow network is highly valued and extensively used both by residents and visitors of Denbighshire. By ensuring the accessibility of Lon Clwyd is improved, this will provide greater recreational opportunities, promote contact with nature and enhance health benefits for a greater number of people. Furthermore, not only would this opportunity promote opportunities for walking, wheeling and cycling, but would also allow for alternate methods of transport

between smaller villages and towns for residents, promoting active travel in the north of the County. Specific interventions to consider include:

- New access points to the existing route north of Rhuddlan from Rhyl and Rhuddlan which are well defined and signposted to encourage use. Specific locations for this would include:
  - Near Tan-Yr-Eglwys Road to improve access to Lon Clwyd from Rhuddlan.
  - At Cefndy Road to improve access to Lon Clwyd from Rhyl.
- New path south of Rhuddlan, designed to be accessible for all users by incorporating typical path design recommendations, such as Sustrans' guidance for cycle path width, material, edging and drainage **[See reference 101]**.



## Challenges

**5.23** Any planting should be done in collaboration with landowners, making obvious the benefits of riparian planting / woodland creation, including enhanced water quality, flood protection and access to potential funding schemes such as the Sustainable Farming Scheme.

**5.24** Identifying funding for the cycle route may be a challenge, particularly where the route only serves a recreational purpose, rather than facilitating active travel for everyday journeys.

## Delivery mechanisms

**5.25** This opportunity could attract funding for delivery, both through the planning system and from other sources. A list of potential funding sources and delivery partners is provided below.

## Planning system

- Developer contributions for infrastructure
- Delivery of net benefits for biodiversity in cases where off-site contributions are regarded as exceptional
- Unilateral undertakings between DCC and developers

## Other Sources

- Sustainable Farming Scheme
- Welsh Government Active Travel Fund (administered by Transport for Wales)
- Welsh Government Nature and Climate Emergencies Capital Programme

## Potential delivery partners

- Natural Resources Wales
- Woodland Trust Wales / Coed Cadw
- SusTrans
- Cadwyn Clwyd Cyfngedig (Green Communities Fund)
- Local landowners
- Community interest groups (angling, kayaking groups)

## Recommended next steps

- Consultation with landowners, local communities and special interest groups.
- Undertake feasibility studies and engage with developers on potential routes.
- Establish biodiversity baseline measurements, and areas of need along route.
- Explore additional funding opportunities.

## **Key Strategic Opportunity 3: Promote opportunities for greening at Prestatyn Shopping Park and along the High Street.**

### Context

**5.26** Prestatyn is one of Denbighshire's highest density urban areas, with around 1,195 people per km<sup>2</sup>. Natural Resource Wales' Accessible Natural Greenspace Standards specify that everyone should live within 300m of their nearest natural greenspace. They state that all natural greenspaces should be

0.25ha or larger and that provision should be made for at least 2ha of natural greenspace per 1000 population. Within established urban areas such as Prestatyn increasing provision, particularly of larger greenspaces, is more difficult. NRW WINS data, identifies areas of central Prestatyn as having the highest demand for accessible greenspace.

**5.27** Prestatyn Shopping Park / High Street is compact and features limited areas of green space. This is largely due to the amount of space preserved for car parking in the Shopping Park and vehicle access along the High Street, which features one-way traffic from Penisardre Road to Gronant Road in the south of the town centre. Notably, there is little pedestrian connectivity between the Shopping Park and High Street, with limited signposting. This has impacted High Street footfall, which hosts smaller and independent retail. Anchored by Marks and Spencer and Tesco, Prestatyn Shopping Park contains almost 200,000 sq ft of retail space, situated close to the town centre. Due to the reliance on the use of the private vehicle in Denbighshire, the Shopping Park attracts high footfall due to its accessibility for cars, featuring a large car park with free parking and ease of access to larger chain retail stores.

**5.28** The main existing greenspace in the town centre is the private park and garden associated with Christ Church which sits adjacent to the high street however, this is limited in size and not accessible to the public.

### Purpose of the opportunity

**5.29** The purpose of this opportunity is to provide additional access to GI in one of the main urban centres of Denbighshire, which demonstrably has limited access and opportunity for GI opportunities and high levels of deprivation.

**5.30** This opportunity aligns with the outlined strategic objectives as it has the potential to integrate nature-based solutions into Prestatyn's public realm, increase the town's canopy coverage, integrate SuDS, support community growth and bolster community-focussed green space within the town centre.



## Description

**5.31** This opportunity would involve incorporating GI into the streetscape, improving access to natural and semi-natural greenspace for residents and visitors of Prestatyn.

**5.32** Many of the retail units in the Shopping Park contain large blank facades that detract from the character of the area. These present opportunities to incorporate carefully planned green walls that would contribute towards visual amenity, improve air quality and reduce the urban heat island effect. Two green walls have already been introduced in the Shopping Park, but these are small in scale and concealed from view. Specific opportunities to integrate new green walls exist on:

- The large west facing wall of the Tesco Superstore.
- Two large brick walls on the west and south facing sides of the Marks and Spencer store. The latter is located on the entrance to the Shopping Park.
- The north facing wall of the Costa Coffee store. This is located at one the primary entrances to the Shopping Park, directly opposite the south facing brick wall of Marks and Spencer.

**5.33** Much of the Shopping Park is dominated by a large car park which serves the retail stores contained in the Shopping Park and many of the smaller retail stores on the High Street. Due to the hardstanding nature of car parks, the space currently offers little to no greenspace, trees or planting other than a small patch of grassland at the south entrance to the park and minimal shrubbery around the south-west and eastern boundaries.

**5.34** There are many opportunities to create a 'green' car park, which would contribute towards improving cooling, reducing the heat island effect, providing additional greenspace and potential habitat creation. Key features to integrate into the existing car park include:

- Increased tree and shrub planting. Planting could be located along the perimeter of the pedestrianised walkways or integrated into the car park bay design.
- Introducing plant columns to existing street lighting across the Shopping Park. The use of columnar planting has been designed as an alternative to tree planting in congested areas.

**5.35** In addition to greening the Shopping Park, there are multiple opportunities along Prestatyn High Street to draw out this effect and reduce the perception of a hardscape dominated urban area. Specifically, this could include:

- Increased planting through the removal of some street parking bays, converting these into small pocket parks with dense, biodiverse planting and seating. This will serve to mitigate pollution caused by congestion along high street, provide shade, and provide some degree of surface flood mitigation.
- Where existing built-out kerbs for transit exist, consider introducing additional street trees and planting elements, which will also serve to act as traffic-calming elements.
- Create better integration between the park and the high street through improved wayfinding, cohesive planting selection and consistent seating and lighting materials.

## Challenges

**5.36** The main challenge to this opportunity would be to engage with the shopping park owners who may be resistant to a loss of car parking spaces. A parking assessment may be required to identify how many spaces could be lost without reducing footfall. Accompanying improvements in active travel or public transport connectivity could mitigate the effects of a reduction in car parking spaces, encouraging higher levels of transport by sustainable means.

**5.37** Most of the interventions suggested as part of this opportunity are relatively low cost. They are unlikely to attract funding from new development in

the area or via grant funding as they would be delivered by private enterprises but could be attached as a condition for any planning applications existing businesses submit. Funding contributions could be sought from businesses which would benefit from the integration of this GI.

### Delivery mechanisms

**5.38** This opportunity could attract funding for delivery, both through the planning system and from other sources. A list of potential funding sources and delivery partners is provided below.

### Planning system

- Unilateral undertakings between DCC and developers
- Developer contributions for infrastructure
- Delivery of net benefits for biodiversity in cases where off-site contributions are regarded as exceptional
- Implementation of SuDS in new developments

### Other Sources

- National tree planting funds, including Tiny Forests in Wales programme
- National Lottery Community Fund
- Cadwyn Clwyd Cyfngedig (Green Communities Fund)
- Welsh Government Active Travel Fund (administered by Transport for Wales)
- Welsh Government Nature and Climate Emergencies Capital Programme
- Transforming Towns programme

## Potential delivery partners

- Local businesses
- Developers
- Sustrans
- Local resident and community groups

## Recommended next steps

- Initiate consultation with local businesses and residents.
- Identify partnerships, agree scope of project and priorities.
- Public consultations, to generate local buy-in and support.
- Explore additional funding opportunities.

**Key Strategic Opportunity 4: Increase the quality and multifunctionality of low-quality amenity greenspace in the residential estate bounded by Marsh Road to the north and Rhydwen Drive to the south.**



**Context**

**5.39** In Denbighshire, the areas identified by WINS data as having the highest demand for urban accessible greenspace closely correlate with areas which experience higher levels of deprivation. Notably, the Welsh Index of Multiple Deprivation statistics based on a range of socio-economic factors indicate that ‘West Rhyl 2’ is the most deprived of the 1,896 Lower Super Output Areas in Wales. Given the health and wellbeing benefits of access to good quality

greenspace there would be significant benefits for local communities if access to good quality greenspace were improved. The residential estate bounded by Marsh Road to the north and Rhydwen Drive to the south is located in 'West Rhyl 2' and as such, has the most limited access to greenspace and is in the greatest need.

**5.40** Whilst the estate has small pockets of amenity grass, these provide little to no recreational purpose or multi-functionality.

### Purpose of the opportunity

**5.41** The purpose of this opportunity is to provide new high quality, multifunctional GI to a residential estate within the most deprived LSOA in Wales.

**5.42** This opportunity aligns with the outlined strategic objectives as it has the potential to improve the quality and resilience of local habitats, integrate nature based solutions into residential areas in west Rhyl, increase canopy coverage in the area, integrate SuDS to better manage surface water flood risk, by intercepting run-off from adjacent streets, support community cohesion, and facilitate greater access to new, high quality greenspace to improve health and wellbeing.

### Description

**5.43** This opportunity would improve access to good quality greenspace and associated habitat and surface water flood management benefits by enhancing the quality and utility of existing areas of amenity grass interspersed within existing residential estates.

**5.44** Existing small green spaces within the estate might be improved (for example Chatsworth Road Play Area) through the incorporation of;

- Lower boundary planting, to create visual and perceptual separation from the roadway without obstructing sight lines (for community safety reasons). These plantings are to be biodiverse, native and can provide textural elements into the space.
- Small natural play structures which serve various youth demographics, from young children through to teenagers.
- Seating options, with the potential for multi-use tables which accommodate both recreational and social uses.
- The integration of raingardens to manage surface water.
- Implementation of community artwork along the existing boundary walls, and an accompanying programme of activity to engage communities with the design, delivery and management of the opportunity.

**5.45** There is also an opportunity to create a stronger link to surrounding natural areas, such as the Glan Morfa Community Woodland. This can be achieved through a stronger street tree presence along Marsh Road, creating a visual link to the woodland area. A cycle lane exists along the pavement on Marsh Road, but could be better defined, with additional wayfinding and street marking. Safe pedestrian crossing points from the estate to the community woodland.

### Challenges

**5.46** All of the interventions should be designed and implemented in collaboration with local communities to ensure that they meet local needs and to secure community ownership and reduce possible instances of anti-social behaviour. A funded maintenance programme would need to be established which could include adoption and management of the spaces by a dedicated community organisation should there be demand and capacity.

## Delivery mechanisms

**5.47** This opportunity could attract funding for delivery, both through the planning system and from other sources. A list of potential funding sources and delivery partners is provided below.

### Planning system

- Developer contributions for infrastructure
- Unilateral undertakings between DCC and developers
- Implementation of SuDS in new developments

### Other sources

- Transforming Towns programme
- National tree planting funds, including Tiny Forests in Wales programme
- Local Places for Nature Capital Fund
- Nature Networks Fund
- Welsh Government Active Travel Fund (administered by Transport for Wales)
- Safe Routes in Communities
- Rural Community Development Fund

### Potential delivery partners

- Local resident and community groups
- SusTrans
- Cadwyn Clwyd Cyfngedig (Green Communities Fund)

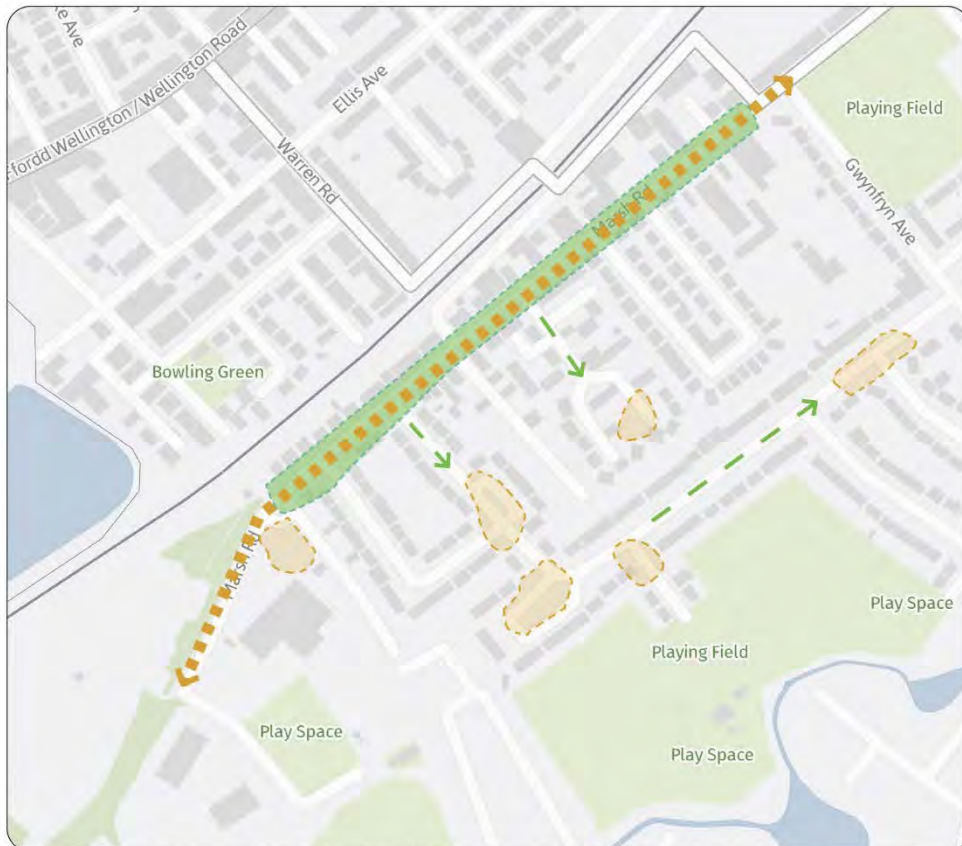


## Recommended next steps

- Identify community groups and local residents to engage in consultation and partnership.
- Public consultations, to generate local buy-in and support.
- Explore additional funding opportunities.

Figure 10: Vignette of Key Opportunity 4

**4** Key Opportunity 4 - Increase the quality and multifunctionality of low-quality amenity greenspace in the residential estate bounded by Marsh Road to the north and Rhydwen Drive to the south.



-  Enhance existing small green spaces within the estate with additional planting, seating and recreational infrastructure and natural play areas.
-  Improve connection to surrounding nature reserves and green spaces, with increased wayfinding, street planting, and cycle infrastructure.
-  Improve streetscape presence, particularly along Marsh Road, with community artworks, new planting, and seating options.

