monmouthshire
sir fynwy

# GREEN INFRASTRUCTURE STRATEGY

April 2024

## Volume 1 **Strategic Framework**

Monmouth

## CONTENTS



## Key Messages

- First published in 2019, the Green Infrastructure Strategy has been reviewed to reflect changes in policy, the new Gwent Green Grid Regional Green Infrastructure Strategy and updated baseline data. The review also reflects progress in delivery of green infrastructure projects over the last 5 years.
- Planning Policy Wales 12 defines Green Infrastructure as 'the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places' (such as towns and villages).
- This Green Infrastructure Strategy promotes an integrated and joined up approach to delivering Green Infrastructure that takes into account the needs of Monmouthshire's communities, environment and economy.
- An important overarching principle underpinning the Strategy is the need to recognise the multi-functionality of Green Infrastructure assets and to maximise the benefits different assets can deliver through an integrated approach. For example, green spaces can be used for sustainable food production, contribute to flood management and provide access to nature for informal recreation. These benefits can support improved health and well being, climate mitigation/adaptation and biodiversity.
- It is essential that the inter-relationship and connections between the individual projects outlined in the Green Infrastructure Delivery Plan are considered in the round to ensure that opportunities for shared outcomes and mutual benefits are maximised.

### Green Infrastructure Vision for Monmouthshire

Monmouthshire has a well-connected multifunctional green infrastructure network comprising high quality green spaces and links that offer many benefits for people and wildlife.

The network's integrity and connectivity is maintained, protected and enhanced in a planned and managed way, which recognises the interdependency and multifunctionality of landscape, heritage and biodiversity elements.

Investment in green infrastructure underpins the County's ongoing economic, social and environmental success by supporting sustainable growth, improving quality of life and place, delivering ecosystem resilience and tackling the nature and climate emergencies.

Monmouthshire is a green and healthy place to live, with an increasingly coherent and resilient ecological network of wildlife habitats, helping to conserve biodiversity.

# 1

# Setting the Scene

Abergavenny

## 1.1 Introduction

1.1.1 This Strategy sets out Monmouthshire County Council's approach to the planning, management and delivery of Green Infrastructure (GI) focussed around the following strategic objectives and priorities:

- Improve Health & Wellbeing
- Enhance Biodiversity & Increase Ecosystem Resilience
- Increase Climate Change & Nature Resilience
- Strengthen Landscape Character & Distinctiveness
- Support Sustainable Economic Development

1.1.2 In doing so, the GI Strategy will help contribute to the delivery of:

- Replacement Local Development Plan
- MCC Community and Corporate Plan
- MCC Climate and Nature Emergency Strategy and Action Plans
- MCC Biodiversity and Ecosystem Resilience Forward Plan and Action Plan
- MCC Nature Recovery Action Plan
- Public Service Board Wellbeing Plans

1.1.3 There is great benefit from working in a collaborative, integrated and joined-up way to deliver GI through a multi-disciplinary approach as illustrated on **Diagram 1.1**, both at the local and regional scale. This way of working is championed by the Gwent Green Grid Partnership though the Regional Green Infrastructure Strategy.

**Green Infrastructure Strategy Review**

The 2019 Green Infrastructure Strategy has been reviewed to reflect changes to national planning policy; alignment with the new Gwent Green Grid Regional Green Infrastructure Strategy; updated local plans and strategies; updated green infrastructure mapping data/information; and progress in delivery of green infrastructure projects.

## 1.2 Structure of the Strategy

1.2.1 The Strategy was prepared by CBA on behalf of Monmouthshire County Council.

**Volume 1 – Strategic Framework (this document)**

1.2.2 Volume 1 of the Strategy sets out the Council's strategic framework for GI provision in Monmouthshire. It identifies key priorities and strategic opportunities where the restoration, maintenance, creation or connection of green features and functions would deliver the most significant benefits, both on a county-wide basis and for locations where growth is planned in the Monmouthshire Replacement Local Development Plan (RLDP) 2018-2033 Preferred Strategy (endorsed October 2023).

1.2.3 As required by Planning Policy Wales, the GI Strategy is informed by a Green Infrastructure Assessment for Monmouthshire (see **Appendix D**) developed in accordance with the principles of the NRW Green Infrastructure Assessment Guidance Note 42 (2023).

1.2.4 An Executive Summary of the GI Strategy is set out in a separate document.

**Volume 2 – Delivery Plan**

1.2.5 Volume 2 of the Strategy provides the Council's delivery plan for GI in Monmouthshire. Provided as a separate document, the Delivery Plan includes prioritised action plans for delivery of strategic/landscape-scale GI projects, and local GI projects to support development at the key growth locations and rural secondary settlements. The action plans are designed to support funding bids by the Council and its delivery partners.

| **Planning Policy Wales Edition 12 (February 2024)**<br><br>**Green Infrastructure Strategy/Assessment Requirements** | **GI Strategy Signposts** |
|---|---|
| Identify landscape, biodiversity, geodiversity, historic and cultural features which need to be safeguarded as part of multi-functioning urban and rural landscapes (para 6.2.7) | Vol 1 - Appendix D (GI Assessment)<br><br>Vol 1 - Section 3 (GI Strategy)<br><br>Vol 2 - Delivery/ Project Action Plan |
| Identify how a net benefit for biodiversity will be secured and the attributes of ecosystem resilience will be enhanced, making the links to other land management activity and maintenance regimes (para 6.2.7) | |
| Facilitate the reduction of pollution by identifying nature based solutions which form part of, or complements, wider activity at a catchment scale to address pollution and improve the restoration of riverine and other habitats (para 6.2.7) | |
| Address the climate emergency by ensuring tree canopy cover in urban areas is increased, incorporating measures for maintaining good air quality and appropriate soundscapes and by requiring effective natural flood management and sustainable urban drainage schemes (para 6.2.7) | |
| Ensure communities have accessible natural green spaces of various sizes and scales within reasonable walking and cycling distances (para 6.2.7) | |
| Identify how the provision of green infrastructure could form an integral part of strategies for growth and provide broad parameters for securing its implementation which recognises the dynamic nature of its provision and identifies measures which will need to be provided to safeguard it over the long term (para 6.2.7) | |
| The need for ecosystems, habitats and species to adapt to climate change and other pressures should be considered as part of the Green Infrastructure Assessment. (para 6.2.8) | |

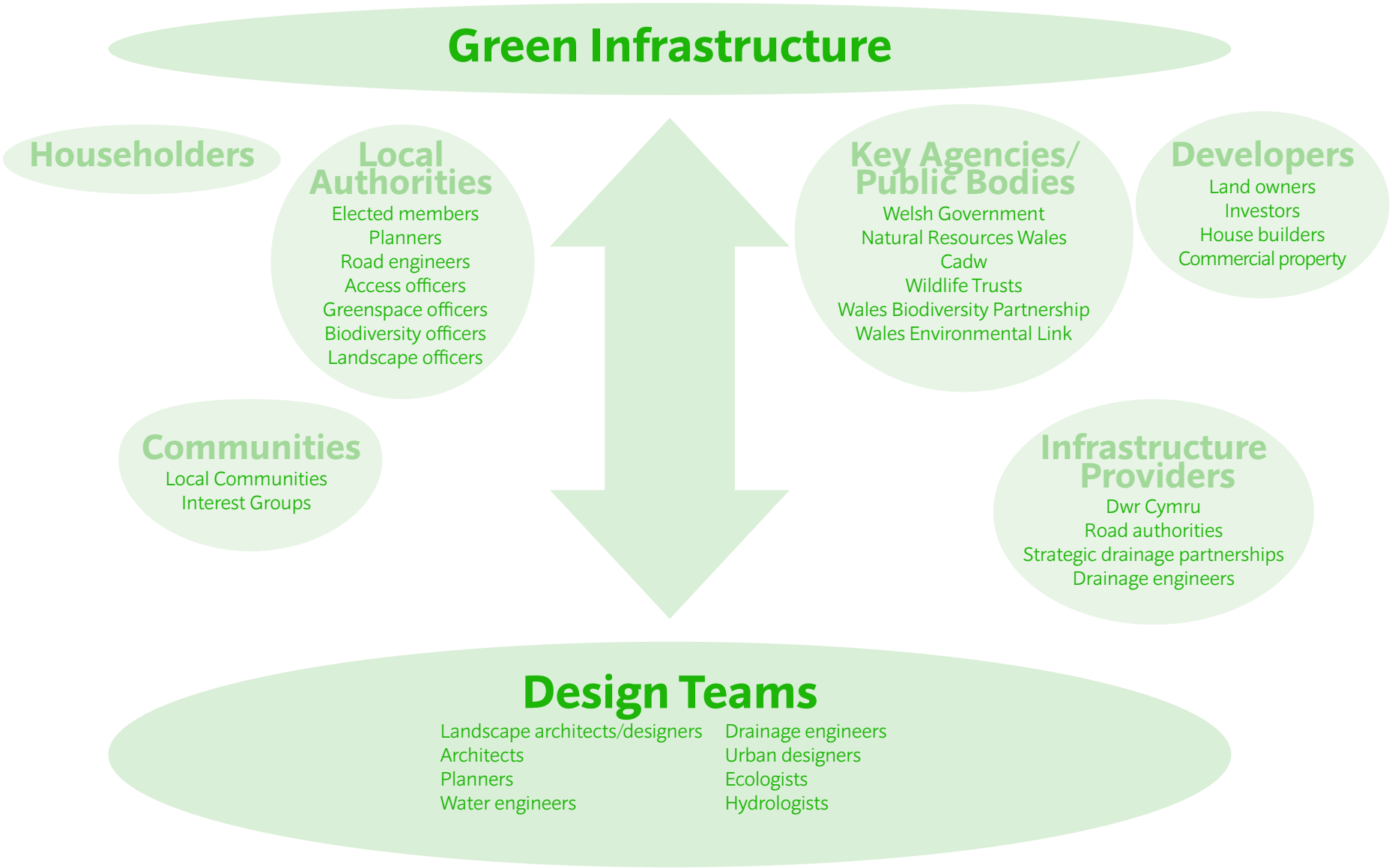
**GIS Database of GI Assets**

1.2.6 A comprehensive and user-friendly GIS Database of GI assets and related information is held by the Council, which provides a tool for informing land use planning and land management decision-making with regards to GI.

1.2.7 The Green Infrastructure Strategy will be kept under review by the Council and updated as necessary to have regard to changing circumstances.

**DIAGRAM 1.1** **Multidisciplinary Working**

(Adapted from *GI Design and Placemaking* (Scottish Government, 2011)



## 1.3 Links to Other Documents

1.3.1 The GI Strategy was informed by, and should be read in conjunction with, the other key relevant plans and strategies shown on **Diagram 1.2**. The GI Strategy also supports the Management Plan For Bannau Brycheiniog National Park 2023-2028 and the Wye Valley National Landscape AONB Management Plan 2021-26.

1.3.2 This GI Strategy should also be read in conjunction with the Council's Green Infrastructure Supplementary Planning Guidance adopted in April 2015. A number of other relevant guidance documents are interrelated with this GI Strategy. These are listed in **Box 1.1**.

1.3.3 A number of studies and assessments, carried out to inform the development of the adopted Local Development Plan, provide valuable baseline GI information in respect of the location, quality, quantity and accessibility of a range of GI assets/types (see **Boxes 1.2-1.5**). They also form an important starting point in terms of identifying local GI needs and opportunities.

### BOX 1.1 Links to Relevant Guidance

**Supplementary Planning Guidance**

| | |
|---|---|
| Green Infrastructure | MCC adopted this SPG in April 2015 to support the interpretation and implementation of GI policies S13 and GI1 of the adopted LDP. |
| Landscape Character | MCC adopted this SPG to support the interpretation and implementation of landscape policies S13 and LC5 of the adopted LDP |
| Planning Obligations | MCC intends to produce a Planning Obligations SPG (work in progress). The Interim Policy on the Approach to Planning Obligations (March 2013) sets out an approach to guide negotiations for Section 106 planning obligations between MCC and applicants. |
| Renewable Energy and Energy Efficiency | MCC adopted this SPG in March 2016 to support the interpretation and implementation of policies S3, S12, SD1, SD2 and DES1of the LDP. |

**Other Guidance**

| | |
|---|---|
| Monmouthshire's Countryside Access Improvement Plan 2020 – 2030 | This plan sets out an approach to providing and managing access to Monmouthshire's countryside for the benefit of all residents and visitors. |
| Countryside Access Design Guide (2012) | Intended to assist anyone installing countryside furniture on public rights of way (PRoW) and other access areas in Monmouthshire. |
| Rights of Way Network Condition & Opportunities Study (2017) | Sets out the condition of the County's Public Rights of Way network and opportunities for improving countryside access. |
| Public Rights of Way Biodiversity Action Plan (2011) | Aims to ensure that biodiversity is taken into account in the planning and carrying out of all maintenance operations, improvement schemes and other PRoW work. Sets out specific habitat and species action plans. |
| Gwent Levels Green Infrastructure Strategy (2017) | Provides an overarching long-term vision, principles and framework for the planning and delivery of GI through the Living Levels Landscape Partnership Scheme. |

## DIAGRAM 1.2 Links to Other Key Relevant Plans & Strategies

## BOX 1.2 Open Space Study

Sets out the results of an audit of all open space sites located within 13 settlements/ sub-areas in Monmouthshire. Findings relate to the quantity, quality and accessibility of sites/open space types. An assessment of provision against minimum standards is provided.

It should be noted that the definition given to natural/semi-natural greenspace differs to that in the Greenspace Study. This is likely to have a bearing on the levels of provision (surplus/deficiency) identified in the Study. Further advice can be sought from MCC (see **Appendix G**). The 2008 Open Space Study is being updated as part of the RLDP 2018-2033 process.

## BOX 1.3 Greenspace Study

Identifies potential greenspace sites, natural sites and accessible natural sites within a 2km buffer zone of 10 settlements/sub-areas in Monmouthshire. An analysis of provision and assessment of opportunities for improvement in relation to accessible natural greenspace is provided.

It should be noted that greenspaces were identified on the basis of available datasets, which suggests that additional sites may exist. Further advice can be sought from MCC (see **Appendix G**). The 2010 Greenspace Study is not being updated as part of the RLDP 2018-2033 process.

## BOX 1.4 Ecological Connectivity Assessment

Provides an objective assessment of semi-natural habitat connectivity in and around eight settlements/sub-areas in Monmouthshire. This forms the basis for identifying and informing future habitat management and creation opportunities.

The value of the Assessment's maps and the accuracy with which predictions can be made will be enhanced as the baseline datasets are verified. Further advice can be sought from MCC (see **Appendix G**). The 2010 Ecological Connectivity Assessment is not being updated as part of the RLDP 2018-2033 process. This will be superseded by the Nature Networks Ecological Opportunity Mapping for Gwent.

## BOX 1.5 Other Studies

| | |
|---|---|
| Landscape Sensitivity and Capacity Studies (2009/2010) and Landscape Sensitivity Update Study (2020) | These studies set out detailed assessments of sensitivity and capacity of local landscape character areas (around main settlements and villages) and candidate strategic sites. As part of the RLDP 2018-2033 process, an updated study was undertaken in 2020 to take into account settlement boundary changes due to new development. |
| Strategic Transport Study | Provides some baseline information relating to sustainable modes of transport and possible transport proposals around development sites. The 2009 Strategic Transport Study is being updated as part of the RLDP 2018-2033 process. |

**The landscape setting of Llanellen**


# 2

# The Green Infrastructure Approach


**Start of Wales Coast Path, Chepstow**

## 2.1 Local Policy Drivers

**Monmouthshire County Council Community & Corporate Plan 2022-2028**

2.1.1 The Community & Corporate Plan sets out MCC's ambition to become a zero-carbon county, while supporting the well-being of Monmouthshire's communities. Monmouthshire will be a:

- Fair place to live where the effects of inequality and poverty have been reduced
- Green place to live and work with reduced carbon emissions and making a positive contribution to addressing the climate and nature emergency
- Thriving and ambitious place, where there are vibrant town centres and where businesses can grow and develop
- Safe place to live where people have a home where they feel secure in
- Connected place where people feel part of a community and are valued
- Learning place where everybody has the opportunity to reach their potential.

2.1.2 These goals are underpinned by a series of actions that will shape the Council's medium-term financial spending plan and priorities, and includes a range of measures to enable progress to be monitored.

**Monmouthshire County Council Climate & Nature Emergency Strategy & Action Plans 2024**

2.1.3 This strategy and action plan was developed to meet the target to reduce the Council's carbon emissions to zero by 2030. Following community consultation, an action plan was published in November 2021 that includes actions under a range of themes:

- Reducing energy use - reducing the amount of energy that is used for buildings and street lighting
- Using renewable energy - speed up the move from fossil fuels to renewable energy
- Supporting nature recovery and managing green spaces - absorb carbon to support biodiversity and ecosystem resilience, and the ability to adapt
- What we buy - reducing carbon by thinking carefully about when and what we buy and whole life costs
- Reducing waste - by encouraging people to reduce, re-use and recycle more
- Walking and cycling - encouraging and making it easier for people to walk and cycle rather than drive
- Greener vehicles - reducing the impact of vehicle use and encouraging use of electric and hydrogen vehicles
- Public transport - encouraging people to use public transport rather than cars
- Education and involvement - helping people understand climate change and what they can do to make a difference
- Climate adaptation - preparing and adapting for the impact of climate change

**Monmouthshire County Council Biodiversity & Ecosystem Resilience Forward Plan 2024**

2.1.4 The Plan was first published by the Council in 2017 to meet the Section 6 Biodiversity and Ecosystem Resilience duty of the Environment (Wales) Act 2016, and to provide a mechanism for maximising the Council's contributions to the Well-being of Future Generations (Wales) Act 2015 Well-being Goals. Progress was reported to Welsh Government in 2019 and 2023, and a refreshed Plan was published in 2024 (prior to a further round of reporting, expected in 2025).

2.1.5 The Forward Plan considers the current biodiversity and ecosystem resilience of Monmouthshire's relevant habitats and species of principal importance for nature conservation, and sets out ways in which the Council can influence biodiversity and ecosystem resilience when exercising its functions as a Public Authority. It considers conservation work that is already underway by the Council and other relevant organisations and identifies opportunities for enhanced delivery and improved governance.