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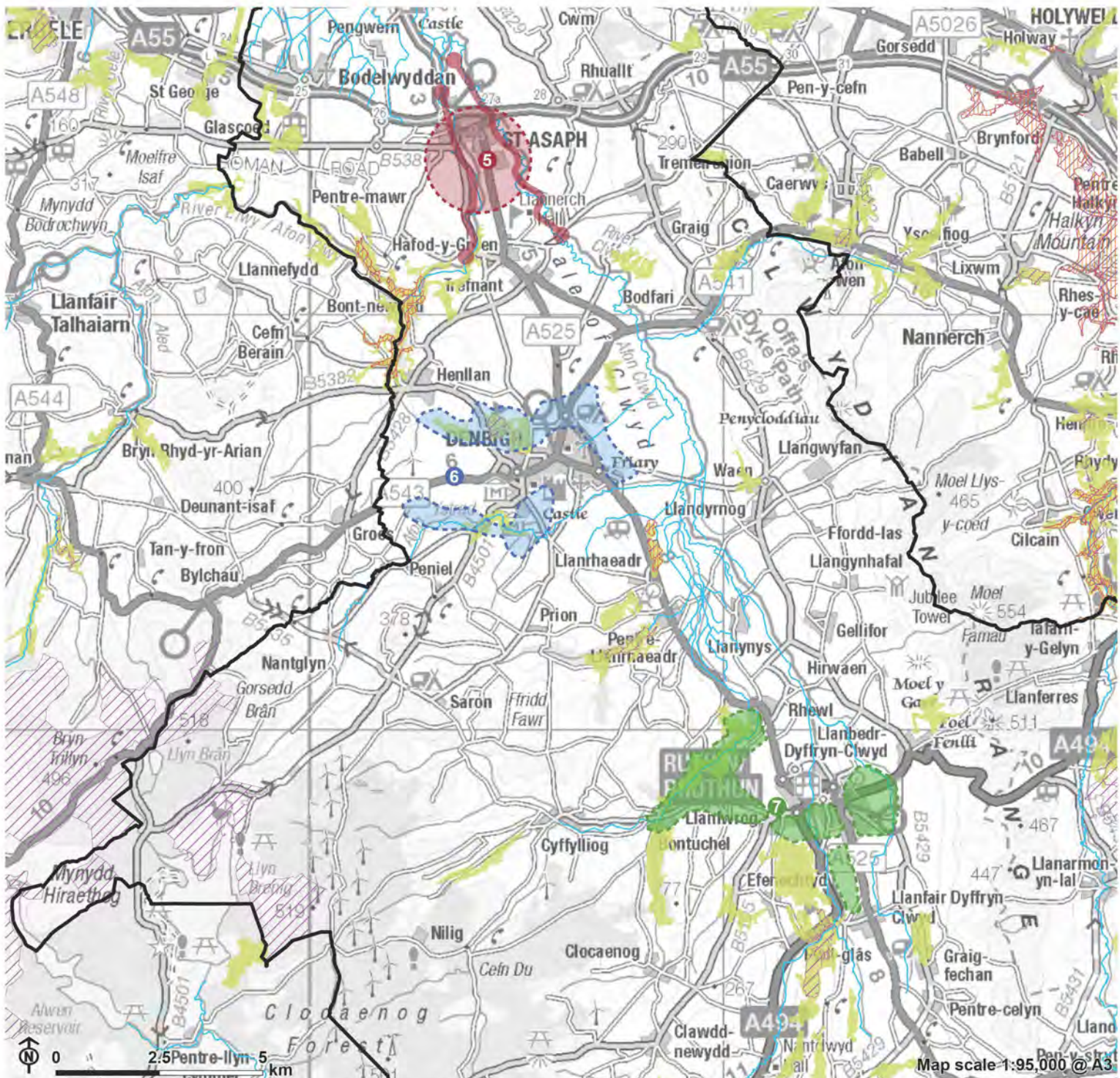


Figure 11: Strategic Opportunities - Central Denbighshire

- Denbighshire county boundary
- Lowland core habitat network - woodland
- Local Nature Reserve
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- Main Rivers

**GI Priority Projects**

- 5** Embrace and enhance the riverine setting of the settlement, between two rivers at St Asaph.
- 6** Increase the extent and connectivity of habitat and greenspace surrounding Denbigh.
- 7** Increase the extent and connectivity of habitat and greenspace surrounding Ruthin.

## Central Denbighshire

### **Key Opportunity 5: Embrace and enhance the riverine setting of the settlement, between the two waterways of St Asaph.**

#### Context

**5.48** The settlement of St Asaph is set just south of the confluence of the River Elwy and the River Clwyd, with the urban envelope generally arranged in parallel with the waterways. There are few east-west connections across the settlement, with a fragmented network of PRow that frequently follow along existing roadways. Additionally, areas of public space or green open spaces are mostly disconnected from one another within the settlement.

**5.49** The proximity to the river also poses a challenge in relation to flood risk. Surface water flooding is a threat along the western half of the settlement, which sits at lower elevation and is mostly classed Flood Zone 3. There are limited areas of natural green space along the western half of the River Clwyd which act as natural buffers during rain events. Land north of the A55 is largely managed farmland, while to the south of the A55 the extensive hardscaping within the settlement limits overall flood storage capacity.

#### Purpose

**5.50** This opportunity seeks to establish a more interconnected series of footpaths through the settlement, across the River Elwy and extending towards the River Clwyd, while incorporating natural flood management strategies including increased flood storage capacity.

## Description

**5.51** One component of this opportunity is the creation or enhancement of footpaths within the settlement. The enhancement of the existing footpath network will enable increased access to nature and active travel options for local residents and visitors. This will encourage increased engagement with the local environment and nature, strengthening appreciation for St Asaph's unique setting and increasing general well-being.

**5.52** Existing footpaths along the River Elwy should be used as the basis for new branches, extending off the blue corridor and into the settlement core. There is an existing footbridge near the St Asaph Library and Cricket Club, which serves as the only non-vehicular route over the River Elwy within the settlement. Consideration should be given to establishing new footpaths or connecting existing paths. Specific opportunities for this could include:

- River Elwy towards St Asaph Cathedral, across Upper Denbigh Road towards the existing footpath at the secondary school.
  - Improved wayfinding, introducing consistent paving or visual cues.
  - Maintained plantings along the route, clearing vegetation where necessary in order to improve visibility and safety.
  - Enhanced crossing at St Asaph Cathedral and Upper Denbigh Road, with raised intersection, signage and planting as traffic calming elements.
  - Repurpose part of the extra-wide paving along Upper Denbigh Road for a defined multi-modal path, which can form an enhanced spine north-south through the centre of the settlement.
- Y Comin open space to Mill Street, towards existing paths at Gernig Street and Cathedral Walk, establishing a new footpath along Bryn Gobaith, past the playground at Holly Court, and connecting into the existing network to the north.
  - Widen existing footpaths where possible, using street markings or paving to highlight shared use and to increase pedestrian safety.

- Crossing over Lower Street established, using signage and traffic calming elements. Consider pavers as unifying element along path.
- A new footbridge over the River Elwy in the southern half of the settlement should be considered, linking residential neighbourhoods along Lower Denbigh Road and Paddock/Bishops Walk.
- Formalised footpaths through the existing green spaces along the River Elwy, strengthening connections from the western half of the settlement into the town core.
- Increased connections to the River Clwyd to the east of the settlement, linking into potential nature spaces along the waterway.

**5.53** The other component of this opportunity ties into the first, incorporating natural flood mitigation measures into these developing blue-green corridors. A recent report suggested that the most beneficial natural flood measures would be undertaken in the upper catchment and any works delivered as part of this opportunity should be undertaken in coordination with work being undertaken by Natural Resources Wales to implement this, as well as the existing project on the River Clwyd undertaken by Cadwyn Clwyd Cyfyngedig. There is potential to enhance these NFM measures in the upper catchments with measures downstream, closer to St Asaph. Restored floodplains, flood basins and buffer planting along the riverways will reduce flood risk by slowing water flows and increasing water storage, while also increasing lowland habitat connectivity. There are also opportunities for integrated recreational elements, which would further increase access to nature for local residents.

- Floodplain restoration along the River Elwy in areas of marginal arable production which experience frequent flooding.
  - Wetland, wet grassland, and riparian woodland areas, established within and near natural meanders of the river
  - Habitat management schemes which encourage natural regeneration of lowland habitat mosaics.
- Widening of riparian vegetation bands where horizontal space constraints or other land uses limit larger interventions.

- Re-naturalised riparian habitats along the River Elwy, particularly as it runs through the core of the settlement.
- Buffer planting along recreational fields and other grassland areas which sit in the floodplain.
- Re-grading certain areas within the Elwy floodplain, incorporating a land sparing strategy with the creation of areas for flood storage.
  - Bunds which increase flood protection while also introducing elevated areas for viewing and play.
  - Carved out areas which are used as sports fields or other recreational use (amphitheatre) when not retaining water.
- Elevated footpaths along the riverway, allowing safe access during times of heavy rains or flood, as well as protecting sensitive ecological sites as new lowland habitats are established.
  - Consider boardwalk paths where possible, in anticipation of more frequent and more severe flood events in the future.

## Challenges

**5.54** The large area of potential locations for this opportunity will require detailed planning and management to deliver, and the construction process may be lengthy due to the geographical spread. A robust consultation process with local landowners and residents will be required, and may encounter extensive pushback from consultees, particularly farmers. Identifying sufficient funding may pose a challenge.

**5.55** Some of the opportunities are high cost options, particularly the new footpaths and footbridge, and detailed feasibility studies and business cases would need to be carried out to establish their viability. The opportunities should be prioritised according to a cost-benefit assessment and the availability of appropriate funding.

## Delivery mechanisms

**5.56** This opportunity could attract funding for delivery, both through the planning system and from other sources. A list of potential funding sources and delivery partners is provided below.

### Planning system

- Developer contributions for infrastructure
- Delivery of net benefits for biodiversity in cases where off-site contributions are regarded as exceptional
- Unilateral undertakings between DCC and developers

### Other Sources

- Sustainable Farming Scheme
- Heritage Fund
- Nature Networks Fund
- Welsh Government Active Travel Fund (administered by Transport for Wales)
- Welsh Government Nature and Climate Emergencies Capital Programme
- Safe Routes in Communities

### Potential delivery partners

- Natural Resources Wales
- Woodland Trust Wales / Coed Cadw
- Cadwyn Clwyd Cyfngedig (Green Communities Fund)
- Local landowners

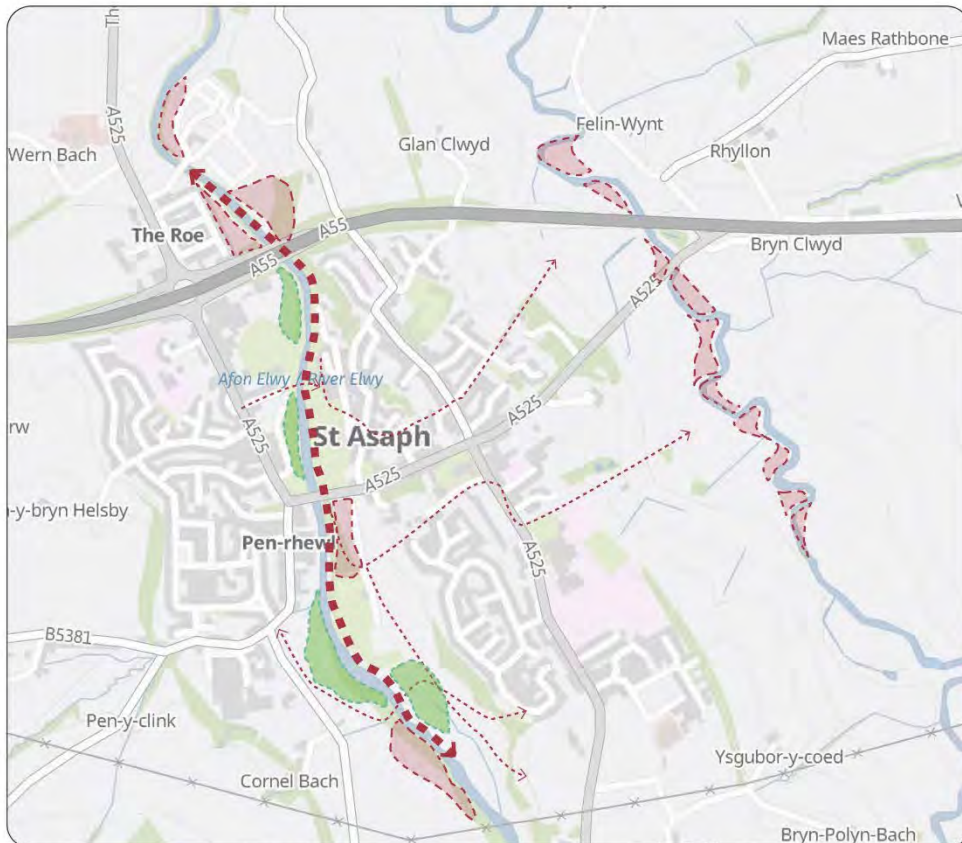


## Recommended next steps




- Initiate consultation with local landowners, local communities and special interest groups.
- Identify where footpaths are most needed, and seek unused green space already embedded in proximity to settlement.
- Collaborate with farmers and landowners to identify areas along the River Elwy and River Conwy for floodplain restoration and riparian planting.
- Explore additional funding opportunities.

Figure 12: Vignette of Key Opportunity 5

**5** Key Opportunity 5 - Embrace and enhance the riverine setting of the settlement, between the two waterways of St Asaph.



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-  Establish new footpaths or connect existing footpaths, using the River Elwy as the base for new branches and to extend the routes further into the settlement core.
-  Floodplain restoration along the River Elwy and River Clwyd, with widened habitat buffers and riparian plantings where appropriate.
-  Multifunctional flood storage areas along the River Elwy, with embedded recreational elements such as bunds or elevated footpaths.

## **Key Opportunity 6: Increase the extents and connectivity of habitat and greenspace surrounding Denbigh**

### Context

**5.57** Denbigh lies on the boundary between the fertile agricultural landscape of the Vale of Clwyd to the east and the more pastoral landscape of the Denbigh Moors / Mynydd Hiraethog to the west. The older part of the town is arranged to the north of a rocky outcrop on which sits the remains of Denbigh Castle with newer development having extended onto the plain to the east. Being situated within a largely agricultural landscape there are few areas of semi-natural habitats other than areas of woodland on the southern slope of the rocky outcrop and the extensive area of mixed deciduous woodland of Crest Mawr to the north, which is a Site of Special Scientific Interest.

**5.58** Remaining areas of semi-natural habitat currently exist at the peripheries of the settlement but lack connectivity. The lack of semi-natural habitats, especially woodland, means that the few remaining areas are ecologically disconnected from larger areas of woodland such as those that occur along the River Ystrad to the south of Denbigh and the hills and valleys of the Denbigh Moors/Mynydd Hiraethog to the north-west. The land around Denbigh, especially to the north and south has been identified by Natural Resources Wales as a priority area for woodland creation as part of the lowland focal habitat network.

### Purpose

**5.59** This opportunity seeks to increase the extent and connectivity of semi-natural habitat, particularly woodland, with a particular focus on areas in the north, west and south of the older part of the town both to increase the ability of

wildlife to traverse the wider landscape and to extend people's contact with nature within the town itself.

### Description

**5.60** Existing woodlands provide the basis for identifying opportunities for extending and connecting woodland and other semi-natural habitat. These include Crest Mawr, the wooded slope to the south of Denbigh Castle, and fragmented blocks of woodland to the south of the A543 to the south-west of Denbigh. Specific opportunities could include:

- Woodland to the south of Denbigh Castle.
  - Establish an ecological connection, preferably wooded, between the western end of the woodland and the parkland landscape surrounding the former North Wales Hospital to the south and the wooded valley of the river Ystrad beyond.
  - Plant additional trees and shrubs along the boundaries and in unused corners of Middle Parc to improve east-west ecological connectivity between Denbigh Castle woodland, the parkland trees of Myddelton College, Denbigh Cemetery and the corridor of the River Ystrad to the south-east.
- Crest Mawr Wood
  - Ensure that the eventual restoration of Denbigh Quarry includes the creation and enhancement of appropriate habitats that will extend and or complement the existing woodland.

Extend the ecological reach of Crest Mawr and the habitats in and around the Denbigh Quarry by creating ecological corridors (through tree and hedge planting, for example) along the public rights of way between the urban edge and Crest Mawr wood and Denbigh Quarry and/or by establishing a mix of woodland and grassland habitats along the southern boundary of the quarry

- Enhance ecological connectivity between the western edge of Crest Mawr and the woodland to the south of Denbigh golf course by

widening and improving hedgerows (by allowing new hedgerow trees to become established) along the B5382 and across the farmland between the two blocks of woodland.