The Usk Valley is an important ecological corridor within Monmouthshire

2.1.6 The Plan also highlights the importance of green infrastructure delivery to strengthening biodiversity and ecosystem resilience and its relationship to the Climate and Nature Emergency Strategy and other plans. The Plan will also identify actions and delivery mechanisms to meet the objectives during the period of 2023-2028.

**Monmouthshire County Council Nature Recovery Action Plan 2024**

2.1.7 The Local NRAP is a replacement of the Monmouthshire Local Biodiversity Action Plan (LBAP), published in 2005 by the predecessor to the LNP, Monmouthshire Biodiversity Partnership. The Monmouthshire Local Nature Recovery Action Plan (NRAP) is a guide to conservation work in Monmouthshire to deliver outcomes to benefit nature recovery. The plan aims to provide practical, achievable actions designed to help reverse the decline in biodiversity and build ecosystem resilience in Monmouthshire. We want to motivate communities to actively contribute to the effective restoration and protection of nature in Monmouthshire.

2.1.8 The Monmouthshire Local NRAP has been produced by the Monmouthshire Local Nature Partnership (LNP). The LNP exists to co-ordinate, promote and record conservation actions to promote and enhance nature locally. The Monmouthshire LNP covers the local authority area of Monmouthshire County Council, excluding that in the Bannau Brycheiniog National Park which has a separate Local Nature Partnership and Local NRAP.

**Monmouthshire Public Service Board Well-being Plan**

2.1.9 Published by the Monmouthshire Public Service Board (PSB) in 2018, the Plan sets out four objectives for improving well-being:

1. giving children and young people the best possible start in life
2. working to improve prosperity in the county
3. making the most of the assets older people bring whilst ensuring their needs are met
4. maximising the benefits of the natural environment

### Monmouthshire Wellbeing Assessment 2022-2027

2.1.10 The Monmouthshire Well-being Assessment, is a comprehensive report aimed at understanding the well-being of the county and its communities. It uses a wide range of information to provide an evidence-based understanding of well-being in Monmouthshire, focusing on the strengths and assets of people and their communities. The assessment covers various areas of well-being and focuses on Gwent as a whole, Monmouthshire as a whole, and 5 local areas within Monmouthshire. The report is reviewed annually.

The grounds of Caldicot Castle provide accessible greenspace

### Gwent Public Service Board Well-being Plan

2.1.11 Informed by an assessment of the economic, social, environmental and cultural well-being of Gwent undertaken in 2021/22, the Gwent Public Service Board (PSB) Well-being Plan published in 2023 sets out actions to help improve well-being across the region. The Plan sets out what the PSB could do over the next five years to tackle the social, economic, environmental and cultural issues which affect well-being in Gwent under two objectives:

1. We want to create a fairer, more equitable and inclusive Gwent for all.

2. We want a climate-ready Gwent, where our environment is valued and protected, benefitting our well-being now and for future generations

### Pollinator Policy

2.1.12 A Pollinator Policy was adopted by MCC in 2014 in response to the Welsh Government's Action Plan for Pollinators to demonstrate the Council's commitment to change and in recognition of our role as land managers. Prepared in partnership with Bee Friendly Monmouthshire, the policy commits MCC to:

- Reduce mowing of road verges - safety cut only for first cut on A & B routes
- Reduce mowing of green spaces
- Urban wildflower planting in towns/villages in place of unsustainable flower beds
- Identify opportunities for development of meadows within open spaces
- Use the Bee Friendly Monmouthshire logo to raise awareness
- Monitor the effectiveness of changes

## Local Development Plan

2.1.13 This GI Strategy is intended to expand on policies S13 and GI1 (see **Box 2.2**) of the adopted Local Development Plan (LDP) 2011-2021, which are central to the protection and delivery of GI as part of development in the County.

2.1.14 The Preferred Strategy (2023) for the Replacement Local Development Plan (RLDP) 2018-2033 includes a proposed replacement for the adopted Strategic Policy S13 (see Policy S17 in **Box** 2.1).

**BOX 2.1 Strategic Policy S17 – Green Infrastructure, Landscape and Nature Conservation**

Development proposals will embrace the placemaking approach and incorporate Green Infrastructure assets and opportunities that are assessed, designed and managed to deliver a multifunctional resource; capable of delivering a wide range of social, economic, environmental and health and well-being benefits for local communities and the County as a whole, including climate change action, biodiversity action, mitigation and net gain.

Development proposals must:

Maintain, protect and enhance the integrity and connectivity of Monmouthshire's green infrastructure, landscapes, biodiversity, public rights of ways and heritage assets through the following key functions:

(i) Landscape setting and quality of place, by identifying, assessing, protecting and enhancing the distinctive landscape, historical, cultural, ecological and geological heritage, including natural and man-made elements associated with existing landscape character;

(ii) Biodiversity and resilient ecosystems by protecting, assessing, positively managing and enhancing biodiversity and geological interests, including designated and non-designated sites, protected and priority specifies and their habitats, and the ecological connectivity between them;

(iii) Greenspace provision, connectivity and enjoyment by ensuring the creation of accessible multifunctional interconnected spaces that offer opportunities for recreation and health and well-being;

(iv) Sustainable energy use;

(v) Local food production; and

(vi) Flood attenuation and water resource management.

Note: Policy wording may change post-deposit plan consultation

**BOX 2.2 Development Management Policy GI1 Green Infrastructure**

Development proposals will be expected to maintain, protect and enhance Monmouthshire's diverse green infrastructure network by:

a) Ensuring that individual green assets are retained wherever possible and integrated into new development. Where loss of green infrastructure is unavoidable in order to secure sustainable development appropriate mitigation and/or compensation of the lost assets will be required;

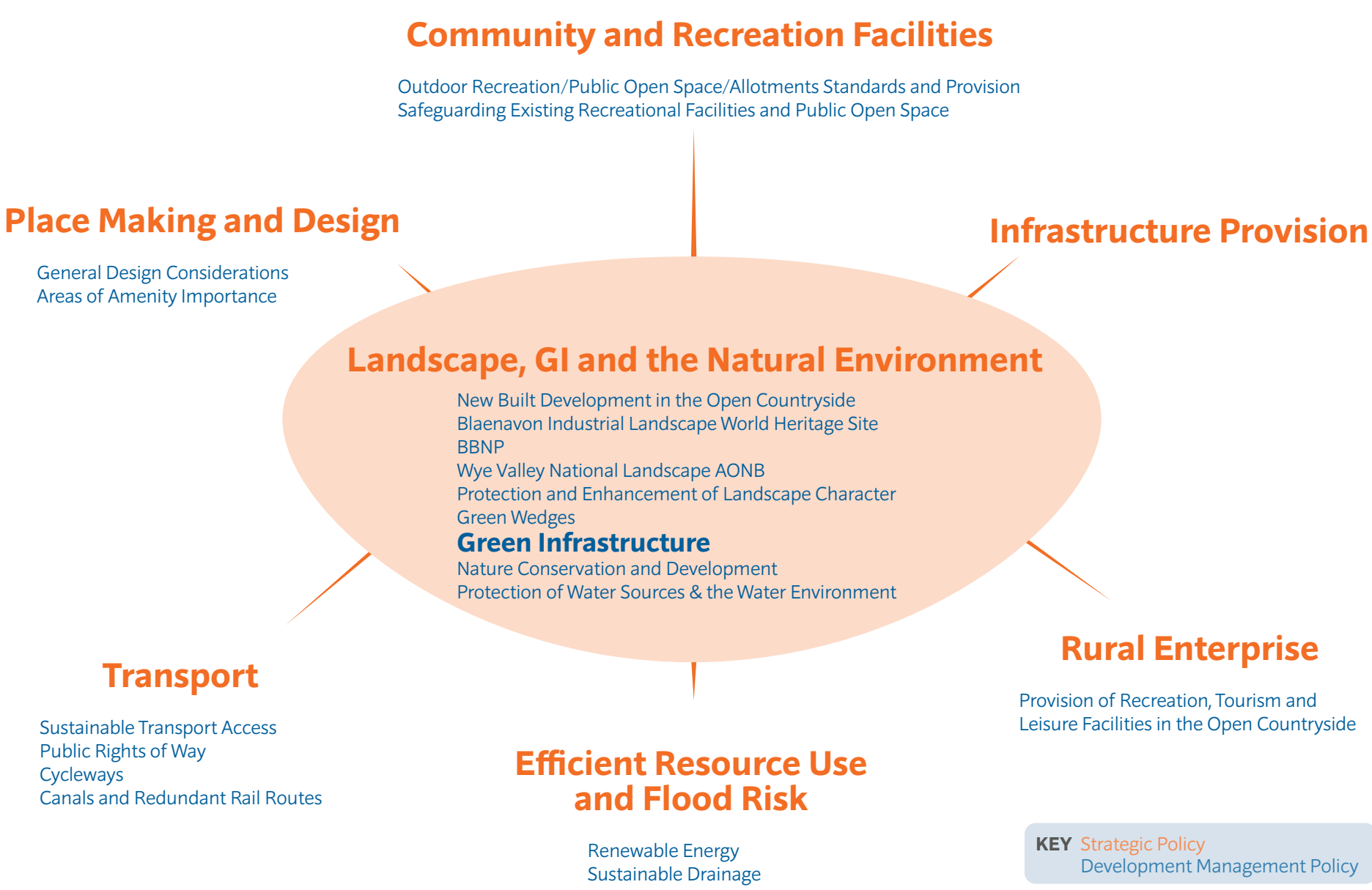
b) Incorporating new and /or enhanced green infrastructure of an appropriate type, standard and size. Where on-site provision of green infrastructure is not possible, contributions will be sought to make appropriate provision for green infrastructure off-site.

**Residential development in Rogiet incorporating a sustainable drainage system**

Note: Policy wording may change post-deposit plan consultation

2.1.15 These policies are supported by the adopted Green Infrastructure and Landscape Character Supplementary Planning Guidance. Other key adopted LDP policies that relate to GI are listed in **Diagram 2.1**.

**DIAGRAM 2.1** **Relevant adopted LDP Policies**



## 2.2 Regional Policy Drivers

2.2.1 Key strategies and plans that provide the regional framework for GI planning, delivery and management in Monmouthshire are listed in Box 2.3.

2.2.2 Of particular importance is the Gwent Green Grid Regional Green Infrastructure Strategy developed by the Gwent Green Grid Partnership (GGGP). The Partnership is working to improve the region's GI network and ensure its natural resources are healthy and resilient to change, and thereby better able to provide vital well-being benefits for current and future generations. Established in March 2020, the GGGP includes the five local authorities of Gwent (Blaenau Gwent, Caerphilly, Monmouthshire, Newport and Torfaen Councils) as well as Natural Resources Wales.

**BOX 2.3 Regional Plans and Strategies Context**

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|---|---|
| Gwent Green Grid Regional Green Infrastructure Strategy (2024) | This strategy aims to support the Gwent Green Grid Partnership's aspirations to improve the region's green infrastructure, which has a crucial role to play in addressing nature, climate change and health emergencies, as well as providing green job opportunities. It sets out a high-level, regional framework to support public bodies on the Gwent Public Service Board working in a collaborative, integrated and joined up way to discharge their duties under the Wellbeing of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 through a regional approach to green infrastructure delivery reflecting Welsh Government natural resources and planning policy.<br><br>The strategy is intended to act as a mechanism for green infrastructure delivery to support the Gwent Public Service Board's Well-being Plan, the Natural Resources Wales South East Wales Area Statement and the forthcoming Strategic Development Plan for Gwent. Crucially, the strategy aims to support a coordinated approach to green infrastructure project development, funding and delivery through a set of strategic action plans. These are intended to support a range of positive well-being outcomes for Gwent's communities, particularly within urban communities experiencing health inequalities. |
| NRW South East Wales Area Statement (2020) | Developed in response to the national Natural Resources Policy through a collaborative process involving local stakeholders, the South East Wales Area Statement covers the Local Authorities of Blaenau Gwent, Caerphilly, Monmouthshire, Newport and Torfaen. The South East Wales Area is also referred to as Gwent.<br><br>The Area Statement sets out landscape-scale nature-based solutions to addressing the increasingly complex and widespread environmental, social and political challenges that transcend traditional management boundaries. It aims to inform internal and external planning and help stakeholders to consider different ways of working together. To ensure everyone involved in the Area Statement process is thinking of South East in the same context, four strategic themes are used to investigate and understand place:<br><br>1. Linking Our Landscapes.<br>2. Climate Ready Gwent.<br>3. Healthy Active Connected.<br>4. Ways of Working. |
| Gwent Public Service Board Regional Well-being Plan (2023) | The Gwent Public Service Board (PSB) carried out its Assessment of the economic, social, environmental and cultural wellbeing of Gwent in 2021/22. The PSB have used the information from the assessment to create its Well-being Plan to help improve well-being across the region.<br><br>The Plan sets out what the PSB could do over the next five years to tackle the social, economic, environmental and cultural issues which affect well-being in Gwent.<br><br>The PSB has identified two objectives:<br><br>1. We want to create a fairer, more equitable and inclusive Gwent for all.<br>2. We want a climate-ready Gwent, where our environment is valued and protected, benefitting our well-being now and for future generations.<br><br>The Gwent PSB Well-being Plan was published in August 2023. |

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|---|---|
| South East Wales Strategic Development Plan (forthcoming) | All Strategic Development Plans (SDPs) and Local Development Plans (LDPs) prepared in Wales now have to be in general conformity with Future Wales: The National Plan 2040.<br><br>The South East Wales SDP was the first SDP in Wales to formally commence preparation in 2022. This introduces a tier of regional planning to address matters extending beyond Local Authority boundaries.<br><br>As a cross-boundary asset, strategic GI lends itself well to a more regional scale of planning. SDPs may provide a mechanism through which to consider regional scale planning for connections and larger, strategic GI assets. |
| Gwent State of Nature Report (2021) | The Greater Gwent State of Nature report, produced in 2021, looks at the status and trend of 100 species found within Greater Gwent, providing a snapshot of biodiversity status, trends and threats in the wider area.<br><br>The species included are a wide selection from different groups and different habitats, chosen with the aim of providing a snapshot that represents much of the biodiversity that is to be found within the diverse Gwent region. A secondary aim of this report is to examine the availability of biological data at the regional level; to demonstrate what can be shown with the wealth of data that has already been collected; and to highlight where there are knowledge gaps or data issues. |

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|---|---|
| Greater Gwent Nature Recovery Action Plan (GGNRAP) (2021) | Developed by the Resilient Greater Gwent Partnership in 2021, the GGNRAP provides a 10-year plan for guiding public bodies in taking action to support nature recovery by creating a resilient and connected ecological network at a regional scale across Gwent.<br><br>The GGNRAP has been developed to both inform and support the integration between the national and local NRAPs, which are being developed for each Local Nature Partnership (LNP) to support cohesive joined up approaches when developing and delivering strategies plans and actions<br><br>The GGNRAP's aims are relevant to GI delivery, namely:<br><br>• Ecosystems that are functioning and resilient<br>• Increased diversity of species and habitats<br>• People connected with nature<br>• Reduction of pollution and invasive non-native species<br>• Partners that are working better together |
| Green Infrastructure Action Plan for Pollinators in South East Wales (2015) | The Action Plan was commissioned by Monmouthshire County Council on behalf of Monmouthshire, Blaenau Gwent, Caerphilly and Torfaen Councils. Published in 2015, the Action Plan is part of the wider Pollinators for Life project funded by Welsh Government's Nature Fund, which aims to address the decline in Welsh biodiversity through landscape-scale projects.<br><br>Action Plans for pollinators are provided for different green infrastructure types of publicly owned land, which include for example school grounds; roadside verges; civic spaces; allotments and community gardens; and public parks. Many actions relate to changes to management regimes for the benefit of pollinators such as cutting grass to different heights and/or at different times of the year. Some actions require more extensive changes such as development of wildflower meadows or formal planting areas. |

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|---|---|
| Gwent Green Grid Green Corridors Strategic Access Action Plan (2024) | Developed by the Gwent Green Grid Partnership, the Action Plan provides a strategic approach to delivery of improved and sustainable countryside access by public bodies and stakeholder organisations working collaboratively across local authority boundaries in Gwent to:<br>• Enable people to lead active healthy lifestyles<br>• Provide economic opportunities<br>• Support local communities and volunteering<br>• Expand, where possible, the network available to cyclists and horse riders<br>• Provide sustainable and long-term solutions<br>It provides a framework for a clear strategic approach and stronger partnership working across the five local authority areas within the Gwent region, in relation to access planning and management. |
| Gwent Green Grid Woodland Priority Planting Action Plan | Developed by the Gwent Green Grid Partnership, the Action Plan provides a 10-year priority woodland planting and implementation programme to support public bodies and stakeholder organisations across the region in taking positive action to tackle climate change, through carbon storage and increasing the resilience of ecosystems to the risks from a changing climate.<br>It provides a framework for a consistent approach to woodland planting and management across Gwent. In addition to supporting Welsh Government's Woodlands for Wales Strategy and National Forest for Wales commitments, it provides a delivery mechanism for the South East Wales Area Statement, the Gwent PSB Well-being Plan and the Gwent Strategic Development Plan, as well as supporting local authorities' climate change action plans. |
| Upland Commons of South-east Wales Natural Resources Management Plan (2015) | The Plan is based on an ecosystems approach to the management of the uplands commons of South East Wales (encompassing parts of Torfaen, Blaenau Gwent, Caerphilly, Merthyr Tydfil, Monmouthshire and the Brecon Beacons National Park). The Plan identifies and informs the delivery of a portfolio of projects intended to restore important areas of upland habitat to favourable condition; enhance biodiversity; improve opportunities for sustainable grazing; identify innovative additional commercial uses including land-based products; support tourism development; and assist with climate change resilience by storing water and capturing carbon. |
| Wye Valley AONB Management Plan 2021-2026 | The Management Plan for the Wye Valley National Landscape AONB sets out the vision for the designated Area of Outstanding Natural Beauty (AONB) and the priorities for its management over a 5 year period. The Plan formulates Local Authority policy "for the carrying out of their functions in relation to" the management of the AONB. It also provides guidance to the local communities and many landowners, residents and visitors in the area. |
| Blaenavon Industrial Landscape World Heritage Site Management Plan 2018-2023 | The Plan identifies an overall vision and key principles for the management of the World Heritage Site, together with short-, medium- and long-term objectives. These are supported by a suite of policies for the continued effective protection, conservation, presentation and transmission of the Site's Outstanding Universal Value over the plan period (2018-2023). |

## 2.3 National Policy Drivers

2.3.1 The concept of a GI approach to land-use planning, design and management can deliver a wide range of policy outcomes (e.g. in relation to sustainable development, climate change, biodiversity, place-making, economic growth and health and well-being). It is well established through the Welsh spatial planning system and provides a means to bring together and deliver policy and advice messages in a holistic way. National legislation and policies that provide the framework for the conservation, delivery and promotion of GI in Monmouthshire are listed in **Box** 2.4.