- Fragmented woodlands south of the A543
  - Widen and improve the existing hedgerows connecting the woodland blocks south of the A543 and east of the entrance and driveway of the Gwaenynog estate.
  - Expand the existing community woodland of Mount Wood (Pencoed) to ensure the existing woodland is not degraded by increased recreational pressure in the future.

**5.61** The other component of this opportunity ties into the first by increasing the ecological reach of the remaining blocks of woodland into parts of the urban envelope of Denbigh. Green spaces within the town that provide opportunities for habitat creation or improving ecological connectivity include Cae Hywel, Middle Parc, and the green spaces throughout the residential areas bounded by the A543 and the A525. Specific opportunities include:

- Cae Hywel
  - Boundary planting of trees and shrubs to create areas of wildlife habitat, but also to establish areas of shade and shelter on this large expanse of recreational land.
- Middle Parc
  - See second bullet point in previous section relating to the woodland south of Denbigh Castle.
- Green spaces in east Denbigh
  - Create an ecological connection through tree and shrub planting along the eastern boundary of the playing fields of Twm o'r Nant primary school to create a north-south branch of the green corridor which runs along the stream between Denbigh Friary and the A525.
  - Introduce additional tree planting in amenity green spaces including those that are:

- west of Lon Y Gelli;
- between the A543 and Ffordd Celyn;
- between the A525 and Ffordd Celyn;
- on the junction of Lon Y Fedr Arian and Ffordd Colomendy;
- between Parc Clwyd and Lon Derwen; and
- the roundabout at the junction between the A525 and A543.

### Challenges

**5.62** Most of the potential for creating meaningful ecological connections will require either co-operation with local farmers and landowners to create wider and more continuous ecological corridors along existing hedgerows for example (and incentives to encourage this) or through ensuring that any new development in close proximity to the sites described above deliver significant and well-managed landscaped buffers and corridors.

**5.63** Of particular note with respect to delivering habitat enhancement through development is the extension and/or restoration of Denbigh Quarry and the bringing forward of potential nearby development sites. If master planned these could establish a sizeable area of connected habitats to the north of the town.

### Delivery mechanisms

**5.64** This opportunity could attract funding for delivery, both through the planning system and from other sources. A list of potential funding sources and delivery partners is provided below.

### Planning system

- Developer contributions for infrastructure

- Delivery of net benefits for biodiversity in cases where off-site contributions are regarded as exceptional
- Unilateral undertakings between DCC and developers

### Other Sources

- Sustainable Farming Scheme
- Heritage Fund
- Nature Networks Fund
- Developer contributions, including Denbigh Quarry
- Welsh Government Nature and Climate Emergencies Capital Programme

### Potential delivery partners

- Natural Resources Wales
- North Wales Wildlife Trust
- Woodland Trust Wales / Coed Cadw
- Cadwyn Clwyd Cyfngedig (Green Communities Fund)
- Llais y Goedwig
- Local landowners

### Recommended next steps

- Engagement with local landowners to explore opportunities for strengthening ecological connectivity through improved hedgerow management and tree and hedge planting alongside public rights of way which run between remaining fragments of semi-natural habitat.
- Confirm sites for allocation in the new Local Plan and develop indicative landscape frameworks to ensure design of any development optimises potential ecological connections.

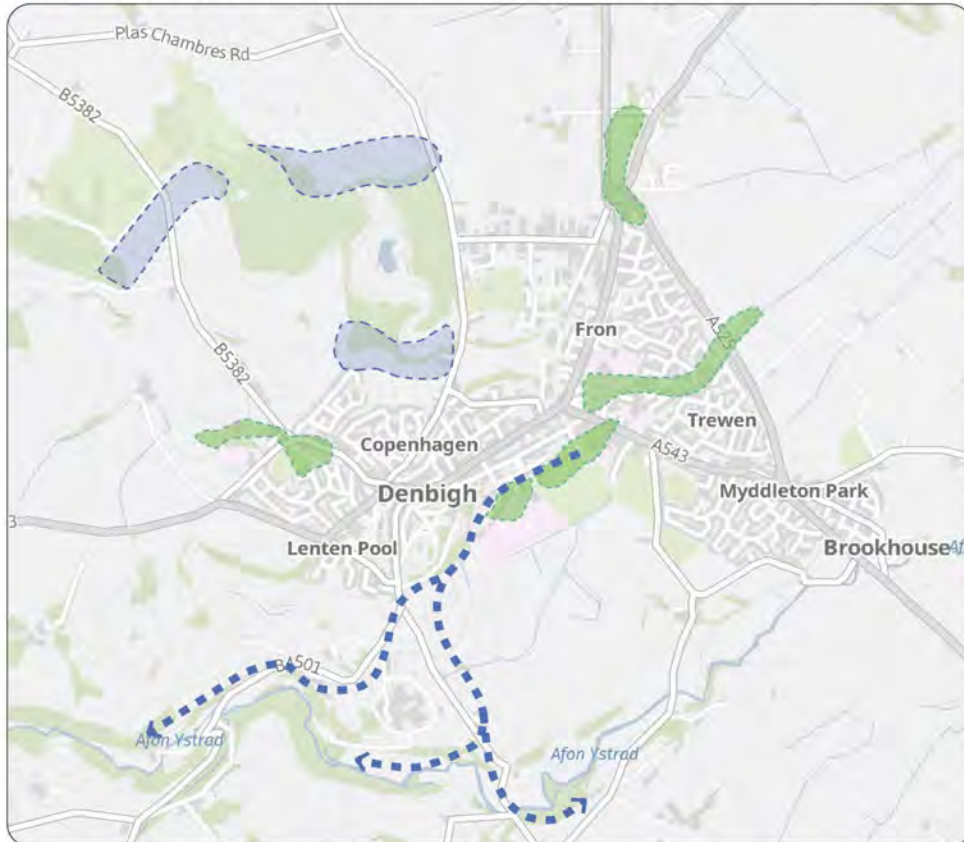
## Chapter 5 GI Opportunities

- Identify a funding stream for tree and shrub planting in green spaces to increase access to nature, especially for residents in east Denbigh and around Cae Hywel.



Figure 13: Vignette Key Opportunity 6

**6** Key Opportunity 6 - Increase the extent and connectivity of habitat and greenspace surrounding Denbigh.



Enhanced woodlands south of Denbigh Castle, with new plantings and connectivity from the western end of the woodland to the south and River Ystrad beyond.

Improved conditions surrounding Crest Mawr Wood, with restoration of Denbigh Quarry, enhanced connectivity of the woodlands, and enhanced hedgerows boundaries where appropriate.

Extending ecological reach of fragmented woodlands into the urban envelope of Denbigh, and enhancing conditions of existing greenspaces within the settlement.

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## **Key Opportunity 7: Increase the extent and connectivity of habitat and greenspace surrounding Ruthin.**

### Context

**5.65** Ruthin lies entirely within the largely agricultural landscape of the Vale of Clwyd with the hills and valleys of the Denbigh Moors/Mynydd Hiraethog to the west and the heather-clad hills of the Clwydian Range to the east. The medieval part of the town is situated on a small hill. Much of the more recent residential development lies on former farmland to the east with more commercial development to the north-west. Being situated within a largely agricultural landscape there are few areas of semi-natural habitat within and around the periphery of the town, apart from the River Clwyd and two small blocks of ancient woodland which lie within the larger parkland landscape to the south of Ruthin castle.

**5.66** The limited extent of semi-natural habitat within Ruthin means that there is a lack of ecological connectivity with the more extensive areas of woodland to the west of the town such as those which occur in farmland to the west of the A525 to the north of Ruthin, along the River Clywedog between Rhewl and Bontuchel and the partially forested area of former ancient woodland to the west of the A494 to the south-west of Ruthin. These areas have been identified by Natural Resources Wales as a priority area for woodland creation as part of the lowland focal habitat network.

### Purpose

**5.67** This opportunity seeks to increase the extent and connectivity of semi-natural habitat, particularly woodland, with a particular focus on areas to the west and south of the town both to increase the ability of wildlife to traverse the wider landscape and to extend people's contact with nature.

## Description

**5.68** The parkland to the south of Ruthin Castle, with its two small blocks of ancient woodland and landscape with many very old or veteran trees, is an important ecological asset within the town. However, it needs to be ecologically connected to other areas of semi-natural woodland (especially woodland) and could extend its ecological reach through complementary tree and woodland planting throughout Ruthin. Specific opportunities include:

- Expanding the ecological reach of Ruthin Castle parkland
  - Plant suitable trees along the wide verge along Lôn Fawr adjacent to the football pitches and along the western boundary of the sports pitches with connecting hedgerows along the northern and southern boundaries.
  - Encourage and support the ecological restoration of the land between the west bank of the River Clwyd and Lôn Fawr to establish floodplain and parkland habitat and ensure the longevity of old and veteran trees.
  - Plant a connecting hedgerow with trees along the southern boundary of Ruthin Rugby Club grounds.
  - Plant a connecting hedgerow with trees along the footpath between Corwen Road and Wrexham Road.
  - Explore opportunities for restoration of parts of the former parkland landscape between Corwen Road and Wrexham Road.
- Woodland connections to the River Clwydog
  - Enhance ecological connectivity between the western edge of Ruthin and the wooded corridor of the river by widening and improving hedgerows (by allowing new hedgerow trees to become established) across the farmland to the west of the A525, especially along the footpath from Llanfwrog to Pen Y Bryn.
  - Explore opportunities for substantial new woodland planting on land to the north of Mwrog Street and west of Maes Hafod to establish a community woodland to link the woodland to the west of Ruthin to the residential parts of the town.

**5.69** The other component of this opportunity is linked with the first in that it identifies areas in the eastern part of Ruthin where there are opportunities for tree and woodland planting to complement the larger scale projects identified above, and to provide smaller scale ecological enhancements that increase people's access to nature. Specific opportunities include:

- Amenity greens in residential areas east of the A525
  - Plant specimen large-canopied native trees in suitable locations in the following amenity green spaces:
    - the junction of Rhos Street and Stryd y Brython;
    - bounded by Stryd y Brython and Ffordd Edern;
    - adjacent to Cae Castan;
    - adjacent to Bryn Rhydd and
    - at Bro Deg.
- Around school playing fields and sports grounds
  - Along the boundaries of Ysgol Brynhyfryd, especially along the western boundary and footpath from Ffordd Llanrhydd.
  - Around the boundaries and in the northern part of the sports field east of Wern Uchaf
- A landscape buffer around the employment land
  - Establish a substantial wooded boundary along the northern and eastern edges of the land allocated for employment uses to the north of the town, especially as a when the allocated land is built out to the west and south-east of the existing sewage treatment works.

## Challenges

**5.70** Most of the potential for creating meaningful ecological connections will require either co-operation with local farmers and landowners to create wider and more continuous ecological corridors along existing hedgerows and

incentives to encourage this; or through allowing development at future development sites which ensures the delivery of significant and well-managed landscaped buffers and corridors.

**5.71** The area with the most potential for significant ecological enhancement is the land within and adjacent to the former parkland associated with Ruthin Castle. This is an area that is broadly bounded by Cerigg Street to the west, Wrexham Road to the east, and to the south-east of the junction between Ffordd Corwen and Lon Speiriol-Isaf.

### Delivery mechanisms

**5.72** This opportunity could attract funding for delivery, both through the planning system and from other sources. A list of potential funding sources and delivery partners is provided below.

### Planning system

- Developer contributions for infrastructure
- Delivery of net benefits for biodiversity in cases where off-site contributions are regarded as exceptional
- Unilateral undertakings between DCC and developers

### Other Sources

- Developer contributions
- Sustainable Farming Scheme
- Heritage Fund
- Nature Networks Fund
- Welsh Government Nature and Climate Emergencies Capital Programme

## Potential delivery partners

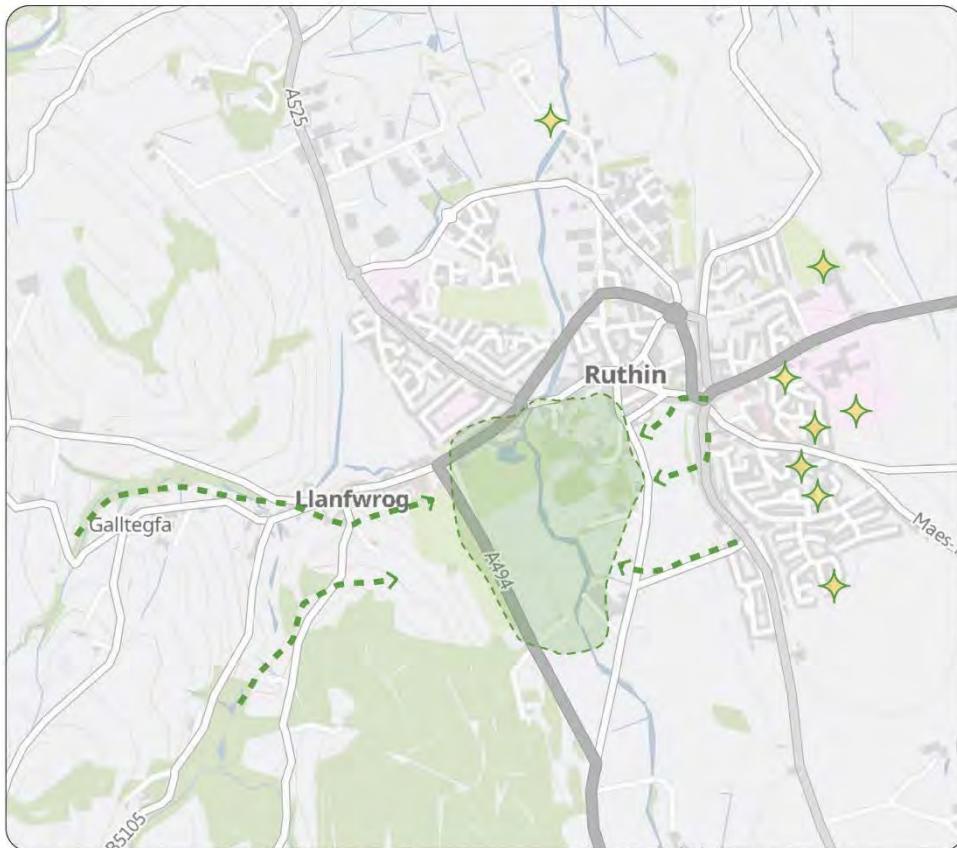
- Natural Resources Wales
- North Wales Wildlife Trust
- Woodland Trust Wales / Coed Cadw
- Cadwyn Clwyd Cyfngedig (Green Communities Fund)
- Llais y Goedwig
- Local landowners

## Recommended next steps




- Engagement with local landowners to explore opportunities for strengthening ecological connectivity through improved hedgerow management and tree and hedge planting alongside public rights of way which run between remaining fragments of woodland.
- Confirm sites for allocation in the new Local Plan and develop indicative landscape frameworks to ensure the design of any development optimises potential ecological connections.
- Identify a funding stream for tree and shrub planting in green spaces.

Figure 14: Vignette of Key Opportunity 7

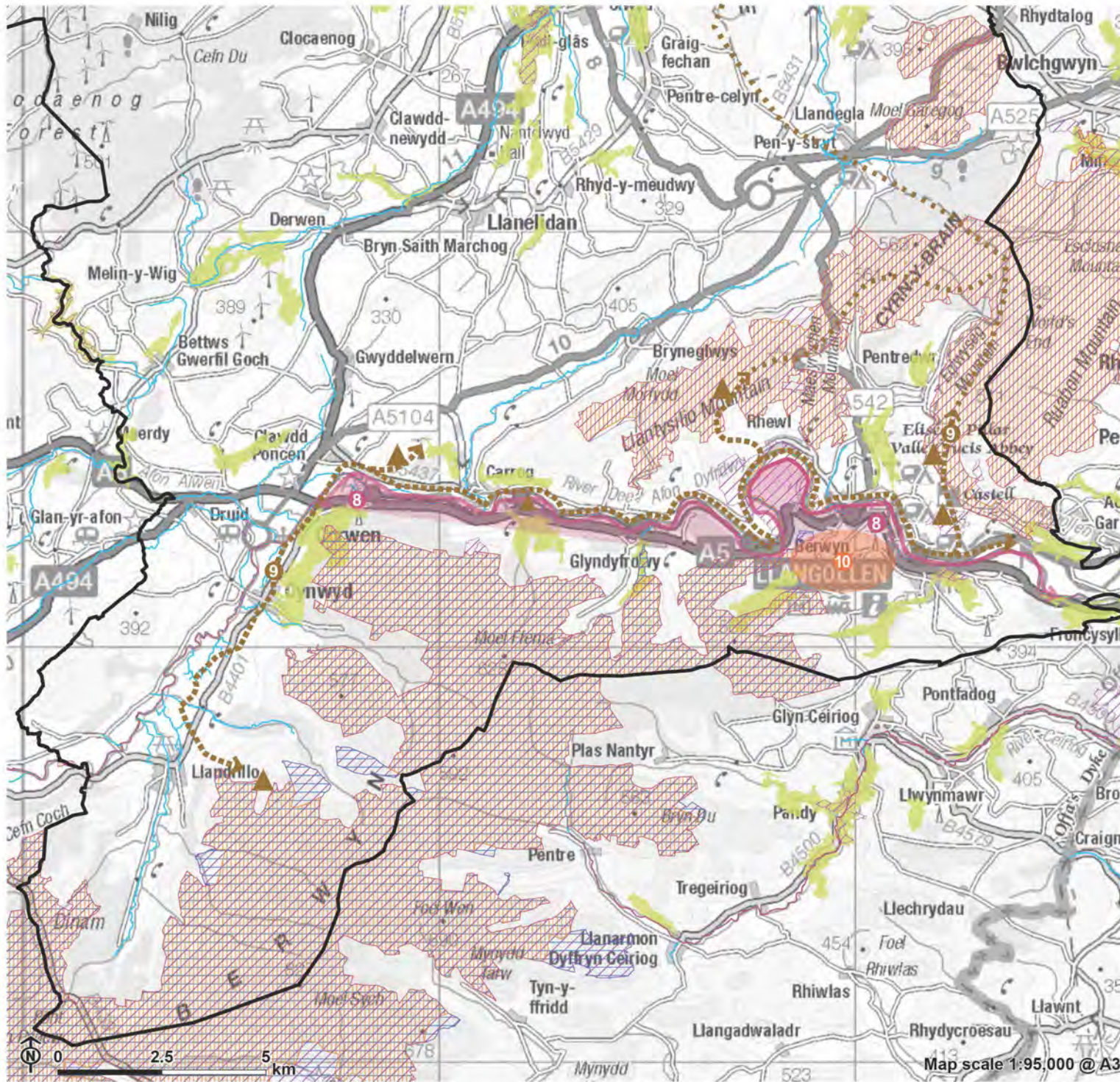
**7** Key Opportunity 7 - Increase the extent and connectivity of habitat and greenspace surrounding Ruthin.



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-  Enhanced woodlands south of Ruthin Castle, creating ecological connectivity with other areas of semi-natural woodland, lowland habitat along the river, and parkland.
-  Create woodland connections to the River Clwydog, between the western edge of Ruthin, and across the farmland along the A525.
-  Identify areas within eastern Ruthin to provide smaller scale ecological enhancements, such as within the residential areas east of the A525, around sports grounds, and along potential development sites or employment land.

**Figure 15: Strategic Opportunities - South Denbighshire**



- Denbighshire county boundary
- Lowland core habitat network - woodland
- Local Nature Reserve
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- Main Rivers

**GI Priority Projects**

- Refresh riverside public spaces along the Dee Valley.
- Strategic.* Promote and maintain a Heritage Trail / Network from valley settlements to historic uplands.
- Provide multifunctional community spaces and accessible travel routes to accommodate both visitors and locals in Llangollen.



## South Denbighshire

### **Key Opportunity 8: Refresh riverside spaces along the Dee Valley.**

#### Context

**5.73** The Dee Valley forms a dramatic setting for the small settlements along its length, each settlement maintaining visual and physical connections to the river. Existing open spaces along the river are limited and generally consist of informal spaces with few seating options. The natural geology along the River Dee provides informal seating and access to the river in places, particularly at the river rocks in Llangollen. Elsewhere along the river access is more limited, particularly as the floodplain widens past Corwen. Between Llangollen and Corwen a limited number of wildlife sites are found.

**5.74** Although existing footpaths in Llangollen allow access to the river, beyond the community of Berwyn there are limited connections which could be considered riverside. The Dee Way, a long distance footpath, heads north into the uplands between Berwyn and Carrog, departing from the river valley until reaching Corwen.

#### Purpose

**5.75** This opportunity seeks to improve access to the river and create new gathering spaces and seating along the riverfront. This would enhance the setting of these settlements, by creating new ways to engage with the local surrounds. It would also improve overall well-being of local communities by encouraging time spent in nature, and by increasing opportunities for community interaction and activity.

## Description

**5.76** This opportunity involves the creation of new community gathering spaces along the River Dee, delivering these spaces in proximity to the riverside settlements. Spaces should be multi-functional and able to accommodate user groups of varying sizes and demographics and should enhance access between the settlements and their river setting. In addition to this, new and improved footpath infrastructure along the riverway should be introduced to connect existing footpaths and improving overall access. Potential components include:

- Consider introducing a larger gathering space along the northern bank of the River Dee, with access to the Llangollen Pavilion. This would accommodate locals on the northern side of the river, as well as visitors during festivals or the tourist season.
  - Elements can include seating of multiple heights which mimic the natural geology, integrated lighting, ramps for access, and railings.
  - Enhanced crossings over the roadway and flush crossings of the railway, with appropriate safety measures.
- Consider overlooks in segments along the river, with integrated seating and railings, allowing small gatherings and resting spots as off-branches of the existing route network.
- Consider formalised interventions at Horseshoe Falls, to accommodate groups and walkers that frequent the area. Reinforce desire lines that have already formed with seating options and stairs/paving, and to discourage new ones from forming.
  - As part of this intervention, consider habitat enhancements along the river's edge, in order to buffer the waterway and slow erosion. Integrate educational panels or signage, to discourage actions which may be harmful to the natural environment.
- Seek to connect fragmented sections along the river between St Tysillo's Church and Coed Rhysgog, and on to Rhewl and Glyndyfrdwy.

- Consider pedestrian bridges to create these new connections, integrating seating and wildlife and dark skies 'friendly' lighting.
- Public space and walkways within a widened riparian buffer zone near Corwen, to accommodate the wide floodplain while allowing increased access to the river.
- Integrate wildlife friendly lighting and other safety measures along the river where necessary.

**5.77** The dramatic natural setting of the river should be enhanced, developing improved seating options which mimic the existing geology of the place. Where embankments allow, consider integrating seating directly, stepping down towards the water, as illustrated in the example below **[See reference 102]**. Additionally, opportunities to increase engagement with the river should be explored, either with ramps or added outlooks. Elements which could be considered include;

- Enhanced access and seating near the Llangollen Bridge and near Riverside Park, using the natural geology of the river along this stretch as inspiration and foundation.
- Designated public canoe launch, allowing recreational access along the river where possible and safe (and in coordination with existing canoe clubs).



## Challenges

**5.78** The development of riverside spaces should be carefully considered, both for public safety reasons and for conservation and protection of the existing riverine habitats. Creation of new gathering spaces may pose issues relating to ASB or litter. It will therefore be important to develop appropriate clean up measures, to ensure litter and other maintenance is implemented during busier months. Working with local landowners to agree easement along the river's edge may present some challenges.

## Delivery

**5.79** This opportunity could attract funding for delivery, both through the planning system and from other sources. A list of potential funding sources and delivery partners is provided below.

## Planning system

- Developer contributions for infrastructure
- Delivery of net benefits for biodiversity in cases where off-site contributions are regarded as exceptional
- Unilateral undertakings between DCC and developers

## Other Sources

- Developer contributions
- Sustrans
- Nature Network Funds
- Welsh Government Active Travel Fund (administered by Transport for Wales)
- Rural Community Development Fund
- Enabling Natural Resources and Well-being Scheme

## Potential delivery partners

- Natural Resources Wales (LIFE Dee River Project)
- North Wales Wildlife Trust
- Local councils and parishes

## Recommended next steps

- Monitor current disturbance, trampling, litter to identify future targets for investment.
- Engagement with local communities and landowners, to determine buy-in and generate support.

- Identifying project boundaries and mapping potential route linkages in consultation with local groups and councils.

## **Key Opportunity 9: Promote and maintain a Heritage Trail Network from valley settlements to historic uplands.**

### Context

**5.80** The Dee Valley and surrounding uplands contain numerous historic and culturally important features. These include Iron Age hillforts along the heather moorland ridges, historic industrial features such as the Llangollen Canal, and the characteristic geologic features which define the Clwydian Range and valley.

**5.81** The multiple settlements along the Dee Valley provide ‘setting-off’ points for exploring the uplands, and also form part of the setting for the historic features. However, many paths from the valley settlements to these features are currently fragmented or not well-defined. For instance, footpaths up to Castell Dinas Bran are not well marked if walking from Llangollen, and there are opportunities to further clarify the appropriate route. Additionally, there are currently pressures on the existing historic and cultural features which threaten their integrity and thus the ability for future generations to develop their understanding of the historic landscape and its evolution over time.

**5.82** A past completed project, ‘Heather and Hillforts’, provides an extensive and rich background to the geology and key archaeological features across the Clwydian Range and Dee Valley. When developing this opportunity, past work should be referenced to efficiently identify key features, and incorporate educational elements based on existing documentation. It is understood that there are likely numerous archaeological sites across this landscape undergoing continuous discovery, offering future opportunities to generate

support and interest for the continued protection of these features, and to add to the existing body of work.

### Purpose

**5.83** This opportunity seeks to enhance connections to the surrounding landscape, allowing improved access to historic features while also protecting the integrity of said features. Providing enhanced infrastructure will encourage both locals and visitors to engage with their environment, encourage active travel, and will further strengthen their understanding of the surrounding landscape and sense of place.

### Description

**5.84** One major component of this opportunity involves the enhancement of footpaths – beginning within the settlements, stretching up the valley sides and across the moorlands. Interventions could include:

- Wayfinding measures, including informational panels within each of the settlements at the beginning of a route, identifying key features and important information for visitors and locals.
  - Consider integrating QR codes in the panels, linking to online information or downloadable route maps, able to be updated as necessary.
  - Clear and regular signposts along the routes will encourage visitors to keep to the paths and minimise confusion in stretches where paths go over natural materials that do not allow for ‘marking’ or clearing.
- Improved path conditions, which could include a cohesive material palette, plant maintenance particularly at path entrances and crossings, and border edging or reinforcement within heavily vegetated areas to highlight the correct route. Fragile geologic, ecological, or historical features may be trampled or otherwise damaged if appropriate use is not encouraged.

- Keeping visitors on the path network will serve to minimise informal path-making, thus reducing disturbance to habitats which exist along the path network.
- Tying into existing path networks, including the Llangollen History Trail and Dee Way.

**5.85** Protective measures to conserve the integrity of historic features are also a key component of this opportunity. Reinforcing fragile sections of track and providing viewing areas where appropriate will assist with maintaining historic features for future generations.

**5.86** Educational signs or interpretation panels along the routes are also important, serving as tools for visitors and locals to better understand the history and background of certain features. These should be placed in proximity to key features. Specific opportunities include:

- Clear or transparent panels, displaying what a feature would have looked like in its original state, allowing visitors to envision it within the existing setting.
- Consider integrating QR codes in the panels, linking to a phone-based augmented reality experience, or online information and downloadable route maps, able to be updated as necessary.
- Species identification and facts, along with information on which species would have been present and are no longer in existence, furthering understanding of the landscape's evolution over time.

## Challenges

**5.87** Achieving consensus with archaeologists and local councils over which features are to be prioritised. Working with local landowners to determine access routes and implement path works where they cross private land. Finding sufficient funding for larger pieces of work such as viewing platforms or reinforcing longer stretches of path.



## Delivery mechanisms

**5.88** This opportunity could attract funding for delivery, both through the planning system and from other sources. A list of potential funding sources and delivery partners is provided below.

### Planning system

- Developer contributions for infrastructure
- Delivery of net benefits for biodiversity in cases where off-site contributions are regarded as exceptional
- Unilateral undertakings between DCC and developers

### Other Sources

- Nature Networks Fund
- Heritage Fund
- Sustrans
- Welsh Government Nature and Climate Emergencies Capital Programme
- Welsh Government Active Travel Fund (administered by Transport for Wales)
- Wales Cultural Recovery and Reconstruction Fund
- Enabling Natural Resources and Well-being Scheme
- Rural Community Development Fund

### Potential delivery partners

- Cadw
- North Wales Wildlife Trust

- Cadwyn Clwyd Cyfngedig (Green Communities Fund)
- Local landowners

## Recommended next steps

- Initial consultation with archaeological and heritage groups, to identify partnerships, project scope and priorities.
- Public consultation with local communities and landowners, to generate local support and feedback.
- Feasibility study, identifying project boundaries and mapping of potential route linkages.
- Explore additional funding opportunities.

## **Key Opportunity 10: Provide multifunctional community spaces and accessible travel routes to accommodate both visitors and locals in Llangollen.**

### Context

**5.89** The town of Llangollen is a historic settlement within the Clwydian Range and Dee Valley AONB and is popular with visitors. Multiple festivals are hosted within the town, including the renowned International Musical Eisteddfod, which is a major draw. The Llangollen Pavilion hosts the festival and is located in a key position between the River Dee and Shopshire Union Canal (Llangollen Branch), with a large open field attached. The dramatic setting of the town and historic features both within the town and in the surrounding landscape have made it one of the most visited settlements within the County. The riverside setting also exposes the community to a degree of fluvial and surface flood risk,

particularly the areas which buffer the river either side and roadways which extend south from the watercourse.

**5.90** Llangollen is also one of the larger population centres in the south of the County, with a slightly older than average age group when compared to other settlements within the County. The proportion of people aged over 65 and 85 in the community is expected to increase over the next decades, with growing demand for local services and businesses. Although there are defined public spaces associated with the railway, river and other tourist attractions, smaller green spaces throughout the community are more limited, with a dense urban core and residential nodes south of the A5/Regent Street.

### Purpose

**5.91** This opportunity seeks to provide an engaging and accessible environment for both visitors and locals within Llangollen, accommodating different needs through appropriate infrastructure and public space provision. Increasing public green spaces, smaller scale gathering spaces, and introducing accessibility and safety materials will serve to improve overall community engagement across demographics. Integrating new green space, trees, and SuDS into these interventions should also help to reduce surface flood risk and improve air quality, urban cooling, and overall well-being.

### Description

**5.92** Improved connectivity along the busy riverfront through Llangollen could be improved, with more supportive infrastructure and visual cues to draw people along the main tourist areas. Specific opportunities include:

- Additional seating and wayfinding along the route from the railway station, across the bridge and along Castle Street, using appropriate accessible design and cohesive materials. Street crossings should be reinforced with enhanced signage or traffic calming measures.

- Improved and defined access to the Llangollen Pavilion, with routes from the railway station, and two flanking waterways. Consider additional uses for the festival grounds, and multifunctional design improvements.
- Signage or informational panels located at the railway station or larger parking areas, illustrating where specific local business of interest, public parks or event spaces are located within the urban core. This is also an opportunity to allow local businesses to post events or adverts of interest to both visitors and locals. Consider integrating QR codes linking to further information and maps, able to be easily modified in the future.
- Improved streetscape presence (improved and consistent materials, lighting, landscaping, shop fronts) along Parade Street, Market Street and Bridge Street, drawing visitors through to smaller shops, galleries or public spaces not located on the central spine.
  - Improved store frontages, and appropriate street lighting throughout.
  - Pocket parks with benches and tables, and trees where possible (see further details on potential locations below).
- Consistent planting plan throughout, with new street trees, integrated seating opportunities and planters, and coherent paving materials will contribute to an improved definition of the public zone, as well as a more walkable and cohesive town centre.