### BOX 2.4 National Legislative & Policy Context

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|---|---|
| The Environment (Wales) Act 2016 | Section 4 of the Act sets out principles for promoting a joined-up and sustainable approach to the management of natural resources and ecosystem services in Wales. The Act places a duty (Section 6) on public bodies to prepare a Biodiversity and Ecosystem Resilience Forward Plan, demonstrating how they intend to deliver the plan in collaboration with other partners, taking into consideration the Nature Recovery Plan for Wales and the Well-being of Future Generations Act. Section 7 of the Act requires Welsh Government, in consultation with NRW, to publish a list of the organisms and habitats of principal importance (priority habitats), and take all reasonable steps to maintain and enhance this list, including encouraging others to do the same. |
| Natural Resources Policy (Welsh Government, 2017) | A statutory requirement of the Environment (Wales) Act, this sets out Welsh Government's policy for the sustainable management of Wales' natural resources to maximise their contribution to the goals of the Well-being of Future Generations Act. The Policy outlines three national priorities: delivering nature-based solutions; increasing renewable energy and resource efficiency; and taking a place-based approach. The Policy sets the context for the State of Natural Resources Report (SoNaRR) and Area Statements produced by NRW, which aim to ensure that the national priorities inform the approach to local delivery. |
| Wellbeing of Future Generations (Wales) Act 2015 | This Act seeks to improve the social, economic, environmental and cultural well-being of Wales. Public bodies must do what they do in a sustainable way and think more about the long term; work better with people and communities and each other; look to prevent problems; and take a more joined-up approach to delivering services and advice. Public bodies need to make sure that, when making their decisions, they take into account the impact they could have on people living in Wales. The Act includes GI related indicators for monitoring implementation, such as:<br>• Areas of healthy ecosystems in Wales.<br>• Status of Biological diversity in Wales.<br>• Percentage of surface water bodies, and groundwater bodies, achieving good or high overall status.<br>• Emissions of greenhouse gases within Wales.<br>• Levels of nitrogen dioxide (NO2) pollution in the air.<br>• The Ecological Footprint of Wales.<br>• Percentage of people feeling safe at home, walking in the local area, and when travelling. |
| Nature Recovery Plan for Wales (Welsh Government, 2015) | The Plan sets out how Wales will deliver the commitments of the UN Convention on Biological Diversity and the EU Biodiversity Strategy to halt the decline in biodiversity by 2020. It includes a strategy for our current and proposed action, particularly through the Well-being of Future Generations Act, and through the Sustainable Management of Natural Resources, will contribute to reversing the loss of biodiversity in Wales. Part 2 (updated 2020) of this plan is an Action Plan setting out those actions which have been specifically identified to meet objectives to reverse the decline of biodiversity. |
| Vital Nature: Making the Connections between Biodiversity and the People and Places of Wales (NRW, 2018) | Vital nature is NRW's strategic steer for biodiversity to 2022. It sets out NRW's priorities, direction of travel and ways of working with regards to delivering its Biodiversity and Ecosystem Resilience duties through the Sustainable Management of Natural Resources. Through a series of goals and commitments, it establishes a high-level framework for action in line with the Nature Recovery Action Plan for Wales. |

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| Future Wales 2040 | The National Development Framework sets out a 20-year land use framework for Wales. It will be reviewed every 5 years, and sets out where nationally important growth and infrastructure is needed and how the planning system can deliver it. It provides direction for Strategic and Local Development Plans and supports the determination of Developments of National Significance; sitting alongside Planning Policy Wales, which sets out the Welsh Government's planning policies and which will continue to provide the context for land use planning. It supports national economic, transport, environmental, housing, energy and cultural strategies and ensures they can be delivered through the planning system |
| Prosperity for All: A Climate Conscious Wales (2019) | Prosperity for All: A Climate Conscious Wales is the climate change adaptation plan for Wales. It sets out Welsh Government commitments to respond to the impacts from climate change we already see and those we expect to see in the future. The plan complements the steps to decarbonise the economy of Wales. The Plan shows how Welsh Government is taking action, over the next five years, to address the areas of greatest risk. This includes:<br>• protecting people, communities, buildings and infrastructure from flooding,<br>• protecting water supplies from drought and low river flows,<br>• tackling land management practices that exacerbate climate risks,<br>• managing risks to ecosystems and agricultural businesses. |
| Planning (Wales) Act 2015 | The Planning (Wales) Act provides the legislative framework for the operation of the planning system in Wales. It supports the delivery of national, local and community aspirations by creating sustainable places where citizens have improved access to quality homes, jobs and built and natural environments and supports the use of the Welsh language. |
| Natural Resources Wales State of Natural Resources Report (SoNaRR) for Wales 2020 | SoNaRR 2020 assesses how Wales is achieving the sustainable management of natural resources to improve Wales' well-being (Natural Resources Wales' purpose). It assesses Wales' progress against 4 aims and outlines opportunities for action for a sustainable future:<br>1. Stocks of natural resources are safeguarded and enhanced.<br>2. Ecosystems are resilient to expected and unforeseen change.<br>3. Wales has healthy places for people, protected from environmental risks.<br>4. Contributing to a regenerative economy, achieving sustainable levels of production and consumption. |
| Planning Policy Wales: Edition 12 (Welsh Government, February 2024) | Planning Policy Wales 12 (PPW 12) sets out the current land use planning policies of the Welsh Government. The core objective of national planning policy is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales as required by the Well-being of Future Generations (Wales) Act 2015.<br><br>In response to the need for addressing the nature emergency though the planning system, parts of Chapter 6 (Distinctive & Natural Places) of Planning Policy Wales Edition 11 were updated in October 2023 to strengthen national planning policy on GI, Net Benefit for Biodiversity, protection for Sites of Special Scientific Interest and Trees and Woodlands.<br><br>The main changes to national GI policy in PPW 12 include: stronger emphasis on taking a proactive approach to green infrastructure covering cross boundary considerations, identifying key outputs of green infrastructure assessments, the submission of proportionate green infrastructure statements with planning applications and signposting Building with Nature standards. See **Appendix E** for details. |

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| Welsh Government's Net Zero Strategic Plan (September 2022) | This Plan is the start of the journey to net zero and a greener, stronger, fairer Wales. It focuses on Wales' second carbon budget (2021–2025). The Plan brings together evidence and thinking from across the Welsh Government to outline priority decarbonisation initiatives out to 2030. Implementing them successfully will be required to reach net zero as an organisation and support the wider public sector to achieve a collective net zero |
| Technical Advice Note 5: Nature Conservation and Planning (Welsh Government, 2009) | Provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. Supplements Planning Policy Wales and should be read in conjunction with it. |
| Technical Advice Note 12: Design (Welsh Government, 2016) | Provides advice on good design. Supplements Planning Policy Wales and should be read in conjunction with it. |
| Technical Advice Note 15: Development and Flood Risk (Welsh Government, 2004) | Provides advice in relation to development and flooding, advising on development and flood risk as this relates to sustainability principles. Supplements Planning Policy Wales and should be read in conjunction with it. |
| Technical Advice Note 16: Sport, Recreation and Open space (Welsh Government, 2009) | Provides advice for communities, developers and local planning authorities in Wales preparing local development plans and taking decisions about planning applications with regards to sport, recreation and open space. Supplements Planning Policy Wales and should be read in conjunction with it. |
| Natural Heritage: a Pathway to Health (Countryside Council for Wales Policy Research for the Welsh Assembly Government, 2007) | Sets out the findings of a 12 month study into the impact of the natural environment on health and wellbeing, conducted by the Institute of Rural Health. The study found that the natural environment can play a key role in improving public health and wellbeing. |
| Community Grown Food Action Plan (Welsh Government, 2010) | Action Plan to promote, support and encourage opportunities for community grown food in Wales. |
| Active Travel Act Guidance (Welsh Government, 2021) | The guidance includes best practice on active travel infrastructure design and network planning, and gives advice on how to provide related facilities such as cycle parking. |

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| Active Travel (Wales) Act 2013 | The Active Travel (Wales) Act sets out provisions to make walking and cycling the preferred option for shorter journeys, particularly everyday journeys, such as to and from a workplace or education establishment, or to access health, leisure or other services or facilities. The 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. |
| Framework for South East Wales Networked Environmental Regions (CCW, EA Wales & Wales Environmental Link for Welsh Government, 2009) | First stage in a collaborative project to turn the concept of a Networked Environmental Region (NER) into reality. The report reviews the policy context, briefly describes the unique characteristics of the South East Wales landscape and considers opportunities and challenges across the city region. It also highlights the next steps needed towards implementing the NER. |
| Wales State of Nature Report 2023 | Leading wildlife organisations, including Wildlife Trusts Wales, have published a landmark State of Nature 2023 report. The report shows that nature is continuing to decline at an alarming rate across the UK, which is already one of the most nature-depleted countries in the world:<br>• 18% (one in six) of our species are at risk of extinction from Wales, including plants and animals such as Fen Orchid, Water Vole and Sand Lizard.<br>• The abundance of land and freshwater species has on average fallen by 20% across Wales since 1994.<br>• Of almost 3,900 species assessed, more than 2% are already extinct in Wales. |
| 30x30 Target | A global target to protect 30% of the planet for nature by 2030 (known as '30x30') was agreed at the Convention on Biological Diversity (CBD) at COP15. Countries are expected to contribute to this global goal through domestic action to increase coverage of effectively managed protected areas. More than 100 countries have now signed up to the commitment, including the UK. The Biodiversity deep dive: recommendations (Welsh Government, 2022) develops a set of collective actions to support meaningful delivery of the CBD '30 by 30' goal in Wales, recognising the capabilities present in Wales and reflecting duties and approach under the Wellbeing of Future Generations and Environment (Wales) Acts |

## 2.4 What is GI?

2.4.1 Chapter 6 (Distinctive & Natural Places) of Planning Policy Wales 12 defines GI as follows:

*'Green infrastructure is the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places.*

*Component elements of green infrastructure* (see **Box** 2.5) *can function at different scales and some components, such as trees and woodland, are often universally present and function at all levels* (see **Diagram 2.2**).

*At the landscape scale green infrastructure can comprise entire ecosystems such as wetlands, waterways, peatlands and mountain ranges or be connected networks of mosaic habitats, including grasslands.*

*At a local scale, it might comprise parks, fields, ponds, natural green spaces, public rights of way, allotments, cemeteries and gardens or may be designed or managed features such as sustainable drainage systems.*

*At smaller scales, individual urban interventions such as street trees, hedgerows, roadside verges, and green roofs/walls can all contribute to green infrastructure networks.'*

### BOX 2.5 Examples of GI Components/Assets

- Parks and gardens including urban parks; country and regional parks; formal and private gardens; and institutional (e.g. schools and hospitals) grounds (e.g Caldicot Country Park and the Linda Vista Gardens in Abergavenny).
- Amenity greenspaces including informal recreation spaces; play areas; outdoor sport facilities; housing green spaces; domestic gardens; village greens; urban commons; other incidental space; green roofs; hedges; civic squares and spaces; and highway trees and verges (e.g. Fairview open space Chepstow, Undy playing field and Dixton Field in Monmouth).
- Allotments, community gardens, city farms, orchards, roof gardens, and urban edge farmland (e.g. Usk Road allotments in Raglan and Sudbrook Road allotments in Portskewett/Sudbrook).
- Cemeteries and churchyards (e.g. Osbaston cemetery in Monmouth and St Mary's Churchyard in Abergavenny).
- Natural and semi-natural rural, peri-urban and urban greenspaces including woodland and scrub; grassland, heath and moor; wetlands; open and running water; brownfield sites; bare rock habitats (e.g. cliffs and quarries); coast and beaches; and Community Forests. It includes important and protected species and habitats such as existing national and local nature reserves and locally designated sites for nature conservation (e.g. Nedern Brook Wetlands SSSI and Fiddler's Elbow National Nature Reserve).
- Green corridors including rivers and canals and their banks; road and rail corridors; cycling routes; and public rights of way (e.g. Ifton Lane in Rogiet and the River Usk).
- Functional green space including sustainable urban drainage schemes and flood storage (e.g. residential development in Rogiet).
- Heritage sites including historic country estates; historic urban public parks; and historic sites and monuments (e.g. St Pierre near Chepstow and Abergavenny Castle and grounds).

Adapted from the Town and Country Planning Association: '*The essential Role of Green Infrastructural: Eco-towns Green Infrastructure Worksheet*' (2008).

## DIAGRAM 2.2 Range of GI Scales/Connectivity

Adapted from GI Design and Placemaking (Scottish Government, 2011)

2.4.2 Planning Policy Wales goes on to say:

*'Green infrastructure is capable of providing several functions at the same time and as a result offers multiple benefits, for social, economic and cultural as well as environmental resilience.*

*The components of green infrastructure, by improving the resilience of ecosystems* (see **Box** 2.6)*, can result in positive benefits to well-being including flood management, water purification, improved air quality, reduced noise pollution and local climate moderation, climate change mitigation and food production.*

*These benefits are important in urban environments where they can facilitate health and well-being related benefits of open space, clean air and improved tranquility, for example, as well as creating a sense of place and improved social cohesion. In addition, green infrastructure has a role in protecting local distinctiveness, providing economic benefits and social and community opportunities.'* (see **Box** 2.7)

2.4.3 Planning Policy Wales also notes the importance of building ecosystem resilience through the planning system. Ecosystem resilience is described by the State of Natural Resources report (2020) as:

*"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"*

2.4.4 PPW notes that the broad framework for building ecosystem resilience and securing a net benefit for biodiversity through the planning system includes addressing all of the following attributes which contribute to ecosystem resilience: Diversity, Extent, Condition, Connectivity and Adaptability[1] to change. Collectively these are known as the DECCA framework.

**BOX 2.6 Ecosystem Services**

- Supporting services - essential to the functioning of ecosystems and indirectly responsible for all other services (e.g. water and nutrient cycling, soil formation and the processes of plant growth)
- Regulating services - that help regulate the environment (e.g. pollination, flood management, pest and disease control, carbon sequestration, water, air and soil quality)
- Provisioning services - that provide resources and goods (e.g. food, fresh water, building materials, energy and fuel)
- Cultural services - that provide aesthetic, spiritual, religious, recreational or scientific enrichment (e.g. access to green space, tourism, distinctive places and mental wellbeing)

1 Note - the Monmouthshire NRAP refers to this as 'other Aspects' to recognise that adaptability is a function of the four key attributes

## BOX 2.7 GI Benefits

Adapted from GI Design and Placemaking (Scottish Government, 2011)

Wye Valley

### Local distinctiveness

- Improving townscape, landscape quality and visual amenity.
- Heritage preservation and cultural expression.
- Reinforcing the local landscape character.
- Making places more interesting and distinctive.
- Giving places character and a strong identity.

Monnow Bridge in Monmouth

### Economic

- Supporting a reduction in healthcare costs and increased productivity.
- Helping attract and retain a quality workforce.
- Supporting the local green economy.
- Reducing environmental costs such as those associated with the reduction of flood risk.
- Improving the image of a place.
- Boosting property values including house prices due to proximity to greenspace.
- Helping developers get the most out of the site by combining uses, e.g. open space & Sustainable Drainage Systems (SuDS), helping development viability.
- Attracting businesses and inward investors by creating attractive settings.
- Saving energy and money for residents and end users.
- Generating employment.

Cycling to work

### Climate change

- Reducing $CO_2$ emissions by providing non-vehicular travel routes and encouraging walking and cycling.
- Providing carbon storage and sequestration in vegetation.
- Providing shelter and protection from extreme weather.
- Managing flood risk: living roofs, large trees and soft landscape areas absorb heavy rainfall.
- Providing for storage of surface water in times of peak flow in SuDS and other water features.
- Cleaning and cooling the air, water and soil, countering the 'heat island' effect of urban areas.
- Saving energy: through using natural rather than engineered solutions.
- Saving energy: living roofs insulate buildings, and large trees provide shade, reducing the need for air.
- Conditioning in the summer and raising ambient temperatures in the winter, reduction in heating costs in the winter due to slowing of wind speeds in urban areas.
- Supplying locally sourced timber, biomass or other bio-fuels to replace fossil fuels.

## BOX 2.7 GI Benefits

(Adapted from GI Design and Placemaking (Scottish Government, 2011)

Countryside around Abergavenny

### Nature Recovery

- Protecting and enhancing biodiversity.
- Reducing pollution through use of SuDS and buffer strips.
- Providing new and linking existing habitats or natural features, to allow species movement and increase available habitat areas.
- Protecting aquatic species through appropriate management of waterside habitats.
- Preventing fragmentation of habitats.
- Allowing diverse habitats to be created which are rich in flora and fauna.

Tintern Old Station

### Community and social

- Improving community cohesion and social inclusion.
- Creating green spaces for socialising, interaction and events.
- More opportunities and places for children to play.
- Providing improved physical connections through green networks to get between places; and to communities, services, friends and family and wider green spaces.
- Providing spaces for practising and promoting horticultural skills.
- Creating opportunities for community participation and volunteering.
- Providing spaces for education and training.

Canoeing along the River Wye

### Health and well-being

- Encouraging exercise and physical activity by providing quality green spaces for walking, cycling, sports and play.
- Providing better opportunities for active travel and physical activity.
- Improving mental well-being by providing access to nature and attractive green spaces and breathing spaces.
- Providing opportunities for growing food locally and healthy eating.