**5.93** A key component is the integration of smaller scale gathering spaces throughout the community, embedded into both more residential areas and dense urban settings. This is also an opportunity to introduce safety measures and visual cues to better connect residential areas further south into the urban core.

- Smaller gathering spaces within dense urban areas which are in-use year round. Potential locations include:
  - Conversion of some small parking bays to pocket parks along Market Street, in proximity to the central market, food festival space, and local shops. Tables and chairs, biodiverse planting, SuDS, should be integrated.

- Integration of planting and seating within larger parking areas (Market St Car Park and East St), to accommodate alternate uses when not being used for parking in the off-season.
- Improvements to existing green spaces or creation of new ones within residential nodes further south, as well as improved streetscape and clear crossings where possible. Potential locations include:
  - Junction of Pengwern and Brook Street – additional planting, new seating options, play structures, SuDS.
  - Erw-Deg and Pengwern – new raised crossings between the small areas of green space across Penwern, new plantings, and improved waiting areas for public transport.
  - Improved crossing at junction of Bridge Street and Regent Street, removing parking options along this stretch and improving visibility of the existing crossing.

**5.94** The integration of additional green spaces within the urban core of the settlement allows opportunities for increased planting and SuDS. Where existing plant beds or tree plantings exist, consider introducing expanded areas for rain gardens or strategically removing areas of hardscape. The following features may be included:

- Hardscape and paving removed in priority locations and raingardens introduced where surface flooding has been experienced:
  - Along wider paved areas on Castle Street, with potential for larger reservoirs undergrounded with street trees above.
  - Consider removing occasional parking bays along Chapel Street to introduce larger raingardens, with the added benefit of new pocket parks and traffic calming elements.
  - Where built-out kerbs exist, consider using part of these for wildflower verges or raingardens, creating new biodiversity-rich pockets within the urban centre.

## Delivery mechanisms

**5.95** This opportunity could attract funding for delivery, both through the planning system and from other sources. A list of potential funding sources and delivery partners is provided below.

### Planning system

- Developer contributions for infrastructure
- Delivery of net benefits for biodiversity in cases where off-site contributions are regarded as exceptional
- Unilateral undertakings between DCC and developers
- Implementation of SuDS in new developments

### Other Sources

- SusTrans
- National Lottery Community Fund
- Nature Networks Fund
- Cadwyn Clwyd Cyfngedig (Green Communities Fund)
- Safe Routes in Communities
- Rural Community Development Fund
- Enabling Natural Resources and Well-being Scheme

### Potential delivery partners

- Llangollen Town Council
- Cadwyn Clwyd Cyfngedig

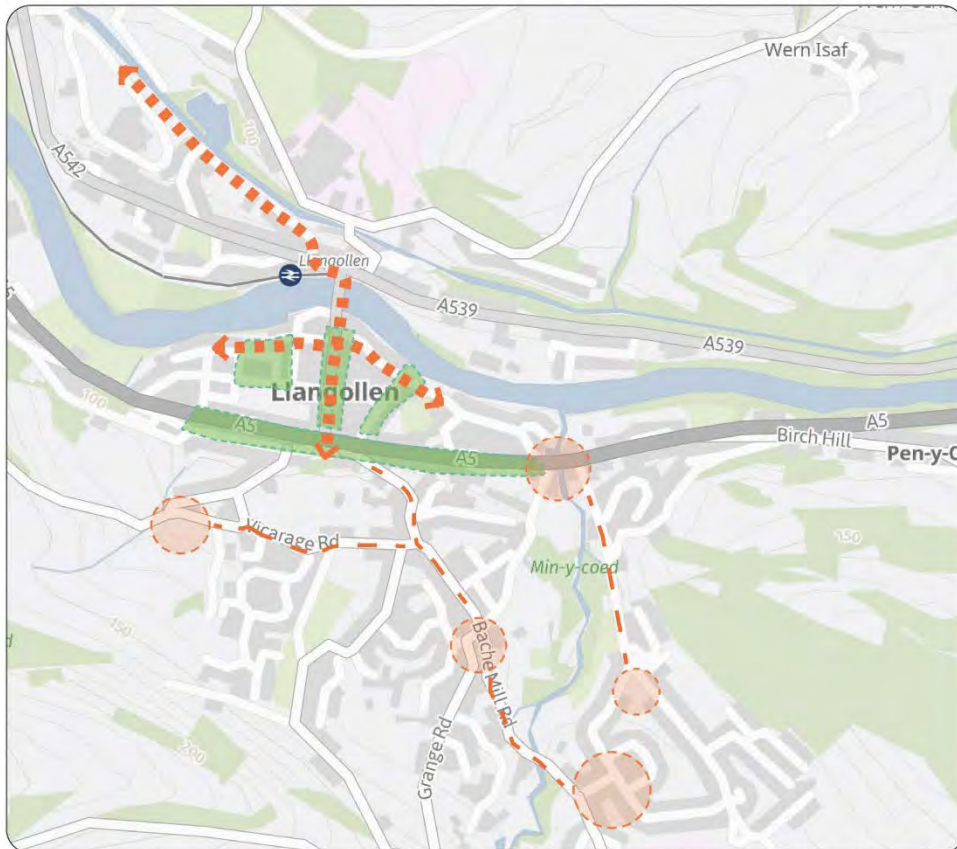
- Local businesses, landowners and interest groups (including local festivals)




### Recommended next steps

- Consult with community groups and local residents
- Establish evidence base – traffic flows, parking pressures, local flood risks.

Figure 16: Vignette of Key Opportunity 10

**10** Key Opportunity 10 - Provide multifunctional community spaces and accessible travel routes to accommodate both visitors and locals in Llangollen.



-  Improved public realm, with enhanced visitor infrastructure along the central spines of the community.
-  Smaller gathering spaces throughout the community and enhanced streetscape infrastructure.
-  Greening elements and SuDS corridors within the urban core.

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## Chapter 6

# Planning policy and planning tools for delivery

**6.1** PPW 12 states that the planning system must maximise its contribution to the protection and provision of green infrastructure assets and networks. It also states that local authorities should take a proactive and spatial approach and link to wider activity within local authorities. The aim of this GIA is to identify opportunities to deliver and improve GI through the planning system. There are a variety of ways DCC can achieve this through the effective use of the full range of planning policy and planning tools available to them. This chapter outlines the various planning tools and how they could be implemented.

## Strategic LDP policy

**6.2** The most critical element of effective delivery of GI through the planning system is the adoption of a robust strategic policy within DCC's LDP. DCC is currently in the process of preparing a replacement Local Development Plan. Comments received from the public consultation on the preferred strategy were reviewed and changes made prior to approving the LDP Preferred Strategy in May 2023. The protection, enhancement and sustainable development of green and blue infrastructure is included within the objectives of the preferred strategy **[See reference 103]**. While work on the Deposit LDP continues, GI forms part of key policies on infrastructure more broadly, including transport & accessibility and the natural and built environment. It is however recommended that DCC incorporate an individual, specific GI policy into their replacement LDP.

**6.3** When developing a key LDP policy for GI there are several assessment tools which are helpful in developing this. The Green Infrastructure Planning Policy Assessment Tool provides a self-assessment tool for local authorities to use to improve the design and wording of their GI policies **[See reference 104]**.

The tool contains 26 assessment criteria covering the core GI functions. This along with guidance in PPW 12 has been used to provide specific recommendations on a key GI policy for DCC. Specifically, the policy could include:

- An explicit acknowledgement of the value of GI and a recognition that GI design should be led by key principles: connectivity, multi-functional, varied, accessible and responsive to an area's character.
- A requirement that GI design, especially for major developments, should be informed by analysis of the site and wider context, including local needs, wider habitat networks, open space provision and public access.
- A requirement for on-site GI to deliver net benefit for biodiversity and to retain and enhance wider habitat and nature recovery networks.
- A requirement that watercourses and coastal areas (where relevant) are explicitly referenced in the design of GI.
- A requirement that SuDS are explicitly integrated into the design of GI where surface water flood risk is an issue, prioritising SuDS measures which enhance the amenity and biodiversity value of the development and facilitate public access where appropriate.
- A requirement that GI is designed to improve air quality issues where these have been identified.
- A requirement that GI provision for major developments provides opportunities for active travel and links to a wider path and public access network which provide recreational walking and cycling opportunities.
- A requirement that GI meets any standards for open space and provides recreational opportunities for different user and age groups.
- A requirement that long term management and maintenance arrangements and their funding are agreed and documented.
- Strong and clear policy that provides direction and clarity to developers on what the requirements for GI in development are, whilst providing flexibility to consider site specific constraints.

- A requirement that a green infrastructure statement be submitted with all planning applications detailing the multifunctional GI proposals (see further details in next section).

**6.4** DCC may also wish to consider specific GI requirements for different areas of the County which have distinct characters. In particular, there is a clear distinction between the urban coastal fringe at the north of the County and the more rural and dispersed settlement pattern in the rest of the County. It may therefore be appropriate to distinguish requirements in the key GI policy or any subsequent supplementary planning guidance between these areas. This distinction could be roughly split by the location of the North Wales express way (A55). Alternatively, or in addition, site specific GI requirements could be defined as part of larger scale site allocation policies (see further details below).

**6.5** Beyond this key policy, it is important to ensure that GI is fully embedded within the LDP rather than dealt with by an isolated policy alone. A dedicated key policy should therefore be complemented by the ‘mainstreaming’ of GI through the integration of explicit references to GI into other key policies in the LDP, including key policies on placemaking, housing and town centres and retail development. This will allow GI to move outside any environmental policy ‘silo’ and interact with other agendas including health, economic and social policy areas.

## Developer contributions

**6.6** Developer contributions for infrastructure can be used to channel funding to support green infrastructure. Two developer contribution mechanisms are available for use:

- Section 106 agreements
- Community Infrastructure Levy (CIL)

## **Section 106**

**6.7** Section 106 agreements are a mechanism which make a development acceptable in planning terms that would not otherwise be acceptable through site specific mitigation of the impact of development. Where a development fails to meet local criteria, such as any standards specified including accessible greenspace standards or the provision of street trees section 106 agreements could be used to secure financial support for local green infrastructure projects.

**6.8** In Denbighshire the strategic objectives and opportunities outlined in this GIA can be used to guide the allocation of developer contributions from section 106 agreements to make development acceptable in planning terms. The section 106 agreement can relate to provision either on site or a financial contribution to enhanced provision off-site. Costs for management and maintenance should be considered and built in, for example via a planning condition for on-site provision or a commuted sum towards off-site provision.

**6.9** It will be essential to have clear and transparent GI policy requirements so that the tests for section 106 agreements can be met (e.g. necessary; relevant to planning; directly, fairly and reasonably related to the proposed development). The development of a GI Supplementary Planning Guidance document may also be useful to assist in the identification, negotiation and securing of planning obligations in relation to GI.

## **Community Infrastructure Levy (CIL)**

**6.10** CIL is a locally based development tax, which came into force in 2010. CIL is not currently used in Denbighshire but should it be introduced, DCC should consider identifying some of the appropriate opportunities outline in this GIA in their Infrastructure Funding Statement (if these were fully costed) so that levied funds can contribute towards the delivery of these projects.

## Net Benefit for Biodiversity

**6.11** The section 6 duty in The Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty for public authorities. It states that public authorities must ‘seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions’ [See reference 105]. The implementation of this duty requires moving from a culture of impact and mitigation to one where biodiversity net benefit becomes one of the objectives of development.

**6.12** PPW 12 reflects this change in legislation and includes the requirement for a net benefit for biodiversity through development. This means that all development should leave biodiversity and the resilience of ecosystems in a significantly better state than before through securing immediate and long-term measurable and demonstrable benefit. This should primarily be delivered on or immediately adjacent to the site.

### Off-site biodiversity compensation

**6.13** If, when following the step-wise approach, and exhausting all other options, and if other options such as modifications, alternative sites, conditions or obligations are not sufficient to secure biodiversity outcomes on-site or in the immediate proximity, then off-site compensation must be provided both to compensate for any loss and to evidence an overall net benefit for biodiversity. This off-site compensation should be directed to the locations identified in this GIA which provide opportunities for wider ecosystem resilience at a landscape scale.

## The Step-wise Approach and the DECCA Framework

**6.14** PPW 12 makes detailed reference to the step-wise approach as the means of demonstrating the steps developers have taken towards securing a net benefit for biodiversity. This includes addressing the attributes identified under the DECCA framework. NRW applies the definition of ecosystem resilience published in its State of Natural Resources report in 2016, which is: “the capacity of ecosystems to deal with disturbances, either by resisting them, recovering from them, or adapting to them, whilst retaining their ability to deliver services and benefits now and in the future”. The DECCA framework can be applied to GI at different scales, habitats and land uses and by using these ecosystem attributes as proxies for resilience to guide the design of networks, this ensures an approach based on resilience different to the traditional, more reactive responses in the management of natural resources and GI. Natural Resources Wales has developed the DECCA framework for evaluating ecosystem resilience based on five attributes and properties specified in the Environment (Wales) Act 2016. The five attributes of the framework are:

- Diversity: maintaining and enhancing diversity across scales, including genetic, structural, habitat and between-habitat levels to support the complexity of ecosystem functions and interactions.
- Extent: incorporating measures which maintain and increase the area of semi-natural habitat/features and linkages between habitats.
- Condition: ecosystem conditions are affected by various and often complex pressures acting both as short term and longer term types of disturbance. Direct and wider impacts should be considered, for example avoiding or mitigating pressures such as climate change, pollution, invasive species, land management neglect etc.
- Connectivity: this encompasses the connections both among and within habitats, manifesting as physical corridors, stepping stones in the landscape, or patches of similar vegetation types. These elements collectively form a network facilitating the flow or movement of genes, species and natural resources. Developments should take opportunities to

develop functional habitat and ecological networks within and between ecosystems, building on existing connectivity.

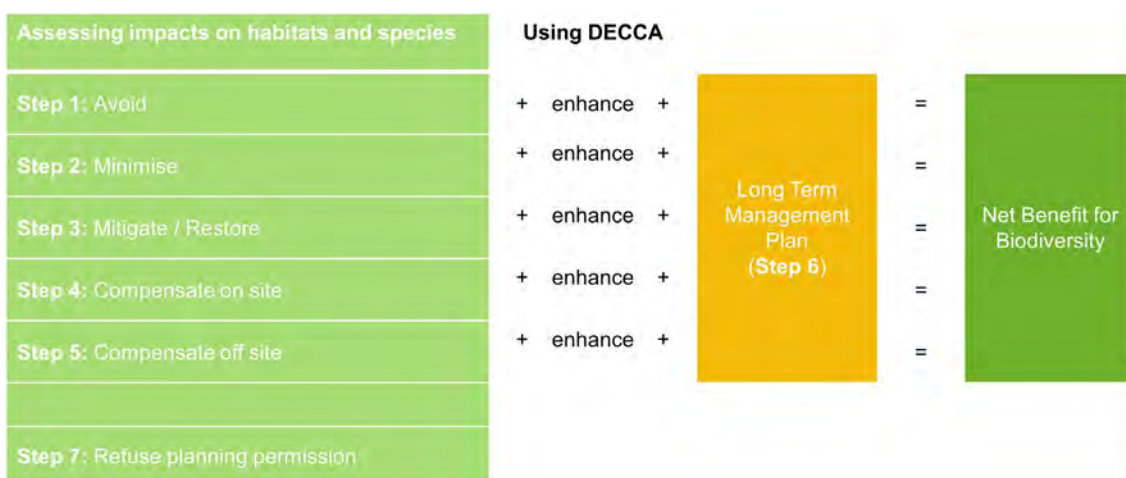
- Aspect: adaptability, recovery and resistance to / from a disturbance are defining aspects of ecosystem resilience.

**6.15** In applying the step-wise approach, development must conform with the following steps:

- **Avoid:** Initially, developers should prioritise biodiversity conservation by avoiding any potential loss or harm to biodiversity in its broadest context, encompassing the diversity of species and their abundance. Development should evaluate the necessity of the development, explore alternative locations or designs, and consider incorporating or substituting nature-based solutions where feasible.
- **Minimise:** Once all options for avoiding biodiversity loss or damage have been explored, development efforts should prioritise minimising the initial impact on biodiversity and ecosystems on the site. This may involve preserving existing habitats to the greatest extent possible, reducing the size of development and ensuring appropriate orientation, retaining existing features, or implementing innovative strategies to avoid damage.
- **Mitigate:** In cases where biodiversity and ecosystems could still suffer damage despite efforts to minimise impact, development should focus on mitigation measures. These measures must be tailored to address the specific adverse effects, aiming to restore damaged habitats and populations of affected species. The goal should exceed mere replacement ('like for like') and, if possible, enhance biodiversity beyond previous levels. Mitigation efforts should aim to bolster ecosystem resilience within the site and, if feasible, extend their benefits to the wider area.
- **Compensate:** When all feasible alternatives have been considered, and where modifications, alternative sites, conditions, or obligations are insufficient to ensure biodiversity preservation, then compensation for unavoidable damage must be pursued offsite. Compensation measures should be informed by place-based evidence and align with priorities outlined in SoNaRR, the Area Statement, and / or Green Infrastructure

Assessment. These compensation measures should be secured and established well in advance of any biodiversity loss onsite. Appropriate compensation measures or tools could include:

- biodiversity enhancements with a demonstrable ecological relationship to the site,
- translocation and restoration of site features, habitats and species, and / or
- contribution to an approved levy scheme or habitat bank.



## Site specific LDP policies

**6.16** Where provided, site allocation policies within the LDP should incorporate more detailed guidance on the specific GI to be provided on these sites. These should draw on the baseline data in the GIA to identify what GI assets are found on or near the development site and what threats or challenges is it exposed to, as well as what needs exist that new GI could help to address. They should identify any overlapping opportunities with those identified in the GIA. Additional site surveys and local expert knowledge should inform the identification of additional constraints and opportunities to enhance GI as part of the development process, or to address any identified deficiencies in the network.



**6.17** Where development briefs for proposed site allocations are developed, these should incorporate expectations for GI provision, its type and location, on the site.

## **Green Infrastructure Statements and Supplementary guidance**

### **Green Infrastructure Statements**

**6.18** As per PPW 12, the key policy should include the requirement for all developers to prepare and submit a GI statement with their planning application which is proportionate to the scale and nature of the development. The GI statement should demonstrate the multi-functional benefits associated with GI on the development site and should demonstrate how a step-wise approach has been applied. This statement should include the following:

- Highlight any baseline data considered and surveys and assessments undertaken such as ecological surveys, sustainable drainage statements, landscape and ecological management plans, open space assessments, green space provision and active travel links.
- An outline plan of the existing green infrastructure and connectivity on and adjacent to the site. This should be reflective of the site framework if applicable.
- Describe how existing GI has been incorporated into the proposal and demonstrate that there is no impact or no net loss.
- Provide a plan to show the proposed green infrastructure for the site and identify where opportunities for connectivity have been enhanced/created/restored.
- Provide details of long-term management, setting out arrangements for the immediate and on-going management of the site. It should include future monitoring arrangements for all secured measures, and it should clearly

identify the funding mechanisms in place to meet the management plan objectives.

## Supplementary guidance: Design

**6.19** The Council could consider supporting new GI planning policies by developing supplementary guidance setting out the content of Green Infrastructure Statements and what GI will be expected to be delivered through development. This would help to ensure stakeholders understand what GI should look like in different locations/development types. It could also explain further how developers should seek to meet GI and Net Benefit for Biodiversity requirements jointly using a structured, context-led approach to design that reduces complexity for developers and planners.

**6.20** A key component of such expanded guidance could be a ‘checklist’ for planners and developers. This checklist would provide a concise set of GI-related questions to be asked of any new development seeking planning permission. It will be most relevant to larger sites involving a masterplan process and would be supplemented with design frameworks and guidance which have been produced for specific development sites.

**6.21** Eight key GI questions to ask of development schemes that could form the core of a checklist are set out below. In the absence of any supplementary guidance, these questions could equally guide any deliberation that forms part of a Green Infrastructure Statement.

### **1. Has the landscape led the production of the masterplan?**

**6.22** High quality placemaking should take the landscape context as the starting point, drawing on relevant landscape character assessments, and should “work with” the landscape to create distinctive places. This means that features such

as topography, drainage patterns and protection of existing landscape features such as woodland and hedgerows should demonstrably guide the very earliest design stages, including the layout of roads and buildings, rather than being retrofitted later.

## **2. Has nature led the masterplan and does the site relate to wider ecological networks?**

**6.23** An understanding of existing habitats and net benefit for biodiversity opportunities, informed by existing habitat and species data and early ecological surveys, should inform the masterplan. This should include careful consideration of how environmentally sensitive areas or high value habitats (e.g. veteran trees and ancient woodlands) will be protected and ecological resilience enhanced.

**6.24** Proposals for new development should include a map of local habitat connectivity opportunities and provide evidence of how the development strengthens rather than weakens these networks; and how access to nature is improved for all. Habitats should be integrated throughout developments, including by using features such as street trees, hedges and micro-habitat features (e.g. bird and bat boxes/bricks), rather than being limited to key greenspaces.

**6.25** It is important that multi-functional GI features are delivered on-site wherever possible, both to create and restore habitats and to maximise co-benefits to address local needs such as health and wellbeing and flood resilience.

### 3. Has consideration of water and drainage led the masterplan?

**6.26** The layout of development should take into account the opportunities and constraints posed by existing waterways and water bodies, maximising the amenity and biodiversity benefits of both existing and new 'blue infrastructure' and seeking to improve water quality. Opportunities to enhance and create new water bodies should be maximised, given their significant amenity and biodiversity benefits and noting that ponds are a priority habitat.

**6.27** Where evidence indicates flood risk is significant, high-quality sustainable drainage (SuDS) measures should be designed into all new development - to be delivered as a network of measures as appropriate, including raingardens, permeable paving, swales, SuDS tree pits and wetland areas - rather than a single-function 'hole in the ground'. These should be designed to maximise benefits for amenity and biodiversity as well as flood risk management. Access should be provided where it is safe to do so. By slowing flows and encouraging infiltration (where appropriate) SuDS can also help to capture and hold water and replenish aquifers, contributing to reduced water stress. They can also help to filter out water pollution, improving water quality.

**6.28** Opportunities to capture and store water for reuse for non-potable uses such as irrigation of gardens should also be maximised. Detailed design should be guided by the Welsh Government's statutory standards for sustainable drainage systems [See reference 106].

### 4. Does the development meet local open space and green space standards in a coordinated manner?

**6.29** Developments should meet local open space standards (e.g. for play space and sports pitches) and address any existing deficiencies in access to

greenspace (see mapping in GI study). All green spaces should have clear functions. They should also ensure open spaces are designed to cater for diverse needs, ensuring inclusive access for all.

## **5. Does the development support active travel, linking up with active travel routes beyond the site boundary?**

**6.30** All development proposals should include a clear context map that illustrates how the proposed development will link into the wider active travel network (e.g. walking and cycling routes) and identify ways the development can strengthen the network, taking into account key destinations (e.g. schools, workplaces, public transport) that people will want to travel to both within the existing area and within the new development.

**6.31** The planning of safe and convenient active travel routes and GI delivery should be integrated to support the creation of attractive, green active travel routes that are appealing to users as well as providing wider benefits.

## **6. Is tree canopy cover across the site significantly expanded?**

**6.32** Increasing woodland cover is important for mitigating climate change and can also provide a wide range of benefits for nature and people. PPW 12 encourages LPAs to set locally relevant tree canopy targets to guide the protection and expansion of canopy cover. All development proposals should:

- Identify, retain, protect and integrate trees, woodland and hedgerows present on a development site.
- The provision of services and utilities infrastructure should avoid the loss of trees, woodlands or hedges and must be considered as part of the development proposal.

- Any permanent removal of trees, woodland and hedgerows will only be permitted where it would achieve significant and clearly define public benefits. Replacement planting should be at a ratio equivalent to the quality, environmental and ecological importance of the trees lost and this must be onsite or immediately adjacent to the site at a minimum ration of 3 trees of a similar type and size for every 1 lost.

**6.33** NRW guidance on planning woodland and choosing the right tree species should be followed and maintenance arrangements for new woodland agreed [See reference 107].

## **7. Does the masterplan address the design of GI to meet wider needs?**

**6.34** Opportunities to design GI to meet wider needs beyond those referred to above should also be fully explored. For example, is there an unmet local need for food growing space and if so, how can this be designed into the masterplan? Or are there opportunities to use dense barriers of woodland or hedgerows to reduce noise from nearby roads or reduce the spread of air pollution from busy roads into the development?

## **8. How will the site be maintained in the long-term?**

**6.35** Long-term stewardship of GI should be discussed at the earliest stages of design, to ensure stewardship in perpetuity. Models such as partnerships with the Land Trust or other charitable or community-led body should be explored. Maintenance arrangements, responsibilities and long-term funding arrangements must be clearly defined as part of all planning applications.

## Other tools

### Accessible natural greenspace and recreational open space standards

**6.36** In its Greenspace Toolkit [See reference 108], NRW outlines the Accessible Natural Greenspace Standards in Planning Policy Wales Technical Advice Note (TAN) 16: Sport, Recreation and Open Space recommends are used to complement GIAs. The standards are as follows:

- Everyone should live within 300m of accessible natural greenspace
- There should be at least once accessible site of >20ha within 2km of home
- There should be one accessible 100ha site within 5km
- There should be one accessible 500ha site within 10km

**6.37** Access standards are accompanied by a greenspace capacity criteria. The Fields in Trust standard of 2.4ha per 1,000 population is commonly used.

**6.38** Standards for access and quantity should be supported by a quality standard to ensure that greenspaces provide a safe and pleasant environment with facilities that meet the needs of local communities. Many Councils have chosen to adopt the Green Flag Award criteria as their quality standard for greenspaces. The retention of this quality standard can also be integrated as an expectation within the ongoing maintenance requirements for open space.

**6.39** DCC is currently updating their Open Space Audit and Strategy which will assess the type and quantity of existing open space in the County and develop Council specific standards. This will inform the replacement LDP policy and any subsequent update to the existing Recreational Open Space SPG. Where off-site contributions are permitted in line with local policy, these should be used to contribute to opportunities identified in the GIA wherever this would help to meet the standards.

## Building with Nature Standards

**6.40** PPW 12 makes explicit reference to the use of the Building with Nature Standards (BwN) as an effective model to improve the quality of development and demonstrate how natural resources within the development will be sustainably managed. The BwN is an evidence-based standard that defines high quality GI based on a set of 12 standards [See reference 109]. It seeks to raise the bar for industry by showing clearly what good GI looks like at each stage of the development process. In line with PPW 12 guidance, the standard could be adopted by DCC as a benchmark for assessing the quality of GI as part of development. The BwN standards include the following key principles:

- Multifunctional - individual features in combination contribute to a network of multiple benefits.
- Connected – provides or fills a missing natural link in the landscape for the benefit of nature and people.
- Sympathetically placed – reflects and/or creates a sense of place, considerate to the context and character of the local environment and priorities of its people and wildlife.
- Resilient – responds to the climate emergency in a positive, contributory way.
- Responsibly managed – has a sustainable mechanism to support its life-long function and benefits.
- Environmentally sensitive – mitigates its own local impact and improves the quality of the immediate natural environment.

**6.41** The BwN standard has an associated accreditation and major developments within Denbighshire should be encouraged to pursue this.



## Greenspace factor tool

**6.42** The greenspace factor is a tool to assess the amount and functionality of green infrastructure within planning applications. The adoption of this tool for major development would involve setting a target score for new development and sharing the calculation method. The target score should be set locally (informed by local context and GI needs). Natural England provide a recommended score of 0.3 for commercial development, 0.4 for residential development and, where appropriate, 0.5 for residential greenfield development. The total UGF score for a development is calculated based on multiplying UGF scores for different land cover types by the spatial area covered by each and then dividing the total by the total site area. Natural features such as street trees and hedgerows achieve higher scores than amenity grassland and permeable paving, which have a higher score than tarmac roads.

**6.43** The value of this tool in improving the amount and quality of GI within a development has been evidenced. However, it has largely been applied in urban areas in England to date, having been adopted within the London Plan in 2021. In Wales Swansea Council has been working with NRW to establish a greenspace factor tool for use in the Swansea Central Area with an emphasis on developments that contribute to a 'green artery' through the city centre [See reference 110]. The benefits of its application in a largely rural district have yet to be evidenced. It may therefore be that, if adopted, it is only applied in specific urban areas of the County. Before applying a greenspace factor tool in Denbighshire, it is recommended that locally based evidence is gathered, potentially through an empirical study evaluating the amount and type of greenspace provided in recently permitted developments. Such a study could calculate the greenspace factor score of these sample schemes, comparing them to the target scores used elsewhere, and where the total scores fall short it could explore if it would have been feasible to achieve the greenspace factor score by specifying additional greening measures. It would be important that this study also consider any potential impacts on viability so that a robust justification for its adoption can be made.

# Chapter 7

## Monitoring and review

### Introduction

**7.1** It is important that the implementation of the Green Infrastructure Policy and any Standards within the Local Development Plan are monitored and evaluated to ensure their effectiveness in protecting, maintaining and enhancing Denbighshire's green infrastructure network over time. The Welsh Government requires all LDPs to include a monitoring framework which informs findings reported in an Annual Monitoring Report (AMR). AMRs are an important instrument to assess the achievement of LDP objectives, the effectiveness of local policy as well as progress with delivering development on allocated sites.

**7.2** PPW 12 provides guidance on the monitoring and review process for GI. It states that GIAs and their data and mapped outputs must be regularly reviewed to ensure that information on habitats, species and other green features and resources is kept up-to-date, and the best available data is used to establish and monitor a set of key indicators. These indicators should be incorporated into both LPA Annual Monitoring Reports (AMRs) and, where appropriate, into Section 6 Plans and Reports.

**7.3** PPW 12 states that these indicators must be place-specific and cover information on key species and habitats; opportunities for the protection, retention, restoration, and recovery of nature (to secure a net benefit for biodiversity); and benefits / ecosystem services which contribute to the health and well-being of communities. The monitoring of the success and delivery of net benefits for biodiversity secured through the planning process (including planning conditions and obligations) would feed into this process, informed by any agreed management plan for a specific site.

**7.4** PPW 12 further states that at the end of each reporting period planning authorities should use this data to indicate whether there has been a net benefit or loss of biodiversity; whether progress is being made on securing mitigation and enhancement measures; and they should use the trends identified to determine future priorities for planning and decision making, with the aim of furthering the goals of the Section 6 Duty (referred to previously).

**7.5** This section provides recommendations on indicators which could be incorporated into Denbighshire's LDP monitoring framework, to meet the PPW12 requirements for the monitoring and review of GI.

**7.6** DCC is in the process of reviewing their LDP. The replacement LDP will include a strategic GI policy which is informed by the recommendations within this GIA. The series of indicators presented in this section are based on the policy recommendations provided within the GIA; however, these may need to be reviewed once the strategic GI policy has been finalised.

**7.7** The indicators developed have been identified with recognition of both the importance of monitoring and review in securing the best outcomes for GI as well as the limited resources available to undertake this monitoring. Current availability of data has also been considered. The indicators below provide an assessment of both the planning application *process* and planning application *outcomes*.

**7.8** Further information on the development of a monitoring framework is available in **Appendix C**.

## Indicators

### Suggested monitoring indicators

#### **Green Infrastructure to be delivered as part of new development.**

- Indicator
  - Planning guidance adopted on the delivery of Green Infrastructure as part of new development.
- Target
  - Preparation of up-to-date supplementary planning guidance within three years from date of LDP adoption.
- Trigger Point / Frequency
  - There is no up-to-date supplementary planning guidance within three years from date of LDP adoption.
- Actions
  - Prioritise the preparation of supplementary planning guidance on Green Infrastructure delivery.