Heritage sites

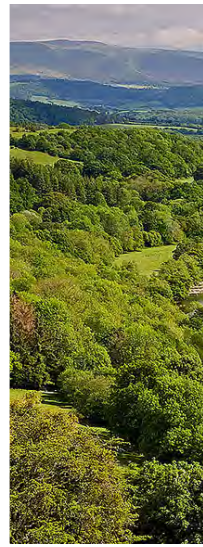

Private gardens


Allotments & growing spaces


Green walls

# GI ASSETS

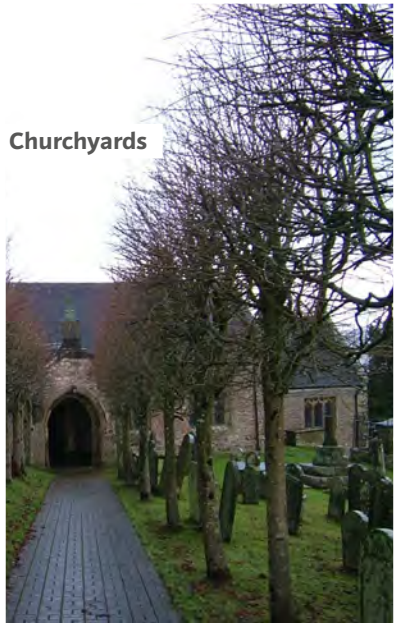

Community greenspaces

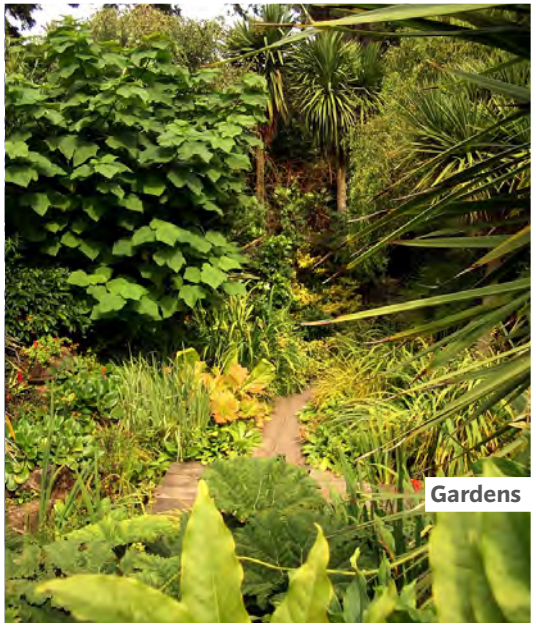



Grasslands, heaths and moors

# GI ASSETS


Village greens


Churchyards


Gardens


Play areas

## 2.5 Monmouthshire's Existing GI Network

2.5.1 This section provides an overview of Monmouthshire's existing GI network. A detailed assessment of existing GI assets within different parts of the County is provided in **Appendix D1**.

**Monmouthshire's GI network**

2.5.2 The County of Monmouthshire lies in South East Wales, between the major centres in South Wales and the South West of England and the Midlands. It covers an area of approximately 88,000 hectares and has an estimated population of 93,000 (2021 census). The main settlements are the three historic market towns of Abergavenny, Chepstow and Monmouth; Caldicot; Usk and Magor/Undy. The landscape is predominately rural with agriculture and tourism forming the main industries.

2.5.3 Monmouthshire is noted for its rural beauty and has a rich and diverse landscape stretching from the flat open coastline of the Gwent Levels in the south, to the exposed uplands of the Black Mountains in the north and the picturesque river corridor of the Wye Valley in the east (MCC, LDP). The Blaenavon Industrial World Heritage Site (WHS), Bannau Brycheiniog National Park and Wye Valley National Landscape AONB, landscapes of international/ national value, are all distinctive features which partly fall within Monmouthshire.

2.5.4 The County includes a wealth of biodiversity/nature conservation assets such as the Severn Estuary, Fiddler's Elbow National Nature Reserve, 68 Sites of Special Scientific Interest, 10 of which are designated as European Sites, 752 non-statutory Sites of Importance for Nature Conservation (SINC) and a wide range of species and important habitats. Monmouthshire is particularly well wooded with a range of extensive blocks of ancient, semi-natural, broadleaved and coniferous woodlands such as Trellech Forests, Hale Wood and Chepstow Park Woods. Numerous watercourses (and associated predominantly undeveloped floodplains) cross the County - the main rivers are the Usk, the Wye and the Monnow.

2.5.5 Despite the range of habitats across the county, the Monmouthshire Biodiversity and Ecosystem Resilience Forward Plan (2017) notes that '*the extent and quality of habitats in the County is largely reducing*'. In addition, a number of the European Sites are in unfavourable condition.

2.5.6 Monmouthshire also contains a rich built heritage and historic environment which includes conservation areas, historic parks and gardens, scheduled ancient monuments and approximately 2400 listed buildings. As well as those GI assets already described, the County comprises a range of open/ green spaces (e.g. allotments, parks and outdoor sport areas) located in and around the main settlements. There are also a number of existing 'Incredible Edible' sites and community orchards as well as the traditional allotment settings.

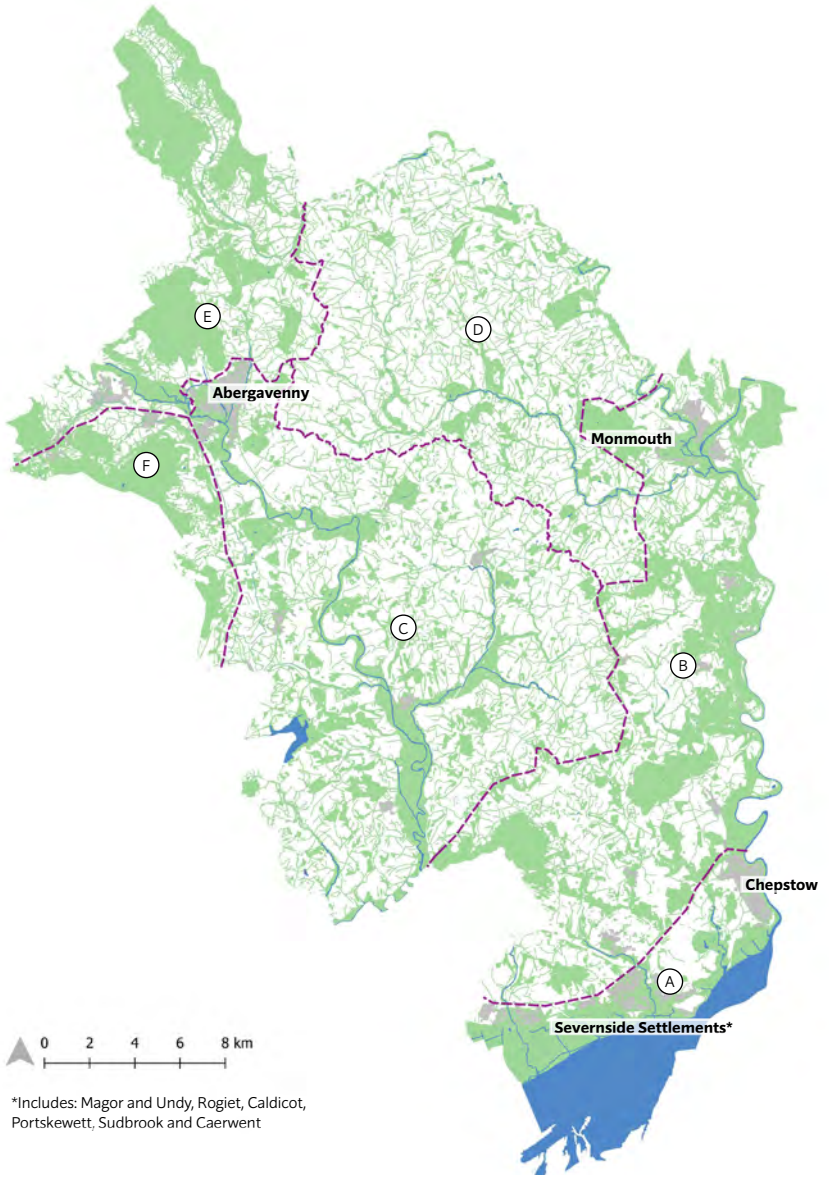
2.5.7 An extensive network of public rights of way provides a range of sustainable access routes for people (non-motorised users) and wildlife across Monmouthshire. It enables movement between settlements and GI assets, to the wider countryside and to amenities beyond the County boundary. This network is complemented by permissive paths, three long distance regional trails, a national trail and two national cycle routes. The All-Wales Coast Path also starts in Monmouthshire. Farmland, private gardens, street trees and other features (e.g. green roofs and SuDS) are other examples of GI assets in Monmouthshire.

2.5.8 As indicated by the above context analysis, Monmouthshire contains a wide range of GI assets. They include public and private assets, with and without public access. Grouped together they represent the County's existing GI network, the extent of which (based on available GI datasets) is shown in **Diagram 2.3**. It should be noted that this diagram only illustrates GI assets within Monmouthshire. However, it should be recognised that some 'landscape-scale' assets extend across administrative boundaries, such as the Wye Valley and the coastline. It is therefore of primary importance that GI is strategically planned to provide a comprehensive and integrated network at the strategic scale.

2.5.9 An assessment of the ecosystem services provided by Monmouthshire's GI assets within different parts (or GI Zones[1]) of the County is set out in **Appendix D2**.

1 The GI Zones reflect the Gwent Green Grid Sub-Areas identified by the Regional GI Strategy, which provide a spatial framework for strategic planning, management and delivery of GI within Gwent.

## DIAGRAM 2.3 Monmouthshire's Existing GI Network



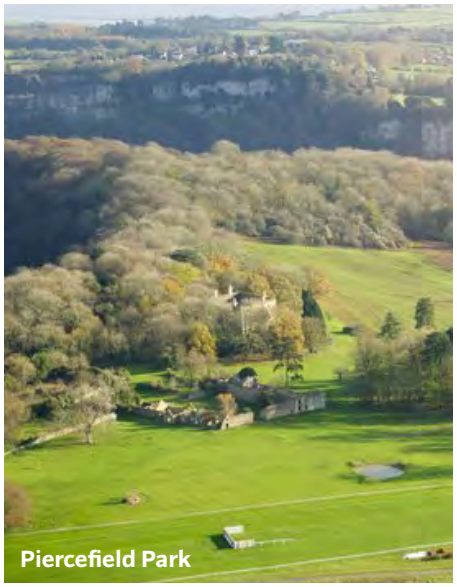

*Includes: Magor and Undy, Rogiet, Caldicot, Portskewett, Sudbrook and Caerwent

**Existing GI Network**

**GI Zones:**

**GI Zones:**

A: Gwent Levels
B: Wye Valley & Wentwood
C: Central Monmouthshire – South
D: Central Monmouthshire – North
E: Bannau Brycheiniog & Black Mountains
F: Eastern South Wales Valleys


Piercefield Park


Summit of Skirrid Fawr

The existing GI network represents GI assets defined by the following datasets: Greenspace Study (excluding non-natural greenspace), Open Space Study, county-wide public rights of way, county-wide designated sites of nature conservation value, county-wide designated features of historic value, county-wide watercourses and water bodies, predominantly undeveloped floodplains (flood risk areas), and county-wide woodlands. See Appendix B for details.

# 3

# Green Infrastructure Strategy

Skirrid Fawr, from the Sugar Loaf

## 3.1 General

3.1.1 Communities in Monmouthshire depend on the benefits provided by its natural systems to live and prosper. Over centuries, humans have developed methods of controlling the environment for their own benefit, such as channelling water by diverting rivers and draining the land for agriculture. These changes can result in unintended consequences elsewhere, such as flooding and habitat fragmentation. As a result, the long-term sustainability, resilience and capacity of natural systems in Monmouthshire to respond to environmental change and human pressures is at risk.

3.1.2 Careful planning and management is important in identifying interventions that maximise the multiple functions and benefits which integrated networks of GI can provide. There are opportunities for GI creation, enhancement and investment in Monmouthshire, which in turn can benefit local communities, the economy and the environment. This strategic framework identifies important elements of the GI network that require protection and management actions to improve their function or quality.

## 3.2 Vision for GI in Monmouthshire

3.2.1 The long-term aspirational vision for the future provision and management of GI in Monmouthshire is set out in **Box 3.1**.

3.2.2 The GI vision is underpinned by the following three core aims:

1. **Support health and wellbeing delivering strong communities and vibrant places; enriching people's lives through engagement and activity**
2. **Maintain and enhance biodiversity and support resilient ecosystems to address the nature and climate emergencies**
3. **Conserve, protect and enhance Monmouthshire's GI assets**

3.2.3 Together, the vision and three core aims provide the overarching framework for positive actions by all stakeholders involved in the future protection, management and enhancement of GI in Monmouthshire.

**BOX 3.1 Green Infrastructure Vision for Monmouthshire**

**Monmouthshire has a well-connected multifunctional green infrastructure network comprising high quality green spaces and links that offer many benefits for people and wildlife.**

**The network's integrity and connectivity is maintained, protected and enhanced in a planned and managed way, which recognises the interdependency and multifunctionality of landscape, heritage and biodiversity elements.**

**Investment in green infrastructure underpins the County's ongoing economic, social and environmental success by supporting sustainable growth, improving quality of life and place, delivering ecosystem resilience and tackling the nature and climate emergencies.**

**Monmouthshire is a green and healthy place to live, with an increasingly coherent and resilient ecological network of wildlife habitats, helping** to **conserve biodiversity.**

## 3.3 Strategic GI Objectives and Priorities

3.3.1 The GI Strategy's vision and core aims are supported by five strategic objectives and associated priorities for guiding the planning, management and delivery of GI in Monmouthshire (see **Box 3.2**). These objectives and priorities are reflected in the GI projects identified in the Delivery Plan (see Volume 2), and are also intended to be used in monitoring the outcomes of projects.

**BOX 3.2 Strategic Green Infrastructure Objectives**

1. **Improve Health & Wellbeing**
2. **Enhance Biodiversity & Increase Ecosystem Resilience**
3. **Increase Climate Change and Nature Resilience**
4. **Strengthen Landscape Character & Distinctiveness**
5. **Support Sustainable Economic Development**

**Provision of public open space**

3.3.2 The GI Strategy supports many of the national well-being goals (see **Box 3.3**) that public bodies have a duty under the Wellbeing of Future Generations Act to contribute to, in delivering sustainable development as defined in the Act - *to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs.*

**BOX 3.3 National Wellbeing Goals**

1. **A Prosperous Wales** – *an innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.*
2. **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).*
3. **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.*
4. **A More Equal Wales** - *a society that enables people to fulfil their potential no matter what their background or circumstances (including their socio-economic background and circumstances).*
5. **A Wales of Cohesive Communities** - *attractive, viable, safe and well-connected communities.*
6. **A Wales of Vibrant Culture and Thriving Welsh Language** - *a society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation.*
7. **A Globally Responsive 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.*

Well-being of Future Generations (Wales) Act 2015

3.3.3 In addition, the GI Strategy also promotes the following five "ways of working" advocated by the Wellbeing of Future Generations Act:

- Integration – it reflects a joined up approach to communities and people, the economy, the environment and culture.
- Long-term thinking – the Strategy aims to balance current and long-term needs for GI.
- Prevention – the GI Strategy encourages taking action now to prevent problems in the future.
- Collaboration – it promotes working with a range of stakeholders to meet its GI objectives
- Involvement – it involves people affected by actions in delivery of GI projects.

3.3.4 At a local level, the GI Strategy also seeks to contribute to the well-being objectives of the Monmouthshire Public Service Board Well-being Plan (see **Box 3.4**).

**BOX 3.4 Local Well-being Objectives**

1. **Provide children and young people with the best possible start in life**
2. **Respond to the challenges associated with demographic change**
3. **Protect and enhance the resilience of our natural environment whilst mitigating and adapting to the impact of climate change** (see **Appendix F** for details)
4. **Develop opportunities for communities and businesses to be part of an economically thriving and well-connected county**

Monmouthshire Public Service Board Well-being Plan (Monmouthshire PSB, February 2018)

3.3.5 The GI Strategy also supports the objectives of the Monmouthshire Biodiversity and Ecosystem Resilience Forward Plan (see **Box 3.5**) developed by the Council in line with its duties under the Environment (Wales) Act 2016.

**BOX 3.5 Monmouthshire Biodiversity & Ecosystem Resilience Forward Plan Objectives**

1. **Embed biodiversity throughout decision making at all levels**
2. **Provide nature-based opportunities to raise awareness, support health and well-being and encourage action for nature**
3. **Undertake land management for biodiversity and promote ecosystem resilience**
4. **Influence land management to improve ecosystem resilience**
5. **Tackle key pressures on species and habitats**
6. **Support landscape scale projects and partnerships to maximise delivery**
7. **Use improved evidence, understanding and monitoring to inform action**
8. **Monitor the effectiveness of the plan and review**

See **Appendix H** for full details

Monmouthshire Biodiversity & Ecosystem Resilience Forward Plan (MCC, February 2024)

Provision for biodiversity

### Objective 1 – Improve Health & Wellbeing

3.3.6 Contributing to improving the health and well-being of communities in Monmouthshire is a key objective for the GI Strategy.

3.3.7 The GI Strategy's priorities for improving the health and well-being of communities in Monmouthshire are:

- Helping people to live healthier and more fulfilled lives through improved access to outdoor opportunities for health and wellbeing.
- Promoting actions that enable and encourage local communities to use, manage and enjoy their local areas for health, wellbeing and community cohesion – with a particular focus on disadvantaged communities and active travel routes.
- Promoting opportunities for sustainable access and recreation that encourage healthy lifestyles and improve well-being for communities in Monmouthshire, including creating and improving safe and pleasant off-road walking and cycling routes.
- Access to GI assets via public rights of way, cycle routes and navigable waterways should be enhanced to maximise opportunities for urban communities and visitors to enjoy the Monmouthshire countryside.
- Provision of well-connected, multifunctional greenspaces close to urban communities in Monmouthshire to encourage physical exercise, and create community gardens/allotments and places for people to meet and interact.
- Support opportunities for community growing initiatives and local sourcing of food production
- Seek opportunities to improve air quality supporting interventions in key areas such as Chepstow, Usk, Abergavenny and across the Severnside area

3.3.8 This objective contributes towards National Wellbeing Goal 3 (creating 'A Healthier Wales' in respect of people's physical and mental well-being), Goal 5 ('A Wales of Cohesive Communities' in respect of creating well-connected communities) and Goal 6 (creating 'A Wales of Vibrant Culture and Thriving Welsh Language' in respect of participation in recreational activities).

3.3.9 This objective for improving the health and well-being of communities in Monmouthshire also contributes towards Local Wellbeing Objectives 1 and 3.

3.3.10 Subject to grant funding from the Welsh Government, the Regional Gwent Green Grid Partnership is proposing to produce a Health Impact Assessment of regional GI provision that will feed into local GI strategies.

| GI Strategy Objective | National Well-being Goals (see Box 3.3) | | | | | | | Local Well-being Objectives (see Box 3.4) | | | | Biodiversity & Ecosystem Resilience Forward Plan Objectives (see Box 3.5) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Objective 1 – Improve Health & Wellbeing | | | ♥ | | ♥ | ♥ | | ♥ | | ♥ | | | | | | | | | |

### Objective 2 – Enhance Biodiversity & Increase Ecosystem Resilience

3.3.11 Contributing to enhancing biodiversity and increasing ecosystem resilience in Monmouthshire is a key objective for the GI Strategy.

3.3.12 The GI Strategy's priorities for increasing biodiversity in Monmouthshire are:

- Implement the forthcoming Monmouthshire Local Nature Recovery Plan
- Improving ecosystem resilience through improved land management for biodiversity, utilising the step-wise approach advocated by PPW12, guiding decision makers in securing a net benefit for biodiversity.
- Promoting actions that work with a range of partners in Monmouthshire to deliver landscape scale interventions delivering multiple benefits (such as improving the habitat condition and connectivity of natural areas on or between protected sites and sites of importance for nature conservation; natural flood risk management opportunities; woodland creation; climate change adaptation and mitigation; and species specific management).
- Ecosystem services on which the prosperity and well-being of communities in Monmouthshire depend should be safeguarded and enhanced by an integrated approach to management of natural resources (as advocated by the GI Action Plan for Pollinators in South East Wales and Bee Friendly Monmouthshire's Hedgerow Manifesto).
- Increase opportunities for people to engage and reconnect with the intrinsic and cultural value of nature in Monmouthshire to provide health and well-being benefits.

3.3.13 This objective contributes towards National Wellbeing Goal 2 (creating 'A Resilient Wales' in respect of maintaining a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecosystem resilience and the capacity to adapt to change) and Goal 3 (creating 'A Healthier Wales' in respect of people's mental well-being by increasing access to nature).

3.3.14 This objective for enhancing biodiversity and increasing ecosystem resilience also contributes towards Local Wellbeing Objective 3.

3.3.15 This objective contributes towards all of the Monmouthshire Biodiversity and Ecosystem Resilience Forward Plan objectives.

| GI Strategy Objective | National Well-being Goals (see Box 3.3) | | | | | | | Local Well-being Objectives (see Box 3.4) | | | | Biodiversity & Ecosystem Resilience Forward Plan Objectives (see Box 3.5) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Objective 2 – Enhance Biodiversity & Increase Ecosystem Resilience | | ✓ | ✓ | | | | | | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

**Objective 3 – Increase Climate Change and Nature Resilience**

3.3.20 Contributing to increasing climate change resilience in Monmouthshire is a key objective for the GI Strategy.

3.3.21 The GI Strategy's priorities for increasing climate change and nature resilience in Monmouthshire are:

- Ensuring land and water in Monmouthshire is managed sustainably in an integrated way and reducing the risk from environmental hazards such as flooding and pollution.
- Adapt to and mitigate the potential effects of climate change by enabling Monmouthshire to be more resilient to the risk of flooding, drought and higher urban temperatures.
- Opportunities for local sustainable (small-scale) renewable energy generation and food production in Monmouthshire should be promoted to help mitigate climate change by reducing the area's carbon footprint.
- Consideration of the potential of GI to reduce flood risk through the restoration of natural flood plains and the increased use of sustainable drainage systems/rain gardens in urban areas.
- Promoting opportunities to improve ecological connectivity to support biodiversity.
- Promoting opportunities to improve resilience to invasive species, pests and disease as a result of climate change

3.3.22 This objective contributes towards National Wellbeing Goal 2 (creating 'A Resilient Wales' in respect of maintaining healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to climate change) and Goal 7 (creating 'A Globally Responsive Wales' in respect of making a positive contribution to global well-being by helping address the challenges of climate change locally).

3.3.23 This objective for increasing climate change and nature resilience in Monmouthshire also contributes towards Local Wellbeing Objective 3.

3.3.24 This GI objective will also contribute to delivery of the Monmouthshire County Council Climate and Nature Emergency Strategy & Action Plans 2024.

| GI Strategy Objective | National Well-being Goals (see Box 3.3) | | | | | | | Local Well-being Objectives (see Box 3.4) | | | | Biodiversity & Ecosystem Resilience Forward Plan Objectives (see Box 3.5) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **Objective 3 – Increase Climate Change and Nature Resilience** | |  | | | | |  | | |  | | | | | | | | | |

**Objective 4 – Strengthen Landscape Character & Distinctiveness**

3.3.16 Contributing to strengthening the landscape character and distinctiveness of Monmouthshire is a key objective for the GI Strategy.

3.3.17 The GI Strategy's priorities for strengthening the landscape character and distinctiveness of Monmouthshire are:

- Improving townscape character and visual amenity through integration of multi-functional greenspace into new development.
- Reinforcing local heritage and cultural identity through place-based solutions.
- Enhancing the distinctive character of Monmouthshire's landscape through an integrated approach to natural resource management (as highlighted in Objective 2).
- Protecting and restoring distinctive historic and semi-natural landscape features.
- Enhancing the condition of degraded landscapes where appropriate.
- Engaging local communities and visitors in appreciating and understanding the cultural and natural influences that shaped the character of the landscape.
- Reinforcing the strong sense of tranquillity, remoteness and wildness found within many places in Monmouthshire that makes a contribution to people's mental well-being.

3.3.18 This objective contributes towards National Wellbeing Goal 6 (creating 'A Wales of Vibrant Culture and Thriving Welsh Language' in respect of promoting and protecting culture, heritage and the Welsh language) and Goal 3 (creating 'A Healthier Wales' in respect of the mental well-being benefits for people from experiencing the special qualities of the Monmouthshire landscape).

3.3.19 This objective for strengthening the landscape character and distinctiveness of Monmouthshire also contributes towards Local Wellbeing Objective 3.

| GI Strategy Objective | National Well-being Goals (see Box 3.3) | | | | | | | Local Well-being Objectives (see Box 3.4) | | | | Biodiversity & Ecosystem Resilience Forward Plan Objectives (see Box 3.5) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **Objective 4 – Strengthen Landscape Character & Distinctiveness** | | | ✓ | | | ✓ | | | | ✓ | | | | | | | | | |

### Objective 5 – Support Sustainable Economic Development

3.3.25 Contributing to supporting sustainable economic development in Monmouthshire is a key objective for the GI Strategy.

3.3.26 The GI Strategy's priorities for supporting sustainable economic development in Monmouthshire are:

- Promoting the sustainable use of natural resources to support Monmouthshire's local green economy and develop skills and learning.
- Promoting actions that bring partners together to work with businesses in Monmouthshire to develop opportunities for delivering ecosystem services; improve resource efficiency and reduce energy consumption; identify opportunities and facilitate the sharing of resources between businesses; and re-localise the supply chain.
- Creating opportunities for new businesses/income generation, skills development and job creation in Monmouthshire from environmental land management and conservation, tourism and green technologies.
- Investing in the maintenance and enhancement of greenspaces and other GI assets that contribute to the environmental quality and distinctiveness of Monmouthshire's landscapes and settlements, helping attract and retain inward investment.
- Capitalise on the ability of ecosystems services provided by GI assets to alleviate local social and economic issues in Monmouthshire such as management of flood risk.
- Making appropriate provision for GI in the masterplanning of new developments in Monmouthshire that meets local needs, and is well designed and constructed to high environmental sustainability standards.
- Promoting the economic value of our public rights of way network/green corridors as an important investment in the future for the residents and visitors of Monmouthshire.

3.3.27 This objective contributes towards National Wellbeing Goal 1 ('A Prosperous Wales' in respect of creating an innovative, productive and low carbon society, developing a skilled and well-educated workforce and generating wealth and employment opportunities).

3.3.28 This objective for supporting sustainable economic development in Monmouthshire also contributes towards Local Wellbeing Objective 4.

| GI Strategy Objective | National Well-being Goals (see Box 3.3) | | | | | | | Local Well-being Objectives (see Box 3.4) | | | | Biodiversity & Ecosystem Resilience Forward Plan Objectives (see Box 3.5) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Objective 5 – Support Sustainable Economic Development | £ | | | | | | | | | | £ | | | | | | | | |

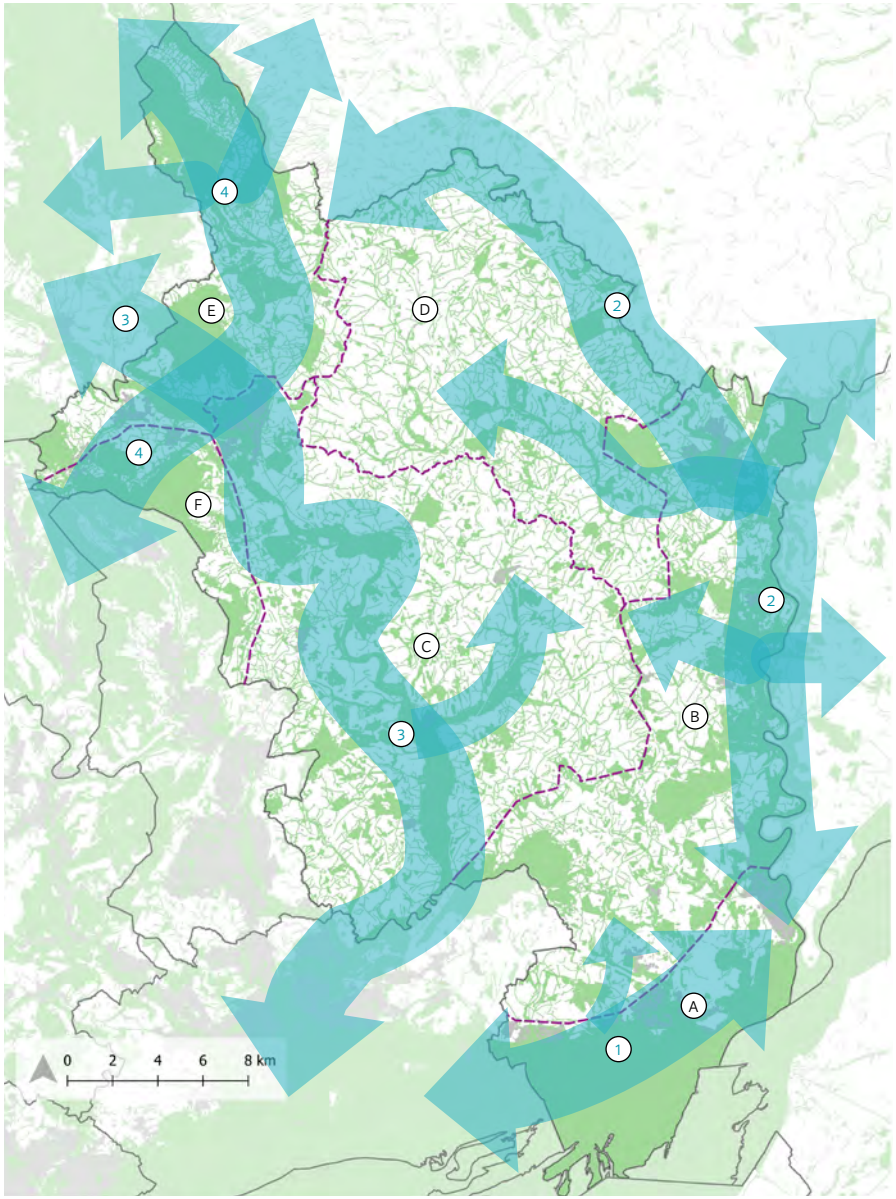
## 3.4 Monmouthshire's Strategic GI Network

3.4.1 The Strategic GI Network for Monmouthshire is illustrated conceptually on **Diagram 3.1**. The Strategic GI Network provides an overarching framework for GI planning, management and delivery across the County as an integral part of the wider Gwent Green Grid. The network embraces strategic GI corridors connecting GI assets within the County and in neighbouring areas, providing important GI links to Monmouthshire's main settlements.

3.4.2 Drawing on the detailed assessment of the GI Zones set out in **Appendix D3**, this section provides an overview of the strategic needs and opportunities for restoring, maintaining, creating and/or connecting GI assets to help strengthen Monmouthshire's Strategic GI Network for the future.

3.4.3 The GI Zones reflect the Gwent Green Grid Sub-Areas identified by the Regional GI Strategy, which provide a spatial framework for strategic planning, management and delivery of GI within Gwent.

**DIAGRAM 3.1 Monmouthshire's Strategic GI Network**




**Strategic GI Corridors:**
1: Gwent Levels/Coast
2: Wye Valley & Tributaries
3: Usk Valley & Tributaries
4: Bannau Brycheiniog Uplands

**GI Zones:**
A: Gwent Levels
B: Wye Valley & Wentwood
C: Central Monmouthshire – South
D: Central Monmouthshire – North
E: Bannau Brycheiniog & Black Mountains
F: Eastern South Wales Valleys

**Existing GI Network**

## GI Needs & Opportunities for Improving Health & Wellbeing

3.4.4 The County is generally well provided for in terms of accessible greenspace provision. However, there is an overarching **need** to enhance the connectivity of accessible greenspaces within the Strategic GI Network by improving access linkages, particularly to settlements; and to improve interpretation and promotion of existing assets, widening access to those who could most benefit from the County's accessible GI assets such as people with mental well-being challenges (particularly dementia) and physical/visual impairments.

3.4.5 The strategic GI **opportunities** in relation to improving the health and well-being of communities in Monmouthshire are:

- Reviewing and addressing gaps in and accessibility to the public rights of way network, particularly around settlements and their adjacent accessible greenspaces.
- Promoting existing accessible assets to ensure those who would most benefit from access to greenspaces can do so.
- Improving interpretation for existing accessible green infrastructure assets.
- Reviewing, improving and creating new health walks around the County and making rights of way accessible as possible to all as opportunities arise.
- Reconnecting people with nature through improved promotion and facilitation of volunteer/'Friends of' groups.
- Tree planting to improve air quality.

## GI Needs & Opportunities for Enhancing Biodiversity & Increasing Ecosystem Resilience

3.4.6 The County is generally well provided for in terms of natural greenspace and habitats. However, there is an overarching **need** to reverse the erosion and fragmentation of natural and semi-natural habitats in Monmouthshire, in order to reduce biodiversity loss, provide resilience to climate change and provide greater access to nature within the Strategic GI Network.

3.4.7 The strategic GI **opportunities** in relation to enhancing biodiversity and increasing ecosystem resilience in Monmouthshire are:

- Restoring or enhancing existing assets and habitats, providing management recommendations or support where habitats have been degraded, including the use of nature-based solutions.
- Encouraging and supporting the appropriate management of publicly owned land (including lease land e.g. county farms) and common land, to include where possible the creation, restoration and connectivity of flower-rich habitats to support and sustain pollinating insects.
- Ensuring that highways habitats are managed (by MCC and sub-contractors) sympathetically for biodiversity interest, following Codes of Best Practice and Llwybr Newydd i Natur – the Nature Recovery Action Plan for the Strategic Road Network, where appropriate.
- Where opportunities exist, promoting the benefits of high nature-value farming.
- Reconnecting people with nature via traditional and non-traditional eductation approaches.
- Maximising biodiversity benefits of projects through project design, retention of semi-natural habitats and long-term management for biodiversity.
- Identifying and promoting ecological connectivity in the landscape and utilising biodiversity opportunity mapping tools such as Buglife's Bee Lines.
- Produce and distribute clear practical advice to developers about how they can contribute to nature recovery and minimise the impacts on ecosystem resilience, utilising the step-wise approach advocated by PPW12.

### GI Needs & Opportunities for Increasing Climate Change and Nature Resilience

3.4.8 There is an overarching **need** to manage the water environment appropriately, to ensure biodiversity, flood management, water and soil quality are maintained and enhanced in a changing climate.

3.4.9 The strategic GI **opportunities** in relation to increasing climate change resilience in Monmouthshire are:

- Working in partnership with Dŵr Cymru Welsh Water (DCWW) and NRW, to achieve better flood risk management that reflects GI objectives.
- Increasing the use of SuDS and river buffer zones, helping to hold water back in the catchment and therefore helping to reduce runoff and flood risk.
- Increasing the use of SuDs in new developments where appropriate through implementation of Schedule 3 to the Flood and Water Management Act 2010, which establishes SuDS Approving Bodies (SABs) in local authorities and sets a statutory standard for the design, construction, operation and maintenance of SuDS (Sustainable Drainage Statutory Guidance, Welsh Government, 2019).
- Improve land management to benefit soils (for example, reducing frequency of grass cutting).

Creating and managing green spaces/habitats to absorb carbon and support biodiversity and ecosystem resilience.

### GI Needs & Opportunities for Strengthening Landscape Character & Distinctiveness

3.4.10 There is an overarching **need** to promote high quality design of new development to enhance the integrity and local distinctiveness of the County's landscapes and townscapes, and to encourage appropriate management of woodlands and grasslands that are of particular importance in defining the character of the County. There is also a need to understand, conserve and enhance the historic environment, which contributes significantly to landscape character in Monmouthshire.