7.9 Once the planning guidance has been adopted this indicator will begin to be monitored.

#### **Green Infrastructure to be designed and delivered in line with the priorities outlined in the GIA.**

- Indicator

- Number of planning applications which contain a GI Statement which adheres to the GI design guidance outlined in the GIA.
- Target
  - All planning applications contain a GI Statement which adequately addresses GI design guidance provided in the GIA.
- Trigger Point/Frequency
  - Single development granted permission that does not contain a fully compliant GI Statement.
- Actions
  - Analyse reasons for non-compliance, ensure guidance is providing adequate guidance on meeting the objectives of the GIA, review if necessary.

### **Provision of public open space, including children's play space, as part of new residential development.**

- Indicator
  - Number of residential developments that incorporate on-site public open space, including children's play space.
- Target
  - All residential development to incorporate on-site public open space, including children's play space.
- Trigger Point/Frequency
  - Single residential development granted permission that does not include on-site public open space, including children's play space, unless justified by local policy exception.
- Actions

- Analyse reasons for non-compliance; ensure open space standards are up to date; review local policy if necessary.

## **Maintenance of Green Infrastructure component elements to ensure delivery of lasting benefits.**

- Indicator
  - Development granted permission that includes costed and fully funded Green Infrastructure management and maintenance arrangements.
- Target
  - All planning applications to include costed and fully funded Green Infrastructure management and maintenance arrangements within their Green Infrastructure Statement.
- Trigger Point/Frequency
  - Single development granted permission without costed and fully funded Green Infrastructure management and maintenance arrangements, unless justified by local policy exception.
- Actions
  - Analyse reasons for developments that do not include Green Infrastructure management and maintenance arrangements, review of local policy if necessary.

## **On-site GI to deliver a net benefit for biodiversity and to retain and enhance wider habitat and nature recovery networks.**

- Indicator
  - Number of applications that demonstrate a net benefit for biodiversity through the use of the step-wise approach.

- Target
  - A net benefit for biodiversity is delivered as part of all new development over the local development plan period.
- Trigger Point/Frequency
  - A single permission not providing net benefit for biodiversity, unless justified by local policy exception.
- Actions
  - Analyse reasons for development not achieving net benefit, review of local policy if necessary.

**Improve health and well-being by increasing accessibility to services and leisure facilities by other means than individual motor vehicles.**

- Indicator
  - Length of active travel network provided through new development.
- Target
  - Increase the length of the active travel network in the County through new development.
- Trigger Point/Frequency
  - No increase in length of active travel network after four years of LDP adoption.
- Actions
  - Analyse reasons for development not achieving increases in the length of active travel routes, review local policy if necessary.

## Improve health and well-being by increasing accessibility to services and leisure facilities by other means than individual motor vehicles.

- Indicator
  - New connections made from active travel routes in new development to the wider active travel network.
- Target
  - Increase the number of connections from new active travel routes to the existing active travel network.
- Trigger Point/Frequency
  - No new connections made after four years of LDP adoption.
- Actions
  - Analyse reasons for development not achieving new connections, review local policy if necessary.

**7.10** Beyond these indicators **additional outcome indicators at a county level**, which the provision of GI could contribute to, could be considered as additions to the AMR. If incorporated these could be attributed to several LDP policies and seen as overarching indicators of success of the planning system in Denbighshire, albeit attribution of impacts directly to the planning process may not always be easy to evidence. These indicators could include:

- Health and wellbeing: measured through the physical environment domain which is calculated based on three sub domains; air quality, flood risk and green space, all of which the provision of good quality GI will help to improve. If used the target could be communities in Denbighshire improving their ranking compared to the 2019 base. A trigger point could therefore be that communities are not improving their ranking. LDP policies on transport, placemaking, infrastructure, open space and water management would also contribute to the achievement of this outcome.



- County wide net benefit for biodiversity: measured through county wide and national data sets on the condition of protected sites, the number of species and habitats and an increase in overall canopy cover. The delivery of GI, including net benefit for biodiversity, through development will assist in meeting these targets. If used the target could be increase in condition and quantity of biodiversity. Trigger points could relate to where there is falling conservation status of protected species and/or habitat compared to their status at the time of LDP adoption, where there is an overall decrease in the number of species and habitats and where there is no increase in the Country's tree and woodland coverage after four years of LDP adoption. LDP policies on natural & built environment and open space would also contribute to the achievement of this outcome. A policy review could be triggered if all policies expected to contribute to this indicator should targets not be met.

# Appendix A

## Glossary

**A.1 Active travel:** journeys made by physically active means such as walking, wheeling and cycling.

**A.2 Ancient and semi-natural woodlands (ASNW):** a type of woodland that is composed of native tree species that have not obviously been planted. They are an extremely valuable ecological resource, with an exceptionally high diversity of flora and fauna, and so are defined as an irreplaceable habitat.

**A.3 Blue corridors:** the linking together of areas of blue infrastructure including rivers and canals, wetlands, floodplains, flood storage areas, ponds, and parks, with the aim of mitigating flood risk, improving biodiversity and incorporating recreation opportunities.

**A.4 Building with Nature (BwN):** an evidence-based standard that defines high-quality GI based on a set of 12 standards. It aims to raise the bar for industry by showing clearly what 'good' GI looks like.

**A.5 Carbon sequestration:** a natural or artificial process by which carbon dioxide is removed from the atmosphere and stored.

**A.6 Ecosystem services:** are all of the processes and outputs that well-functioning ecosystems provide us with. These can be split into provisioning services (such as food, water and fuel). Regulating services (such as clean air or flood management), supporting services (such as healthy soils and spaces for wildlife) and cultural services (such as health and wellbeing and knowledge and learning).

**A.7 Environmental Land Management (ELM) Schemes:** government schemes which pay farmers and land managers to deliver, alongside food

## Appendix A Glossary

production, positive environmental outcomes. Environmental goods and services funded may include habitat restoration and creation, improving water quality, increasing flood resilience, woodland planting and reducing carbon emissions.

**A.8 Green and blue infrastructure (GI):** refers to the network of green and blue spaces that surround and run through out towns and cities.

**A.9 Green corridors:** the linking together of natural, semi-natural and man-made open greenspaces, creating an interconnected network of spaces that support wildlife and often recreation.

**A.10 Green flag award:** benchmark award for well managed parks and greenspaces, the assessment criteria for the award is often used as the quality criteria for parks and greenspaces.

**A.11 Green roofs:** a roof of a building that is partially or completely covered with vegetation.

**A.12 Green social prescribing:** a tool used to improve mental and physical health by supporting people to engage with nature based activities such as walking groups, community gardens and food-growing projects.

**A.13 Green walls:** walls which are partially or completely covered in vegetation.

**A.14 Greenspace Factor:** a tool to increase the amount of green land cover within urban environments by setting a target score for greenspace within new development. This is applied through setting a target score for new development which is calculated based on multiplying UGF scores for different land cover types by the spatial area covered by each and then dividing by the total site area.

**A.15 Historic character:** structures and features of architectural and historical interest in a place, and its development over time, which create local distinctiveness and a sense of place.

**A.16 Landscape character:** a distinct pattern or combination of elements that occurs consistently in a particular landscape and make one landscape different from another.

**A.17 Local Wildlife Site (LWS):** non-statutory, locally designated sites of importance for nature conservation.

**A.18 Long Distance Path:** a walking route generally over 20 miles in length and mainly off-road.

**A.19 National Nature Reserve (NNR):** sites designated under Section 35 of the Wildlife and Countryside Act 1981 to protect some of the UK's most important habitats, species and geology and to provide outdoor laboratories for research.

**A.20 Natural and semi-natural greenspaces:** land, water and geological features which have been naturally colonised by plants and animals.

**A.21 Natural capital:** the term for all natural assets including geology, soil, air, water and plants and animals that combine to provide a flow of benefits to people.

**A.22 Natural Flood Management (NFM):** uses natural processes to protect, restore and mimic the natural functions of river catchments, floodplains and the coast to slow and store water with the aim of reducing the risk of flooding. It includes methods such as woodland planting, floodplain wetland restoration and improved soil and land management.

**A.23 Nature Network:** a joined-up network of nature-rich sites, including restoration areas and other environmental projects through a series of areas of suitable habitat, habitat corridors and stepping-stones.

**A.24 Net benefit for Biodiversity (NBB):** The section 6 duty in The Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty for public authorities. It states that public authorities must 'seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions. The implementation of this duty requires moving from a culture of impact and mitigation to one where biodiversity net benefit becomes one of the objectives of development.

**A.25 Pocket parks:** small outdoor public space, no more than 0.4ha, but mostly smaller, located in an urban area.

**A.26 Public Rights of Way (PRoW):** a route over which the public have a right to pass and repass. The route may be used on foot, on (or leading) a horse, on a pedal cycle or with a motor vehicle, depending on its status. Although the land may be owned by a private individual, the public may gain access across that land along a specific route. Public rights of way are broken down into several types:

- **Footpath:** for walking, running, mobility scooters or powered wheelchairs.
- **Bridleway:** for walking, horse riding, bicycles, mobility scooters or powered wheelchairs.
- **Restricted byways:** for any transport without a motor and mobility scooters or powered wheelchairs.
- **Byways open to all traffic:** for any kind of transport, including cars (but they are mainly used by walkers, cyclists and horse riders).
- **Unclassified unmetalled country road (UUCR):** a public road which does not have an A, B or C road classification.

## Appendix A Glossary

- **Permissive paths:** not legally recorded Public Rights of Way but can be used with the permission of the landowner.
- **Promoted routes:** routes with significance in the area and popular with visitors.

**A.27 Priority habitats:** habitats deemed to be of principal importance for the purposes of conserving biodiversity, listed under Section 41 of the Natural Environment and Rural Communities Act 2006.

**A.28 Rain garden:** a shallow area of ground or dip which receives run-off from roofs and other hard surfaces. It is planted with plants that can stand waterlogging for up to 48 hours at a time. More drought-tolerant plants are used towards the edges. Storm water fills the depression and then drains.

**A.29 Riparian woodland:** woodland on or near riverbanks, often serving important functions such as mitigating flood risk and providing valuable habitat.

**A.30 Site of Special Scientific Interest (SSSI):** a conservation designation notified under the Wildlife and Countryside Act 1981, denoting a protected area in the United Kingdom, designated due to special interest in its flora, fauna, geological or physiographical features. They are protected by law to conserve their wildlife or geology.

**A.31 Sustainable drainage systems (SuDS):** encompass a range of techniques for holistically managing water runoff to reduce the quantity, and increase the quality, of surface water. SuDS should mimic natural systems, and differ from traditional drainage as they aim to manage rain water close to where it falls. Types include green roofs, permeable surfaces, swales and rain gardens.

**A.32 Urban greening:** the incorporation of greenery into public streets and spaces, including tree-planting and landscaping.

**A.33 Urban heat island effect:** the process by which an urban area experiences warmer temperatures than nearby rural areas due to the lack of natural land cover and hard surfaces and buildings absorbing and retaining heat.

## Appendix B

# Review of Policies and Strategies

## International

### **International Memorandum of Understanding on Nature Based Climate**

**Action (2017):** Recognising the importance of the nature-based approach as a key component of climate change action, the Welsh Government initiated and is a founding signatory to the International Memorandum of Understanding on Nature Based Climate Action.

## UK

**A Green Future: Our 25 Year Plan to Improve the Environment (2018):** One of the key targets of the UK government's 25 Year Environment Plan (25YEP) is to "achieve a growing and resilient network of land, water and sea that is richer in plants and wildlife". This includes targets to restore 75% of protected terrestrial sites to favourable condition, as well as creating or restoring 500,000 hectares of wildlife-rich habitat outside this protected network. Another target focuses on improving at least three quarters of the UK's waters to close to their natural state as soon as practicable.

## National

*Wales has undergone a fundamental legislative and policy shift, with a strong emphasis on sustainable development principles to secure the long-term well-being of Wales. This shift in legislation and policy present pathways for Local Authorities to identify a clearer picture of natural resources, the risks to those*



*resources and to take advantage of the opportunities they provide in an efficient process that ensures the right action is taken in the right place.*

**Planning Policy Wales (2024):** Planning Policy Wales Edition 12 (PPW 12) sets out the Welsh Government’s objectives for sustainable development within Wales and a series of Technical Advice Notes (TANs) provide guidance to implementing PPW 12. PPW 12 highlights the fundamental role of green infrastructure in shaping places and improving wellbeing, by providing multiple functions and benefits for social, economic and environmental resilience. It states that planning authorities should adopt a strategic and proactive approach to green infrastructure, which should be fully integrated into Local Development Plans. PPW 12 requires all planning authorities to produce a Green Infrastructure Assessment. The most recent edition of Planning Policy Wales (PPW 12) was published in February 2024, and amongst other changes across the document, the newest update backs the reformed environmental and biodiversity measures outlined in chapter 6 that took immediate effect in October 2023, around four months prior to the formal publication of PPW 12. Key changes to chapter 6 include:

- A Green Infrastructure Statement should be submitted with all planning applications.
- A Scheme of Enhancements must be provided to ensure a net benefit for biodiversity.
- All development must deliver a net benefit for biodiversity and ecosystem resilience from the baseline state (proportionate to the scale and nature of the development proposed).
- Where adverse effects on biodiversity and ecosystem resilience cannot be avoided, minimised or mitigated/restored, and as a last resort compensated for, it will be necessary to refuse planning permission.
- Planning authorities can ensure biodiversity enhancement is undertaken at each stage of the step-wise approach through attaching planning conditions and/or other obligations to a planning permission.
- Development in an SSSI which is not necessary for the management of the site must be avoided.

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- Where peat soil is identified, considerable weight should be given to its protection and unless other significant material considerations indicate otherwise, it will be necessary to refuse permission.
- Positive mechanisms of rural tree retention should be considered, and measures taken to replace them in an effective and economic manner.

The importance of keeping GIAs up to date through regular review of the most recently available spatial data is also emphasised to inform development management decisions; and there is a greater emphasis on the monitoring and evaluation of a key set of indicators on multi-functional benefits.

**Future Wales: the National Plan 2040 (2021):** Future Wales is the National spatial plan, published in 2021, which sets a direction for where investments in infrastructure should be made and development should be located in Wales. The Future Wales spatial strategy includes a number of policies with relevance to GI, including:

- Policy 2 – Shaping Urban Growth and Regeneration, which highlights the importance of GI in effective placemaking;
- Policy 8 - Flooding, which favours nature-based flood risk management over engineered solutions wherever possible;
- Policy 9 – Resilient Ecological Networks and Green Infrastructure, which highlights the need to both safeguard and create new ecological networks and identify opportunities where existing and potential GI could be maximised as part of placemaking;
- Policy 12- Regional Connectivity, which supports The Active Travel (Wales) Act 2013 to bring about a substantial increase in active travel; and
- Policy 15 – National Forest, which promotes the implementation of a new national forest in Wales.

**Wales Infrastructure Investment Strategy (2021):** The Wales Infrastructure Investment Strategy outlines the Welsh government's plans and priorities for investing in infrastructure projects. The strategy takes as broad a view of infrastructure as possible, ranging from the traditional built environment to green

## Appendix B Review of Policies and Strategies

and blue infrastructure, including woodlands and natural flood management investments. It places particular emphasis on the importance of GI within the Transforming Towns agenda and in the multi-functional benefits of woodland as a type of GI for air quality and decarbonisation.

**The National Natural Resources Policy (2017):** The focus of the NNRP is the sustainable management of Wales' natural resources, to maximise their contribution to achieving goals within the Well-being of Future Generations Act. The policy sets out three National Priorities. These are:

- Delivering nature-based solutions
- Increasing renewable energy and resource efficiency
- Taking a place-based approach

The State of Natural Resources Report shows that investment in our natural resources deliver most in terms of both ecosystem resilience and benefits across all the wellbeing goals.

**Planning Act (Wales) (2016):** The Planning Act Wales sets out a framework for sustainable development in accordance with the Well-being of Future Generations Act and has the purpose of ensuring that the development and use of land contribute to improving the economic, social, environmental and cultural well-being of Wales. The planning system is central to achieving sustainable development in Wales. It provides the legislative and policy framework to manage the use and development of land in the public interest so that it contributes positively to the achievement of the well-being goals.