3.4.11 The strategic GI **opportunities** in relation to strengthening the landscape character and distinctiveness of Monmouthshire are:

- Encourage effective place-making, supporting high standards of design, materials, energy efficiency, drainage and landscaping in all developments, to ensure that they complement and enhance the local landscape character and distinctiveness including scale and setting and minimise the impact on the natural environment. This should help to create more sustainable and resilient communities.
- Manage and maintain as appropriate the natural and semi-natural habitats that make Monmouthshire distinctive, including woodlands and grasslands.
- Researching, conserving and enhancing the historic environment and conserving archaeology.

## GI Needs & Opportunities for Supporting Sustainable Economic Development

3.4.12 There is an overarching **need** to support a sustainable farming and tourism industry, and appropriate sustainable housing development, in Monmouthshire in ways that deliver the supporting, regulating, provisioning and cultural services essential to the functioning of ecosystems.

3.4.13 The strategic GI **opportunities** in relation to supporting sustainable economic development in Monmouthshire are:

- Providing public benefits in the countryside through farming, working with farmers to support and advise them in sustainable agricultural practices, and appropriate changes to farm practices where necessary.
- Developing a coherent approach to the sustainable management of natural resources, including diversified agricultural land uses and increased renewable energy generation.
- Encouraging and supporting local producers to supply local food and to promote and encourage the use of local produce by public bodies, consumers, accommodation providers and local food outlets.
- Encouraging and supporting the development of the local green economy.
- Supporting actions which improve the image of places, especially with regard to the design of new development, being aware that inward investment is captured by attractive and diverse settings, and that property values can be boosted through proximity to green space.

# 4

# Settlement Green Infrastructure Networks

## 4.1 Introduction

4.1.1 The Monmouthshire Replacement Local Development Plan 2018-2033 Preferred Strategy (endorsed October 2023) focusses growth in and around the following key locations (see **Diagram 4.1**).

**Primary Settlements:**

- Abergavenny (including Llanfoist)*
- Monmouth*
- Chepstow*
- Caldicot (including Severnside Settlements)*

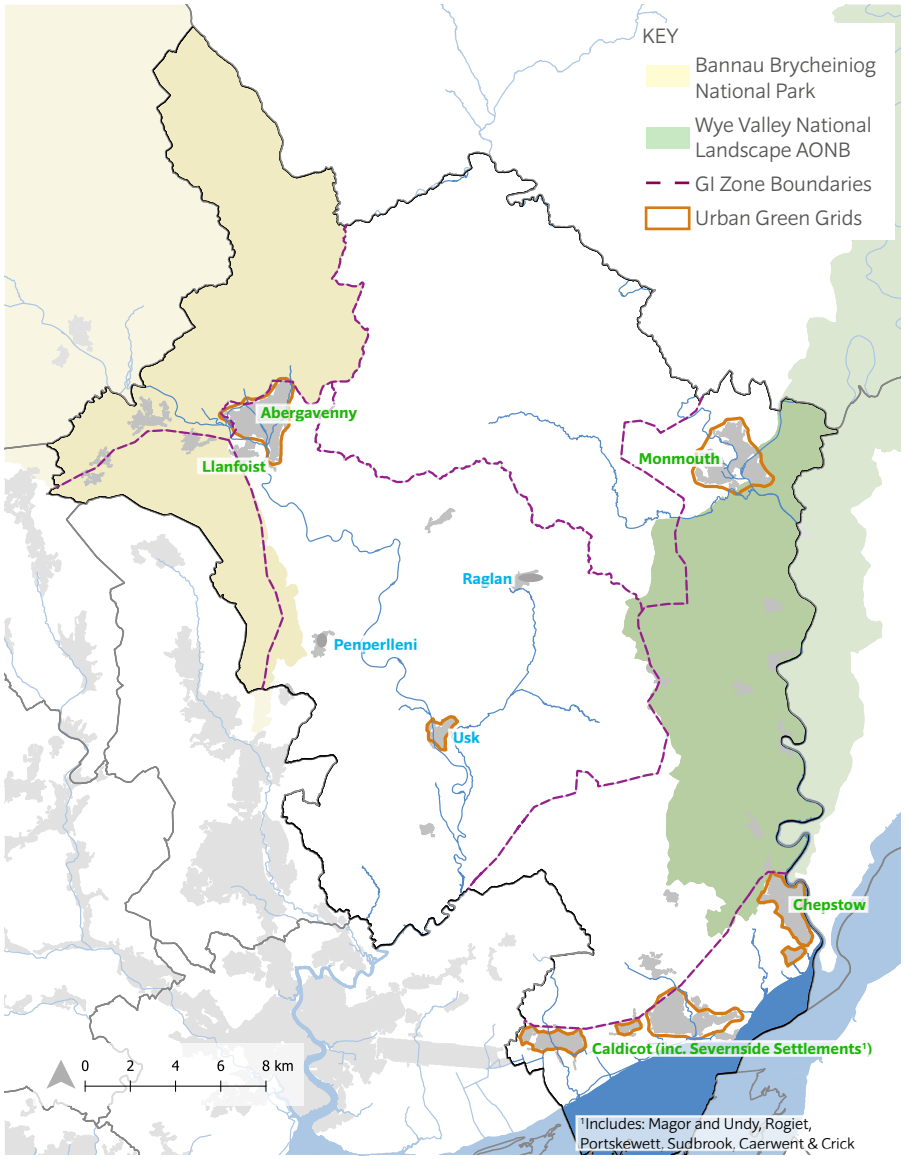
**Secondary Settlements:**

- Usk*
- Raglan
- Penperlleni

4.1.2 The settlements marked with an asterix (*) are identified in the Gwent Green Grid Regional GI Strategy as Urban Green Grids comprising multifunctional networks of green and blue infrastructure that thread through the built environment, weaving together urban green spaces in areas where people live and work with the wider countryside.

4.1.3 Set within the context of the Strategic GI Network for Monmouthshire illustrated on **Diagram 3.1**, the key opportunities for strengthening the GI Networks in and around the above settlements are highlighted in this section. Where appropriate, these opportunites are carried forward into the projects set out in the GI Delivery Plan (Volume 2).

**DIAGRAM 4.1 Key Growth Locations**



## 4.2 Abergavenny & Llanfoist

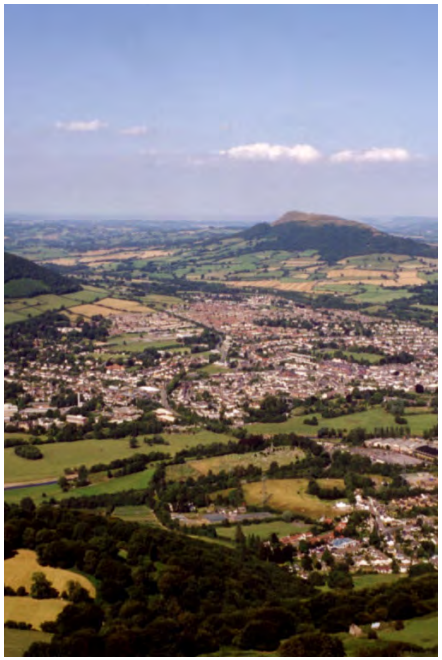
### GI Assets

4.2.1 The existing GI assets that provide the GI network in and around the settlements of Abergavenny & Llanfoist are shown on the GI Network Plan (see **Diagram 4.2**).

4.2.2 Abergavenny is a distinctive historic market town nestled within the Usk Valley, immediately outside the Bannau Brycheiniog National Park's eastern boundary. Its town centre is a conservation area containing many listed buildings, including the ruins of the Norman Abergavenny Castle. Together with nearby Llanfoist, it is overlooked and sheltered by the Blorenge and the Sugar Loaf mountains, located to the south-west and north-west respectively. The Blaenavon Industrial Landscape World Heritage Site stretches to the south-west.

4.2.3 Other key GI assets include:

- The River Usk (also a SAC) and its floodplain (to the south of Abergavenny), which includes accessible natural greenspaces such as Castle Meadows.
- The River Gavenny which flows through Abergavenny and the Monmouthshire and Brecon Canal situated to the south of Llanfoist.
- Historic parks/gardens including Bailey Park within Abergavenny, Abergavenny Priory Deer Park to the north and Coldbrook House to the south-east.
- Public Rights of Way and the Usk Valley Walk long distance path.
- Partly accessible woodlands such as Twyn-yr-allt and Deri-fach (also designated as SSSI and SAC) to the north and Coed-y-person to the south (designated as a SSSI).



**GI Opportunities**

4.2.4 Key opportunities for strengthening the GI network in and around the settlements of Abergavenny/Llanfoist through the restoration, maintenance, creation or connection of existing GI assets are also shown on the GI Network Plan (see **Diagram 4.2**). The key GI opportunities that would deliver the most significant benefits for people and wildlife are considered to be[1]:

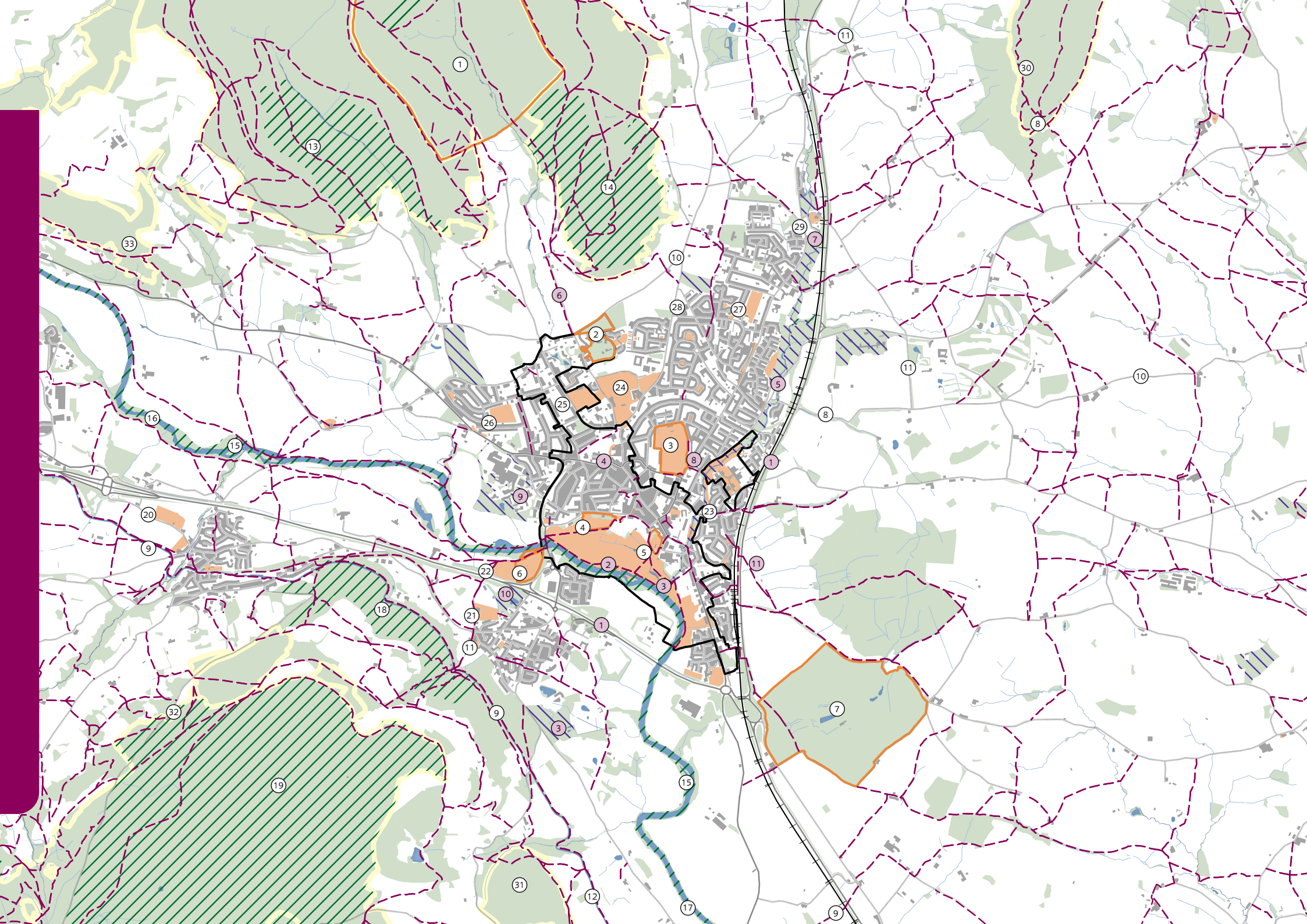
1. Strengthen the A465 and railway corridor, ensuring tree line and hedgerows are well connected and sensitively managed.
2. Improve the ecological quality and value of the green corridor adjacent to the River Usk.
3. Create and enhance links between the River Usk, River Gavenny, A465, A4143 and railway corridors with the semi-natural habitats around Llanfoist, including reinforcing connections to the nearby SINC, the Monmouthshire and Brecon Canal and the ancient woodlands.
4. Integrate trees in open green (grassed) space where appropriate[2] within the Abergavenny Conservation Area.
5. Implement the River Gavenny Project to deliver improvements for nature, identifying opportunities for habitat restoration, creation and improvements to the river health (such as understanding the significance of the culverts as barriers to wildlife dispersal and exploring potential options for reducing their fragmentary effects).
6. Form or strengthen ecological links between The Hill site and the Sugar Loaf ancient woodlands
7. Form or strengthen ecological links between the River Gavenny railway corridor and the woodland and watercourse near St Teilo's vicarage.
8. Enhance ecological connectivity between sections of the Afon Cibi in central Abergavenny with the trees and watercourse of Bailey Park, which itself could be better connected to the River Gavenny to its east.
9. Form or strengthen ecological links between patches of trees in and around The Knoll and Nevill Hall Hospital and also to the Nant Iago to the west, the A4143 corridor to the east and a block of woodland, semi-improved grassland and a small tributary of the River Usk to the south.
10. Increase access to rights of way and greenspaces between Abergavenny and Llanfoist that are currently not accessible.
11. Consider opportunities to incorporate GI into the Preferred Strategic Site Allocation at Abergavenny East, such as provision of pedestrian/cycle links and greenspaces for people, and ecological connections for wildlife.

4.2.5 Other general GI opportunities are:

- Improve the quality and value of the natural and semi-natural greenspace sites within Abergavenny, which at present is variable.
- Ensure ongoing sensitive management of grassland verges.
- Ensure hedgerows are sensitively managed and well-connected.
- Ensure blocks of semi-natural habitat and protected sites are sensitively managed and their extent increased where appropriate.
- Improve the quality of amenity greenspace in Abergavenny.
- Improve the quality and value of churchyards & cemeteries.
- Strengthen the major river corridors through Abergavenny. Ensure a buffer of semi-natural habitat with adjacent fields and the built landscape and where possible improve connectivity to nearby areas of semi-natural habitat. Consider improvements to the Usk Valley Walk.
- Enhance connectivity between the small patches of habitats in Abergavenny and distributed across the settlement. For example, linking the woodland and semi-improved grassland of Maindiff Court Hospital with the railway-A465 corridor to its north and west.
- Management of community spaces by 'friends of', or similar groups.
- Ongoing street tree planting and tree management in areas where losses have occurred, especially in the Conservation Area
- Ongoing tree planting and management in low value amenity space, including species for community orchards and pollinators.
- Interpretation to identify links and loops from key sites
- Identify opportunities to implement/retrofit SuDS systems, where appropriate, to help improve water quality

1 See Monmouthshire Open Space Study, Greenspace Study and Ecological Connectivity Assessments for more details

2 See Abergavenny Conservation Area Appraisal & Management Proposals (2016) for more details



## DIAGRAM 4.2 Abergavenny & Llanfoist GI Network Plan

### GI Assets

- Natural or Semi-natural Greenspace
- Statutory Biodiversity Designations
- Sites of Interest for Nature Conservation
- Watercourses/Waterbodies
- Historic Parks & Gardens
- Conservation Area
- Public Open Space
- Country Park
- Open Access Land (CRoW Act)
- Public Right of Way

**Statutory Biodiversity Designations**

13. Sugar Loaf Woodlands (Deri-fach Woodland) SAC & SSSI
14. Sugar Loaf Woodlands (Twyn-yr-Allt Woodland) SAC & SSSI
15. River Usk SAC
16. River Usk (Upper Usk)/Afon Wysg (Wysg Uchaf) SSSI
17. River Usk (Lower Usk)/Afron Wysg (Wysg Isaf) SSSI
18. Coed-y-person SSSI
19. Blorenge/Blorens SSSI

**Historic Parks & Gardens**

1. Abergavenny Priory Deer Park
2. The Hill
3. Bailey Park
4. Linda Vista Gardens
5. Abergavenny Castle
6. New Cemetery
7. Coldbrook House

**Public Open Space**

20. King George's Playing Field
21. Llanfoist/Llan-ffwyst Playing Field
22. Llanfoist/Llan-ffwyst Cemetery
23. St Mary's Church
24. Pen-y-pound (Football Ground, Sports Ground & Playing Field)
25. Cricket Ground
26. Cresta Road Recreation Ground
27. Mardy Recreation Ground
28. Playing Field on Old Hereford Road
29. St Teilo's Church with Bettws Chapel

**Open Access Land (CRoW Act)**

19. Blorenge/Blorens
13. Deri-fach Woodland
14. Twyn-yr-allt Woodland
30. Ysgyryd Fawr
31. Ffwd Wood
32. Woodland near to Coedytwyn
33. Graig

**Promoted Routes**

8. Beacons Way (Brecon)
9. Usk Valley Walk
10. Sustrans National Cycle Network Route 42
11. Sustrans National Cycle Network Route 46
12. Sustrans National Cycle Network Route 49

### GI Opportunities

(1) Green Infrastructure Opportunities - see text for details

## 4.3 Monmouth

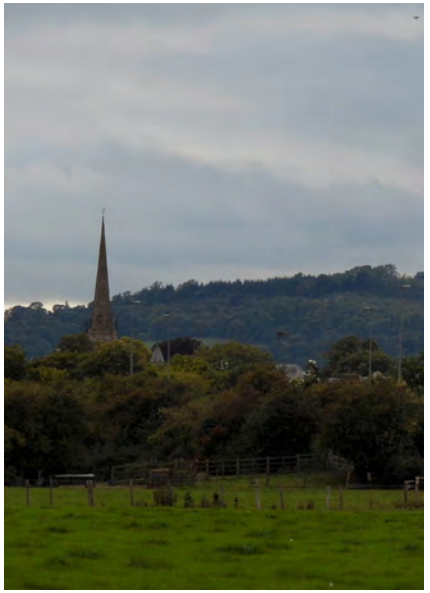
### GI Assets

4.3.1 The existing GI assets that provide the GI network in and around Monmouth are shown on the GI Network Plan (see **Diagram 4.3**).

4.3.2 The market town of Monmouth is situated at the confluence of the Rivers Monnow, Trothy and Wye, close to the Welsh border and adjacent to the Wye Valley National Landscape AONB's western edge. The town's castle, listed buildings, Norman bridge and Roman roads, all reflect its historic value. It is overlooked and sheltered by a number of partly accessible woodlands including Buckholt Wood, Hayes Coppices and Kingswood.

4.3.3 Other key GI assets include:

- Fiddler's Elbow National Nature Reserve (to the east) and Wonastow SINC.
- Accessible natural greenspace sites such as the Chippenham Recreational Ground in the centre of Monmouth, Vauxhall Fields, the Claypatch Wood, and the Millennium Field/allotment site adjacent to the River Wye.
- Public Rights of Way, included the promoted Wysis Way and Peregrine Path, and the Offa's Dyke Path National Trail and Wye Valley Walk long distance path. There are also a number of locally promoted circular walks.



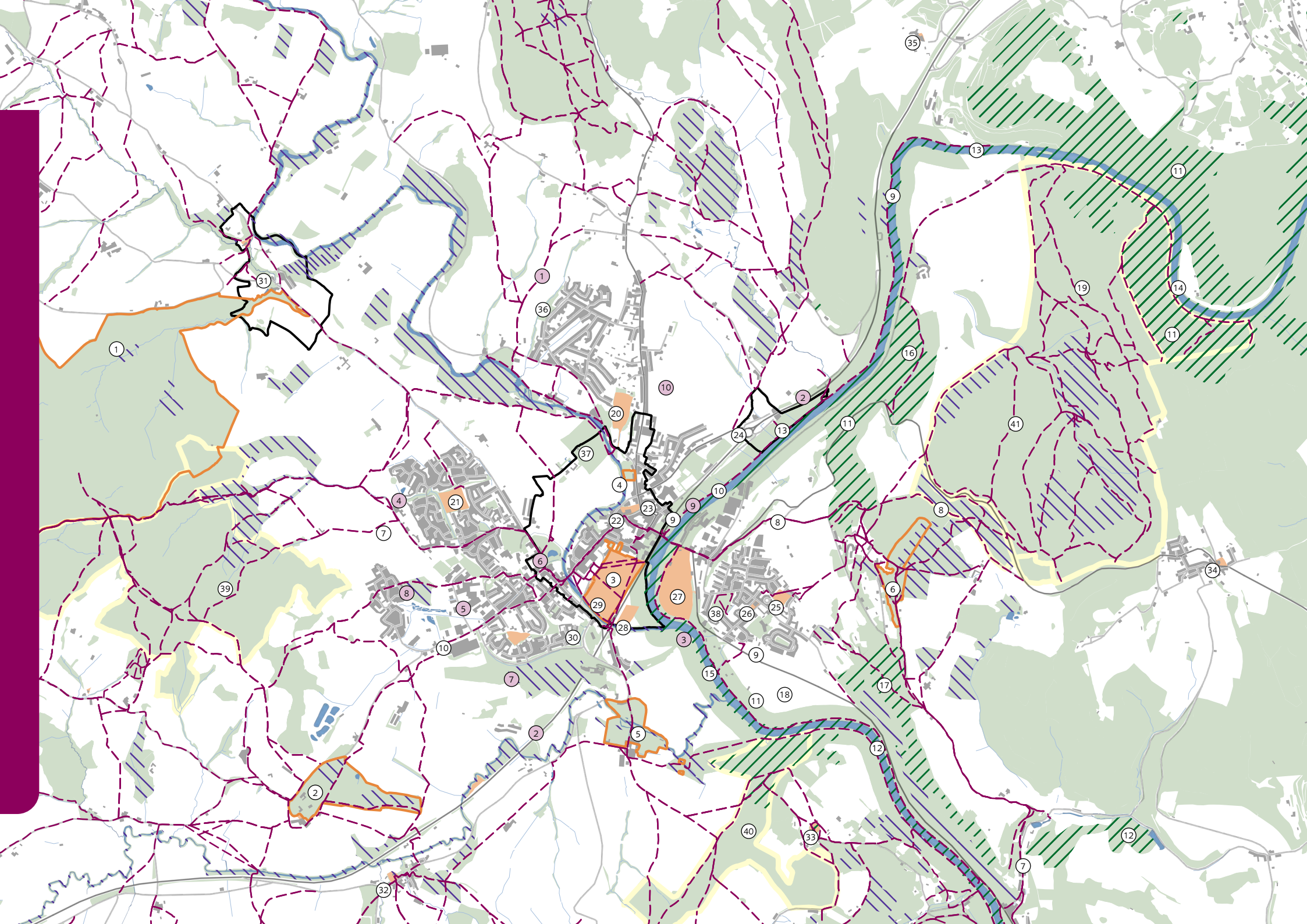
**GI Opportunities**

4.3.4 Key opportunities for strengthening the GI network in and around Monmouth through the restoration, maintenance, creation or connection of existing GI assets are also shown on the GI Network Plan (see **Diagram 4.3**). The key GI opportunities that would deliver the most significant benefits for people and wildlife are considered to be:

1. Improve provision and access to natural and semi-natural greenspace, particularly to the north of the town.
2. Ensure tree lines and hedgerows are well connected and sensitively managed, and ensure sensitive management of grassland verges along the A40 corridor.
3. Improve both ecological and pedestrian/cycle linkages of the disused viaduct with other nearby semi-natural habitats to further bolster corridors through the settlement.
4. Form ecological links between the central extensive green corridor dominated by the Rivers Wye and Monnow and other smaller habitat corridors (such as the Watery Lane watercourse, semi-improved grassland and ancient woodlands to the west of the settlement).
5. Form ecological links between the ditch, semi-improved grassland and woodland habitat in and around Wonastow Industrial estate.
6. Form ecological links between the northern tip of the Clawdd du ditch and the Wonastow road ditch, as well as improving connectivity between these sections of ditch and Drybridge pond and the 'fire station woodland' to the north.
7. Form ecological links between the western end of the Wonastow Road ditch and semi-improved grassland and St Dial's wood to the south. Opportunity to increase access to the MCC owned part of St. Dials Wood.
8. Form ecological links between Wonastow Field SINC and the ditch and semi-improved grassland to the south and Watery Lane to the north.
9. Improve and extend the Wye Valley Walk to make it accessible all the way from the Boat House to the Church
10. Consider opportunities to incorporate GI into the Preferred Strategic Site Allocation at Monmouth Leasbrook, such as provision of pedestrian/cycle links and greenspaces for people, and ecological connections for wildlife.

4.3.5 Other general GI opportunities are:

- Form links between the variety of small additional habitat patches scattered across the settlement.
- Improve the quality and value of open spaces in Monmouth.
- Improve the quality and value of natural and semi-natural greenspace sites in Monmouth.
- Ensure a buffer of semi-natural habitat with adjacent fields and the built urban landscape; and connect with near-by areas of semi-natural habitat where possible along the major river corridors. Extend this to include smaller watercourses, many of which are culverted through the residential zones of Monmouth.
- Ensure hedgerows are sensitively managed and well-connected.
- Ensure current blocks of semi-natural habitat and protected sites are sensitively managed and their extent increased where feasible or appropriate.
- Carry out works to prevent the loss of the Wye Valley Walk to bank and flood erosion along the Wye, whilst protecting sensitive habitats.
- Management of community spaces by 'friends of', or similar groups.
- Street tree planting in areas where losses have occurred, especially in the Conservation Area
- Tree planting in low value amenity space, including species for community orchards and pollinators.
- Continue to progress projects to improve pedestrian/cycle links between Wyesham and Monmouth, including the Iron Bridge and Beyond Cycle Link Project
- Interpretation to identify links and loops from key sites such as Chippenham Field.



## DIAGRAM 4.3 Monmouth GI Network Plan

### GI Assets

- Natural or Semi-natural Greenspace
- Statutory Biodiversity Designations
- Sites of Interest for Nature Conservation
- Watercourses/Waterbodies
- Historic Parks & Gardens
- Conservation Area
- Public Open Space
- Country Park
- Open Access Land (CRoW Act)
- Public Right of Way

**Statutory Biodiversity Designations**

11. Wye Valley Woodlands/Coetiroedd Dyffryn Gwy (Wales) SAC
12. Wye Valley Woodlands (England) SAC
13. River Wye/Afon Gwy (Wales) SAC
14. Upper Wye Gorge SSSI
15. River Wye (Lower Wye)/Afon Gwy (Gwy Isaf) SSSI
16. Fiddler's Elbow SSSI & National Nature Reserve
17. Harper's Grove-Lord's Grove SSSI
18. Livox Wood SSSI
19. Lady Park Wood National Nature Reserve (& Other Stat Access Land)

**Historic Parks & Gardens**

1. The Hendre, Llangattock-vibon-Avel
2. Wonastow Court
3. Chippenham Recreation Ground
4. Chapel House, Monmouth
5. Troy House, Monmouth
6. The Kymin

**Public Open Space**

20. Osbaston Cemetery
21. Rockfield Recreation Ground
22. St Mary's Church, Monmouth
23. Sports Facility
24. St Peter's Church, Monmouth
25. Playing Field, Wyesham
26. St James's Church, Wyesham
27. Sports Field
28. Allotments
29. Chippenham Recreation Ground & Sports Ground
30. Elstob Way Play Space
31. St Cenedlon's Church, Rockfield
32. St Michael's Church, Mitchel Troy
33. Penallt Old Church, Penallt
34. Other Sports Facility
35. St Swithin's Church, Gararew

**Other Open Spaces**

36. Lancaster Way Open Space
37. Vauxhall Field Amenity Green Space
38. Wyesham Road Community Woodland

**Open Access Land (CRoW Act)**

19. Lady Park Wood National Nature Reserve
39. Kings Wood
40. Livox Wood, Troypark Wood, Troy Orles and Church Hill Common
41. Lady Park Wood NNR & Highmeadow Woods (including Redding's Inclosure)

**Promoted Routes**

7. Offa's Dyke Path National Trail
8. Wysis Way
9. Wye Valley Walk
10. Sustrans National Cycle Network Route 423

### GI Opportunities

(1) Green Infrastructure Opportunities - see text for details

## 4.4 Chepstow

### GI Assets

4.4.1 The existing GI assets that provide the GI network in and around Chepstow are shown on the GI Network Plan (see **Diagram 4.4**).

4.4.2 The historic market town of Chepstow, once a wealthy port, is located on steeply sloping land at the mouth of the Wye Valley, immediately adjacent to the southern edge of the Wye Valley National Landscape AONB. The historic core of the town is centred around the castle, which overlooks the River Wye. The Wye meanders past Chepstow's eastern edge, eventually merging with the River Severn/Severn Estuary (designated as a SSSI, SPA, SAC and Ramsar) directly to the south of the town. Accessible woodlands including St Pierre's Great Wood and Great Barnets Wood are located to the west/north-west of the town.

4.4.3 Other key GI assets include:

- Accessible natural greenspaces within the town such as Warren Slade and Park Redding Woods and Bulwark Road Open Space.
- Public Rights of Way and the Offa's Dyke Path National Trail, Wye Valley Walk long distance path and Wales Coast Path.
- Piercefield Park, a designated historic park/garden to the north of Chepstow. Although mainly in private ownership, it is partly accessible by rights of way and an access agreement.

**GI Opportunities**

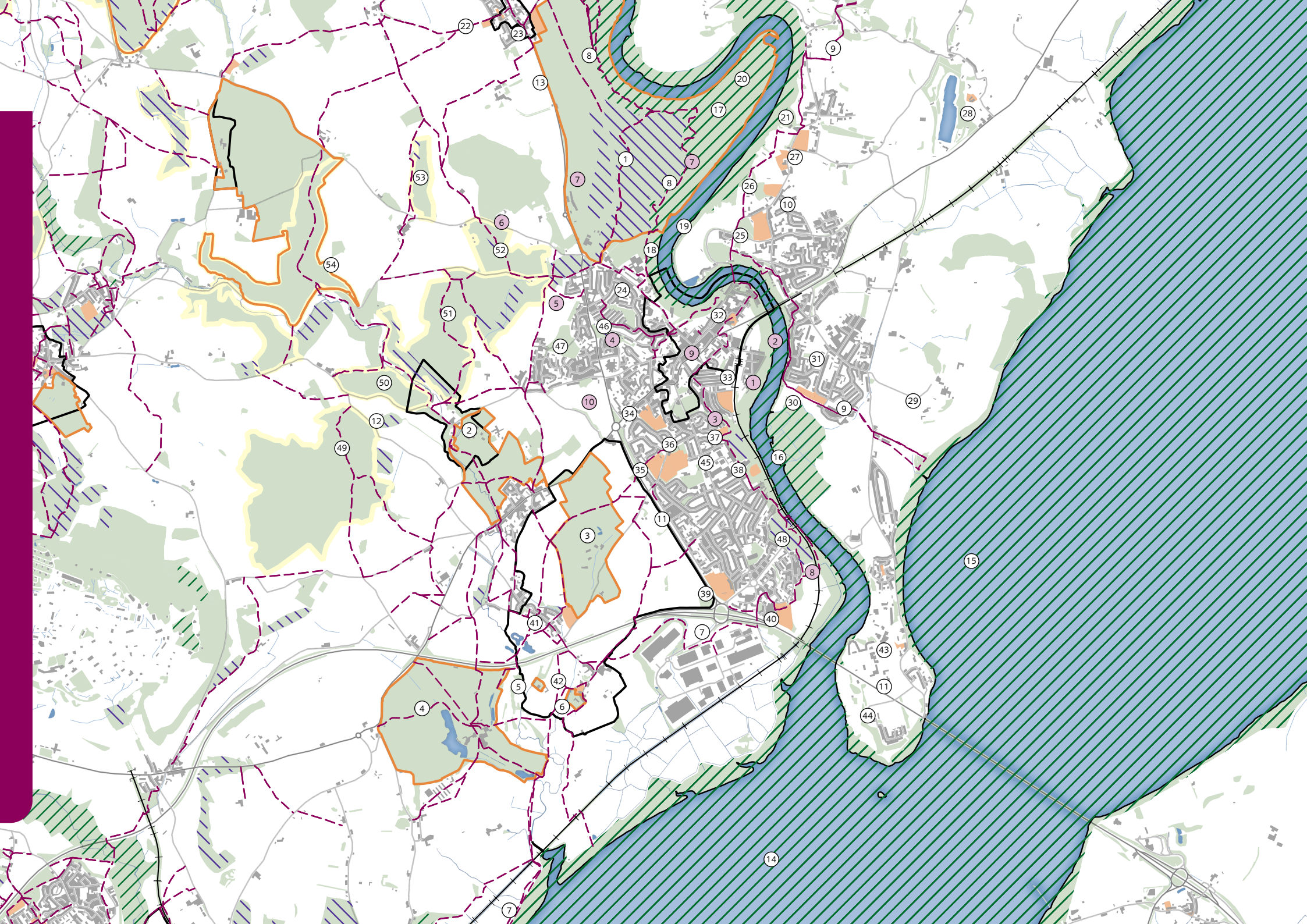
4.4.4 Key opportunities for strengthening the GI network in and around Chepstow through the restoration, maintenance, creation or connection of existing GI assets are also shown on the GI Network Plan (see **Diagram 4.4**). The key GI opportunities that would deliver the most significant benefits for people and wildlife are considered to be:

1. Continue to improve accessible greenspace access through opportunites generated by ongoing new development adjacent to the River Wye.
2. Improve accessible greenspace access for the centre of Chepstow adjoining the River Wye, where access to the river is limited.
3. Form or strengthen ecological links between the discrete groups of trees/ woodland scattered in and around Hardwick with one another
4. Form or strengthen ecological links between Parc Penterry grassland SINC to the north-west and Beaufort Quarry wood to the south east.
5. Form or strengthen ecological links between Parc Penterry SINC and Cockshoot Wood to its north west via enhanced connectivity with a strip of additional habitat patches (semi-improved grassland and trees) located mid-way between the two main habitat blocks.
6. Form or strengthen ecological links between Cockshoot Wood and Fryth Wood to its north.
7. Form or strengthen ecological links between Chepstow Racecourse grassland SINC to include additional patches of semi-improved grassland to the east and west, and beyond to the River Wye woodland corridor to the east and Fryth Wood to the west.
8. Form or strengthen ecological links between groups of trees/woodland patches near the outskirts of Chepstow town, and the railway and River corridor.
9. Consider landscape mitigatation of parking by increasing tree planting where appropriate in the Chepstow Conservation Area[1].
10. Consider opportunities to incorporate GI into the Preferred Strategic Site Allocation at Mounton Road Chepstow, such as provision of pedestrian/ cycle links and greenspaces for people, and ecological connections for wildlife.