**Environment (Wales) Act (2016):** The Environment (Wales) Act 2016 introduces the Sustainable Management of Natural Resources (SNMR) and sets out a framework to achieve this as part of decision-making. The objective of the SMNR is to maintain and enhance the resilience of ecosystems and the benefits they provide. The Act recognises the challenges that natural resources and ecosystems face and the opportunities they can provide. This includes the ways that natural resources are currently managed and how pressures can be reduced. The Act also instils a duty on Welsh Government to produce and

implement a National Natural Resources Policy for the achievement of SMNR in Wales.

**Well-being of Future Generations Act (2015):** The Well-being of Future Generations (Wales) Act 2015 requires public bodies in Wales to improve the economic, social, environmental, and cultural well-being of Wales in accordance with the principle of sustainable development. This means seeking to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs. The Act sets seven well-being goals. Four of these goals have most relevance to the implementation of GI:

- *A resilient Wales* - A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).
- *A healthier Wales* - A society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood.
- *A Wales of cohesive communities* - Attractive, viable, safe and well-connected communities.
- *A globally responsible Wales* - A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.

**Green Growth Wales: Investing in the Future (2014):** The document sets out how the sustainable use of Wales' natural resources can create a new economic model that will deliver wealth creation and economic growth both today and into the future. It sets out the importance of GI in increasing the underlying resilience of Wales.

**Active Travel (Wales) Act (2013):** The Active Travel (Wales) Act makes walking and cycling the preferred option for shorter journeys, particularly everyday journeys, such as to and from a workplace or education establishment, or in order to access health, leisure or other services or facilities.

The Active Travel Act requires local authorities to produce Integrated Network Maps, identifying the walking and cycling routes required to create fully integrated networks for walking and cycling to access work, education, services and facilities.

**Countryside and Rights of Way Act (2000):** The Countryside and Rights of Way (CRoW) Act 2000 introduced new provisions to modernise Public Rights of Way management and create a new statutory 'Right on Foot' to certain types of open land. It followed a study of the economic, environmental and social benefits and costs of different approaches for improving access to open countryside. The Open Access Land designation to land such as mountain, moor heath, down and registered common has expanded public access opportunities to Green Infrastructure at the landscape scale.

## Regional

**The Northeast Wales Area Statement (2019):** Produced by Natural Resources Wales, this area statement outlines the key challenges facing Northeast Wales, what can be done to tackle the challenges and how natural resources can be better managed for the benefit of future generations. The statement consists of five key themes, all of which have relevance to GI:

- Climate emergency: resilience and adaptations
- Develop and improve urban/rural green infrastructure
- Increasing woodland cover for social, environmental and economic benefits
- Promoting the resilience of ecosystems in maintaining and enhancing biodiversity
- Protecting water and soil through farming and sustainable land management

**Marine Area Statement (2019):** Produced by Natural Resources Wales, The Marine Area Statement covers the inshore waters of Wales extending out 12

## Appendix B Review of Policies and Strategies

nautical miles and making up 43% of the Welsh territory. The statement seeks to enable a common understanding about what is important about the marine environment and what its current state is, establish a more joined-up approach at the coast, enable a feeling of joint ownership / responsibility for the marine area of Wales and create long-term action to deliver multiple benefits that address agreed / recognised issues and opportunities. The statement consists of five key themes, all of which have relevance to GI:

- Building resilience of marine ecosystems
- Nature-based solutions and adaptation at the coast
- Making the most of marine planning

**Strategic Development Plans (Upcoming):** The national plan will be built on by Strategic Development Plans (SDPs), which will be prepared by Corporate Joint Committees (CJCs) at a regional level. These plans will focus on issues that cross Local Planning Authority boundaries and will look at how people in each of the four regions in Wales go about their day-to-day lives, from working and commuting patterns to shopping and leisure activities. An SDP for Northeast Wales is anticipated in the coming months.

## Local

### **Denbighshire Climate and Ecological Change Strategy (2019):**

Denbighshire County Council declared a Climate Change and Ecological Emergency in July 2019. In response and by 31 March 2030 the Council aims to become a Net Zero Council and Ecologically Positive Council. The plan outlines 18 changes to policies and processes which will help the Council to achieve this. With relevance to GI, these include:

- Development of a pollinator policy
- Reviewing environmental standards for grounds maintenance to focus on enhancing biodiversity
- Development of a tree and woodland strategy

## Appendix B Review of Policies and Strategies

- Investigate the potential for better land use to deliver multi-functional benefits
- Providing clear guidance to developers on expectations for the retention of importance ecological features
- Start using an ecological compliance audit for planning applications to ensure mitigation, compensation and enhancement is actually installed
- Ensure that local priorities for climate change and biodiversity are reflected in the replacement LDP
- Use the LDP annual monitoring report to monitor outcomes

**Clwydian Range and Dee Valley AONB SPG (2018):** The AONB covers part of the counties of Denbighshire, Flintshire and Wrexham. This guidance is primarily targeted at individuals proposing new development and for decision makers involved in the management of the AONB.

**Recreational Public Open Space SPG (2017):** This SPG sets out requirements for the protection and enhancement of the quantitative and qualitative of open space within new development to meet the needs of the local community.

**Conservation and Enhancement of Biodiversity SPG (2016):** This document outlines the Council's expectations with regard to the biodiversity information to be submitted with a planning application, scope and standards of submitted ecological surveys; and briefly points out potential additional legal duties on developers as a result of obtaining planning consent.

**Trees & Landscaping SPG (2016):** Trees and hedgerows form an important part of our environment and in the delivery of sustainable development, the retention and the planting of new trees and hedges is crucial. This SPG provides detailed guidance and advice on the retention and incorporation of trees and landscaping in the determination of future planning applications.

**Denbighshire Local Development Plan 2006 – 2021:** The Denbighshire Local Development Plan has been produced in accordance with planning legislation and national policy and was adopted by the Council in June 2013. The Local Development Plan sets out the proposals and policies for future development and use of land in Denbighshire. Denbighshire is in the process of preparing a new Local Development Plan, however until this is formally adopted, the already adopted plan remains extant. Policies of relevance to GI include:

- Policy RD1: Sustainable development and good standard design
- Policy RD2: Green barriers
- Policy BSC11: Recreation and open space
- Policy PSE5: Rural economy
- Policy PSE11: Major new tourism developments
- Policy PSE14: Outdoor activity tourism
- Policy VOE1: Key areas of importance
- Policy VOE2: Area of outstanding natural beauty and area of outstanding beauty
- Policy VOE3: Pontcysylite aqueduct and canal world heritage site
- Policy VOE5: Conservation of natural resources
- Policy VOE6: Water management
- Policy ASA2: Provision of sustainable transport facilities

**Denbighshire Leisure Strategy:** This strategy presents the priorities for Leisure Services up to 2020. The Strategy includes reference to the importance of outdoor leisure, including ‘natural’ resources such as Country Parks, Areas of Outstanding Natural Beauty (referred to as National Landscapes as of November 2023), National Trails and local open green spaces in facilitating health and wellbeing.



## Appendix C

# Developing a monitoring framework

**C.1** The Welsh Government Development Plans Manual 2020 [See reference 111] states that the monitoring framework should consist of the key policies / proposals, indicators, targets, trigger points and actions. The manual describes these as follows:

- **Indicator:** The indicators in the monitoring framework should be focussed on those key policies fundamental to delivering the plan. It should not be too onerous or too complex. All indicators should be specific, measurable and realistic. Denbighshire should make use of the datasets used in this GIA, to assist with the monitoring of indicators which require a county wide assessment such as woodland cover or the length of active travel routes.
- **Target:** All indicators must have a corresponding target, even if this is expressed as a preferred direction of travel. Targets must be specific, measurable and realistic. LDP targets should directly relate to the plan's strategy, objectives and policy outcomes. Generally, targets are numerical (such as number of homes or jobs) spatial (such as the percentage growth on allocated sites) or contextual (such as demographic trends e.g. unemployment rates, commuting patterns)
- **Trigger Points:** Trigger points are the key mechanism for determining how policies are working and whether action to improve their effectiveness is required. They set the parameters against which policies should deliver outcomes. They should be specific and measurable to ensure issues can be highlighted. For example, it is not appropriate for LPAs to include wide ranging triggers as this will be ineffective and will limit clear conclusions being drawn where there are trends of under delivery. Trigger points that have specific numerical outputs (e.g. housing completions / employment land take up) should be measured over two consecutive years (to be clear this means annual delivery rates not the number of AMRs submitted) allowing for trends to develop and become clearly identifiable.

## Appendix C Developing a monitoring framework

- **Actions:** When trigger points are activated, investigation is required to understand why policies and proposals are not being implemented as intended and determine what action will be necessary. LPAs will need to consider the delivery of all indicators collectively, their interrelationships and the magnitude of under delivery. Some indicators will be more significant than others in terms of delivering the development plan strategy. This should be reflected in any subsequent action. LPAs must clearly set out how variances of under delivery will be considered through future actions and provide clarity on the consequential steps to be taken, depending on the magnitude of any variance.

**C.2** Currently, DCC is in the process of reviewing their LDP, which will include a strategic GI policy. This GIA provides recommendations for what this policy should incorporate. Until this GI policy is produced a final set of indicators cannot be specified. However, suggested indicators have been identified based on the policy recommendations included within this GIA.

**C.3** Some of the policy requirements outlined in the GIA may not be monitored as part of a GI policy but are likely to be picked up under different local policies. For example, the provision of recreational public open space may be monitored as part of any policy addressing residential amenity in residential development. Extensions to the active travel network could also be delivered as part of a local policy on sustainable means of transport.

## Appendix D

### Datasets

## Datasets used in the preparation of the GIA

### Urban Tree Canopy Cover 2018

- Source:
  - Natural Resources Wales
- Link:
  - Available at: <https://datamap.gov.wales/layergroups/inspire-nrw:UrbanTreeCover2018>

### Protected Sites Network

- Source:
  - Natural Resources Wales
- Link:
  - Available at: [https://datamap.gov.wales/layers/inspire-nrw:NRW\\_UNITIZATION](https://datamap.gov.wales/layers/inspire-nrw:NRW_UNITIZATION)

### Habitat Network Maps

- Source:
  - Natural Resources Wales

## Appendix D Datasets

- Link:

- Available at:

[https://datamap.gov.wales/layergroups/geonode:nrw\\_habitat\\_network](https://datamap.gov.wales/layergroups/geonode:nrw_habitat_network)

## Unified Peat Map

- Source:

- Welsh Government

- Link:

- Available at: [https://datamap.gov.wales/layers/inspire-wg:wg\\_unified\\_peat\\_2019](https://datamap.gov.wales/layers/inspire-wg:wg_unified_peat_2019)

## National Forest Inventory

- Source:

- Forest Research

- Link:

- Available at: <https://www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/>

## LANDMAP – Geological Landscape

- Source:

- Natural Resources Wales

- Link:

- Available at: [https://datamap.gov.wales/layers/inspire-nrw:NRW\\_LANDMAP\\_Geological\\_Landscape](https://datamap.gov.wales/layers/inspire-nrw:NRW_LANDMAP_Geological_Landscape)

## LANDMAP – Landscape habitats

- Source:
  - Natural Resources Wales
- Link:
  - Available at: [https://datamap.gov.wales/layers/inspire-nrw:NRW\\_LANDMAP\\_Landscape\\_Habitats](https://datamap.gov.wales/layers/inspire-nrw:NRW_LANDMAP_Landscape_Habitats)

## LANDMAP – Visual Sensory

- Source:
  - Natural Resources Wales
- Link:
  - Available at: [https://datamap.gov.wales/layers/inspire-nrw:NRW\\_LANDMAP\\_Visual\\_Sensory](https://datamap.gov.wales/layers/inspire-nrw:NRW_LANDMAP_Visual_Sensory)

## LANDMAP – Historic Landscape

- Source:
  - Natural Resources Wales
- Link:
  - Available at: [https://datamap.gov.wales/layers/inspire-nrw:NRW\\_LANDMAP\\_Historic\\_Landscape](https://datamap.gov.wales/layers/inspire-nrw:NRW_LANDMAP_Historic_Landscape)

## LANDMAP – Cultural Landscape Services

- Source:
  - Natural Resources Wales
- Link:

- Available at: [https://datamap.gov.wales/layers/inspire-nrw:NRW\\_LANDMAP\\_Cultural\\_Landscape\\_Services](https://datamap.gov.wales/layers/inspire-nrw:NRW_LANDMAP_Cultural_Landscape_Services)

### Flood Risk Assessment Wales

- Source:
  - Natural Resources Wales
- Link:
  - Available at: <https://datamap.gov.wales/layergroups/inspire-nrw:FloodRiskAssessmentWales>

### Communities at Risk Register

- Source:
  - Natural Resources Wales
- Link:
  - Available at: [https://datamap.gov.wales/layergroups/geonode:nrw\\_communities\\_at\\_risk\\_register](https://datamap.gov.wales/layergroups/geonode:nrw_communities_at_risk_register)

### Working with natural processes (natural flood risk management)

- Source:
  - JBA trust
- Link:
  - Available at: <https://naturalprocesses.jbahosting.com/Map>

## Welsh Information for Nature-based Solutions (WINS)

- Source:
  - Natural Resources Wales
- Link:
  - Available at: <https://smnr-nrw.hub.arcgis.com/apps/036c04ccb85948d2abe7312de75ad318/explore>

## Welsh Index of Multiple Deprivation

- Source:
  - Welsh Government
- Link:
  - Available at: <https://wimd.gov.wales/explore?lang=en#&domain=overall&z=8&lat=52.4137&lng=-4.2000>

## Greenspace site and access points

- Source:
  - Ordnance Survey

## Ancient woodland inventory 2021

- Source:
  - Natural Resources Wales
- Link:

## Appendix D Datasets

- Available at: [https://datamap.gov.wales/layers/inspire-nrw:NRW\\_ANCIENT\\_WOODLAND\\_INVENTORY\\_2021](https://datamap.gov.wales/layers/inspire-nrw:NRW_ANCIENT_WOODLAND_INVENTORY_2021)

## Corine Land Cover 2018

- Source:
  - Land Monitoring Service
- Link:
  - Available at: <https://land.copernicus.eu/en/products/corine-land-cover/clc2018>

## Light Pollution and Dark Skies

- Source:
  - CPRE
- Link:
  - Available at: <https://www.cpre.org.uk/light-pollution-dark-skies-map/>

## Woodland Opportunity Map 2021

- Source:
  - Welsh Government
- Link:
  - Available at: <https://datamap.gov.wales/maps/woodland-opportunity-map-2021/>

## GI Layers

- Source:



## Appendix D Datasets

- Denbighshire County Council

### Open Space Needs Assessment

- Source:
  - Denbighshire County Council

### Forest Recreation Areas

- Source:
  - Natural Resources Wales

### Historic Environment

- Source:
  - CADW and Data Map Wales
- Link:
  - Various showing: Listed Buildings, scheduled monuments, world heritage sites, historic parks and gardens, conservation areas and heritage coasts

### Source Protection Zone (SPZ)

- Source:
  - Natural Resources Wales
- Link:
  - Available at: [https://datamap.gov.wales/layers/inspire-nrw:NRW\\_Source\\_Protection\\_Zones](https://datamap.gov.wales/layers/inspire-nrw:NRW_Source_Protection_Zones)

## Areas benefitting from flood defences

- Source:
  - Natural Resources Wales
- Link:
  - Available at: [https://datamap.gov.wales/layers/inspire-nrw:NRW\\_AREA\\_BENEFITING\\_FROM\\_FLOOD\\_DEFENCE](https://datamap.gov.wales/layers/inspire-nrw:NRW_AREA_BENEFITING_FROM_FLOOD_DEFENCE)

## Main Rivers

- Source:
  - Natural Resources Wales
- Link:
  - Available at: [https://datamap.gov.wales/layers/inspire-nrw:NRW\\_MAIN\\_RIVERS](https://datamap.gov.wales/layers/inspire-nrw:NRW_MAIN_RIVERS)

## National Cycle Network

- Source:
  - Sustrans
- Link:
  - Available at: <https://data-sustrans-uk.opendata.arcgis.com/>

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