4.4.5 Other general GI opportunities are:

- Improve the quality and value of amenity greenspaces in Chepstow.
- Where appropriate, improve the quality of natural and semi-natural greenspace sites in and around the town.
- Improve the quality and value, where approriate, of the cemeteries and churchyards in Chepstow.
- Strengthen the railway and motorway corridors, ensuring tree lines and hedgerows are well connected and sensitively managed.
- Improving cycle links, including considering a route connecting Chepstow to the Wye Valley.
- Ensure ongoing sensitive management of grassland verges.
- Ensure hedgerows are sensitively managed and well-connected with the wider hedgerow network and other semi-natural habitat features.
- Ensure blocks of semi-natural habitat and protected sites are sensitively managed and their extent increased where appropriate.
- Ensure ditches are sensitively managed.
- Ensure a buffer of semi-natural habitat with adjacent fields and the built urban landscape and connect with near-by areas of semi-natural habitat where possible along the River Wye corridor.
- Management of community spaces by 'friends of', or similar groups
- Street tree planting in areas where losses have occurred, especially in the Conservation Areas.
- Tree planting in low value amenity space, including species for community orchards and pollinators.
- Interpretation to identify links and loops from key sites.
- Tree planting to improve air quality

1 See Chepstow Conservation Area Appraisal & Management Proposals (2016) for more details



## DIAGRAM 4.4 Chepstow GI Network Plan

### GI Assets

- Natural or Semi-natural Greenspace
- Statutory Biodiversity Designations
- Sites of Interest for Nature Conservation
- Watercourses/Waterbodies
- Historic Parks & Gardens
- Conservation Area
- Public Open Space
- Country Park
- Open Access Land (CRoW Act)
- Public Right of Way

### Statutory Biodiversity Designations

14. Severn Estuary Wales SPA/SAC/SSSI/Ramsar
15. Severn Estuary (England) SPA/SAC/SSSI/ Ramsar
16. River Wye (Lower Wye)/Afon Gwy (Gwy Isaf) SSSI
17. Pierce, Alcove & Piercefield Woods SSSI
18. River Wye (Wales)/Afon Gwy (Wales) SAC
19. River Wye (England) SAC
20. Wye Valley Woodlands/Coetiroedd Dyffryn Gwy (Wales) SAC
21. Wye Valley Woodlands (England) SAC

### Historic Parks & Gardens

1. Piercefield Park
2. Mounton House, Mathern
3. Wyelands
4. St Pierre Park
5. Moynes Court, Mathern
6. Mathern Palace

### Public Open Space

22. King George's Playing Field
23. Playing Field, St Arvan's
24. Sports Ground & Playing Field, Chepstow Comprehensive School & Leisure Centre
25. Play Space & Playing Field, Coleford Road, Tutshill
26. Recreation Ground, Coleford Road
27. St Luke's Church & Playing Field
28. St Mary's & St Peter's Church, Tidenham
29. Sedbury Park
30. Football Field & Allotments on Buttington Road, Sedbury
31. Play Space, Buttington Road (near Offa's Mead Primary School)
32. St Mary's Church, Chepstow
33. Sports Field, Severn Crescent, (is this Hardwick Playing Pitch in previous study?)
34. Chepstow Town AFC
35. Cemetery, Mathern Road
36. Chepstow Athletic Club
37. Allotments (off Strongbow Road)
38. The Bulwarks
39. Chepstow Rugby Club & Playing Field
40. Playing Field on Tenby Lane
41. Playing Field, Newton Green
42. St Tewdrig's Church, Merthyr Tewdrig/Mathern
43. Religious Grounds, Beachley Barracks
44. Sports Ground, Beachley Point
45. Bulwark Bowl Skate Park, Bulwark Road
46. Huntfield Road Open Space
47. Woolpitch Wood Open Space
48. Warren Slade & Park Redding Woods

### Open Access Land (CRoW Act)

49. St Pierre's Great Woods
50. Kite's Bushes/Ticken Hill
51. Great Barnets Wood
52. Cockshoot Wood
53. Brier's Grove
54. Yewtree Wood

### Promoted Routes

7. Wales Coastal Path
8. Wye Valley Walk
9. Offa's Dyke Path National Trail
10. Gloucestershire Way
11. Sustrans National Cycle Network Route 4
12. Sustrans National Cycle Network Route 42
13. Sustrans National Cycle Network Route 31

### GI Opportunities

① Green Infrastructure Opportunities - see text for details

## 4.5 Severnside Settlements

### GI Assets

4.5.1 The existing GI assets that provide the GI network in and around the Severnside Settlements are shown on the GI Network Plan (see **Diagram 4.5**).

4.5.2 The Severnside Settlements (which includes Caerwent, Crick, Magor and Undy, Rogiet, Caldicot, Portskewett and Sudbrook) is located immediately north of the Severn Estuary. The latter is designated as a Ramsar, SSSI, SPA and SAC, reflecting the estuary's high nature conservation value. The area comprises a number of woodlands, some accessible (e.g. Thicket Wood and Ifton Great Wood to the north of Rogiet).

4.5.3 Other key GI assets include:

- Nature Reserves such as Magor Marsh.
- The Wales Coast Path, St Tewdrig's Trail, and locally promoted circular walks.
- Accessible natural greenspaces such as Harold Park, Caldicot Castle Country Park, the Nedern Brook Wetlands SSSI and Magor/Undy Gwent Levels SSSI.
- Rogiet Countryside Park and Black Rock.


## GI Opportunities

### Magor & Undy

4.5.4 Key opportunities for strengthening the GI network in and around Magor and Undy through the restoration, maintenance, creation or connection of existing GI assets are also shown on the GI Network Plan (see **Diagram 4.5**). The key GI opportunities that would deliver the most significant benefits for people and wildlife are considered to be:

1. Improve access to larger greenspaces for the eastern areas of Magor.
2. Strengthen the St Bride's Brook / Mill Reen corridor through the creation / management of semi-natural habitat buffers with adjacent fields and the built urban landscape, and to connect with other near-by areas of semi-natural habitat where possible.
3. Form or strengthen ecological links between Upper Grange grassland SINC with the St Brides Brook to its west, and linking the woodland/semi-improved grassland by Rockfield Farm to the M48 verge corridor to its north, as well as to additional habitat patches (trees/scrub) by Vinegar Hill Farm to its south west.
4. Form or strengthen ecological links between the woodland blocks near Vinegar Hill to each other and to the primary route of connectivity via a connection to woodland to the north, St Bride's.
5. Form or strengthen ecological links between St Bride's Brook / Mill Reen to the west, and the green corridor of the railway to the south.
6. Form or strengthen ecological links between small groups of trees/scrub, as well as linking them to the main routes of connectivity, i.e. the B4245 corridor to the east and woodland strip to the west, in the vicinity of Magor Brewery.

4.5.5 Other general GI opportunities are:

- Improve the quality and value of amenity greenspace in Magor and Undy, where appropriate.
- Improve the quality and value of natural and semi-natural greenspace sites in and around the settlements, where appropriate.
- Improve connectivity to the wider landscape, both in terms of access and ecological connectivity, which is currently limited for Magor and Undy due to the settlements being bounded by roads and railway.
- Investigate the potential for a number of new greenways/cycle routes linking the Severnside settlements to one another and beyond
- Strengthen the railway and motorway green corridors, ensuring tree lines and hedgerows are well connected and sensitively managed.
- Ensure ongoing sensitive management of grassland verges.
- Identify the significance of culverts as barriers to wildlife dispersal and explore potential options for reducing their fragmentary effects.
- Ensure hedgerows are sensitively managed and well-connected with the wider hedgerow network and other semi-natural habitat features (particularly woodlands).
- Ensure current blocks of semi-natural habitat and protected sites are sensitively managed and their extent increased where appropriate.
- Ensure ditches are sensitively managed.
- Improve routes linking to the Wales Coastal Path for education, and connectivity with landscape, biodiversity and history.
- Management of community spaces by 'friends of', or similar groups.
- Street tree planting in areas where losses have occurred, especially in the Conservation Area.
- Tree planting in low value amenity space, including species for community orchards and pollinators.
- Interpretation to identify links and loops from key sites.

## Rogiet

4.5.6 Key opportunities for strengthening the GI network in and around Rogiet through the restoration, maintenance, creation or connection of existing GI assets are also shown on the GI Network Plan (see **Diagram 4.5**). The key GI opportunities that would deliver the most significant benefits for people and wildlife are considered to be:

7. Improve the quality and value of the green corridor in Ifton Lane.

8. Form or strengthen ecological links between the series of small groups of trees stretching north-south between the M48 and the railway corridors to the east of Rogiet.

4.5.7 Other general GI opportunities are:

- Improve the quality and value of smaller amenity greenspace sites in the village.
- Ensure ongoing sensitive management of grassland verges.
- Improve connectivity to the wider landscape, both in terms of access and ecological connectivity, which is currently limited for Rogiet as the settlement is bounded by roads and railway.
- Investigate the potential for a number of new greenways/cycle routes linking the Severnside settlements to one another and beyond
- Strengthen the railway and motorway corridors, ensuring tree lines and hedgerows are well connected and sensitively managed.
- Ensure hedgerows are sensitively managed and well-connected with the wider hedgerow network and other semi-natural habitat features (particularly woodlands).
- Ensure current blocks of semi-natural habitat and protected sites are sensitively managed and their extent increased where appropriate.
- Ensure ditches are sensitively managed.
- Management of community spaces by 'friends of', or similar groups
- Street tree planting in areas where losses have occurred, especially in the Conservation Area.
- Tree planting in low value amenity space, including species for community orchards and pollinators.
- Interpretation to identify links and loops from key sites.

## Caldicot

4.5.8 Key opportunities for strengthening the GI network in and around Caldicot through the restoration, maintenance, creation or connection of existing GI assets are also shown on the GI Network Plan (see **Diagram 4.5**). The key GI opportunities that would deliver the most significant benefits for people and wildlife are considered to be:

9. Improve the quality and value of the natural and semi-natural greenspace site (Caldicot Pill Nature Reserve ) adjacent to the town.

10. Strengthen the Nedern Brook corridor, which is the main semi-natural corridor through the settlement, identifying the significance of the culverts as barriers to wildlife dispersal and exploring potential options for reducing their fragmentary effect.

11. Form or strengthen links between the block of woodland and ponds off Dewstow Road (north-west part of the settlement) and the M48 road verge corridor to its south.

12. Form or strengthen links between patches of trees adjacent to the Nedern Brook corridor, north of Caldicot Castle.

13. Consider opportunities to incorporate GI into the Preferred Strategic Site Allocation at Caldicot East, such as provision of pedestrian/cycle links and greenspaces for people, and ecological connections for wildlife.

4.5.9 Other general GI opportunities are:

- Improve the value of churchyard and cemetery sites in Caldicot.
- Improve connectivity to the wider landscape, both in terms of access and ecological connectivity, which is currently limited for Caldicot as the settlement is bounded by roads and railway.
- Investigate the potential for a number of new greenways/cycle routes linking the Severnside settlements to one another and beyond
- Strengthen the railway and motorway corridors: ensure tree lines and hedgerows are well connected and sensitively managed.
- Ensure hedgerows are sensitively managed and well-connected with the wider hedgerow network and other semi-natural habitat features (particularly woodlands).
- Ensure current blocks of semi-natural habitat and protected sites are sensitively managed and their extent increased where appropriate.
- Ensure ditches are sensitively managed.
- Improve the quality and value of amenity greenspaces in Caldicot.
- Ensure ongoing sensitive management of grassland verges.
- Management of community spaces by 'friends of', or similar groups.
- Street tree planting in areas where losses have occurred, especially in the Conservation Area.
- Tree planting in low value amenity space, including species for community orchards and pollinators.
- Interpretation to identify links and loops from key sites.

## Portskewett and Sudbrook

4.5.10 Key opportunities for strengthening the GI network in and around Portsketwett & Sudbrook through the restoration, maintenance, creation or connection of existing GI assets are also shown on the GI Network Plan (see **Diagram 4.5**). The key GI opportunities that would deliver the most significant benefits for people and wildlife are considered to be:

14. Investigate potential access to currently inaccessible greenspaces sites north of Portskewett.

15. Form or strengthen ecological links across the northern half of the settlement, most significantly in relation to the clusters of ASNW SINCs centred on Portskewett Hill, which could be linked to each other and to the railway corridor (to the south), Bushy Close SSSI and Withy Bed woodland (to the east).

4.5.11 Other general GI opportunities are:

- Improve the quality and value of the amenity greenspaces in Portskewett and Sudbrook.
- Improve the quality of the natural and semi-natural greenspaces around the settlements.
- Improve connectivity to the wider landscape, both in terms of access and ecological connectivity, which is limited for Portskewett and Sudbrook as the settlements are bounded in places by roads and railway.
- Investigate the potential for a number of new greenways/cycle routes linking the Severnside settlements to one another and beyond
- Strengthen the railway and motorway corridors, ensuring tree lines and hedgerows are well connected and sensitively managed.
- Ensure ongoing sensitive management of grassland verges.
- Ensure hedgerows are sensitively managed and well-connected with the wider hedgerow network and other semi-natural habitat features (particularly woodlands).
- Ensure current blocks of semi-natural habitat and protected sites are sensitively managed and their extent increased where appropriate.
- Ensure ditches are sensitively managed.
- Management of community spaces by 'friends of', or similar groups.
- Street tree planting in areas where losses have occurred.
- Tree planting in low value amenity space, including species for community orchards and pollinators.
- Interpretation to identify links and loops from key sites

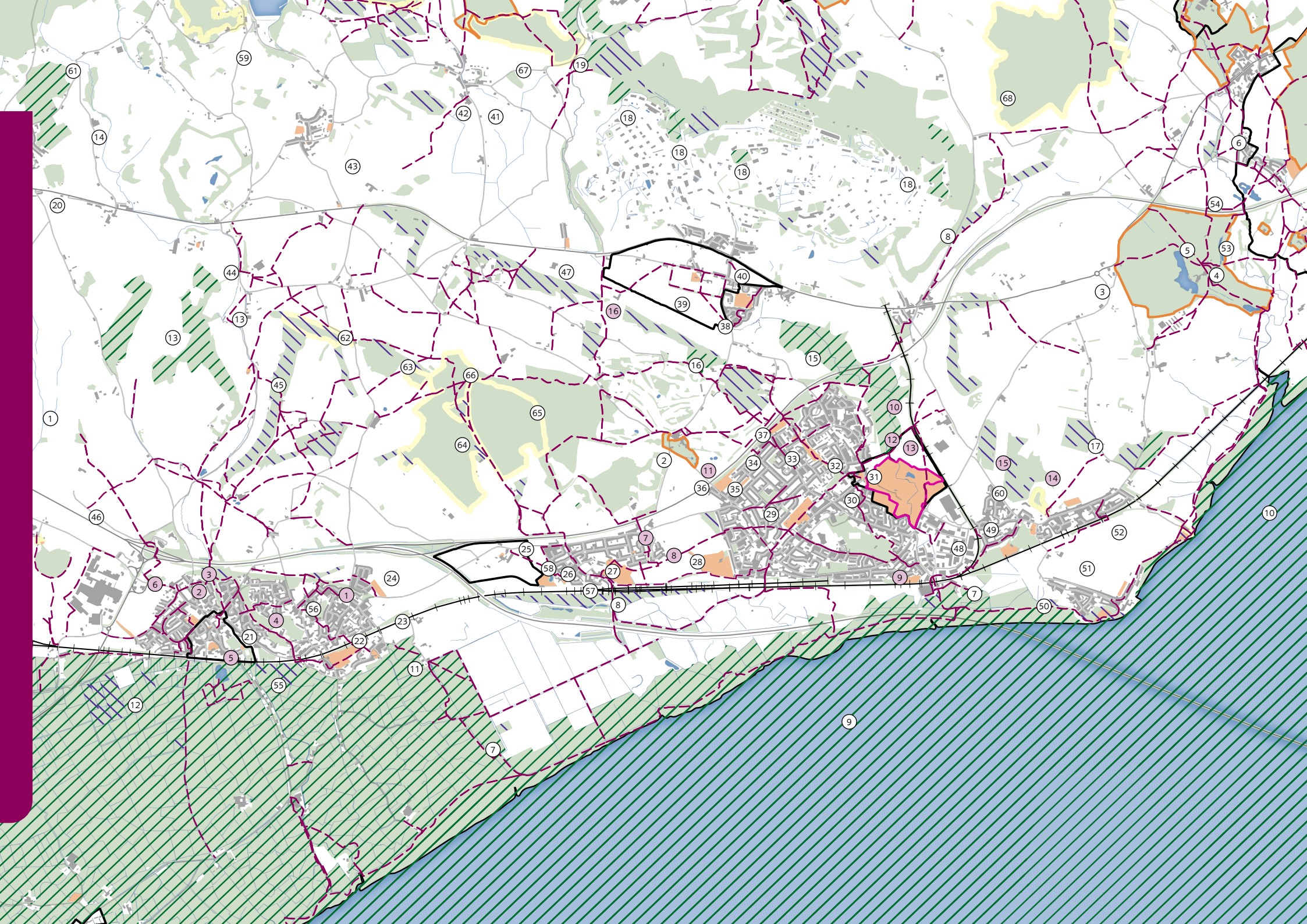
### Caerwent and Crick

4.5.12 Key opportunities for strengthening the GI network in and around Caerwent and Crick through the restoration, maintenance, creation or connection of existing GI assets are also shown on the GI Network Plan (see **Diagram 4.5**). The key GI opportunities that would deliver the most significant benefits for people and wildlife are considered to be:

16. Develop and manage existing habitat corridors, such as between/through Cross-voel Wood, and Upper and Lower Rodge Wood (SINCs)

4.5.13 Other general GI opportunities are:

- Ensure hedgerows are sensitively managed and well-connected with the wider hedgerow network and other semi-natural habitat features (particularly woodlands).
- Ensure current blocks of semi-natural habitat and protected sites are sensitively managed and their extent increased where appropriate.
- Ensure ditches are sensitively managed.
- Investigate the potential for a number of new greenways/cycle routes linking the Severnside settlements to one another and beyond
- Management of community spaces by 'friends of', or similar groups.
- Street tree planting in areas where losses have occurred, especially in the Conservation Area.
- Tree planting in low value amenity space, including species for community orchards and pollinators.
- Interpretation to identify links and loops from key sites.



## DIAGRAM 4.5 Severnside Settlements GI Network Plan

### GI Assets

- Natural or Semi-natural Greenspace
- Statutory Biodiversity Designations
- Sites of Interest for Nature Conservation
- Watercourses/Waterbodies
- Historic Parks & Gardens
- Conservation Area
- Public Open Space
- Country Park
- Open Access Land (CRoW Act)
- Public Right of Way

**Statutory Biodiversity Designations**

9. Severn Estuary Wales SPA/SAC/SSSI/Ramsar
10. Severn Estuary England SPA/SAC/SSSI/Ramsar
11. Gwent Levels - Magor & Undy SSSI
12. Gwent Levels - Redwick & Llandevenny SSSI
13. Penhow Woodland SSSI & National Nature Reserve
14. Parc Seymour Woods SSSI
15. Nedern Brook Wetlands SSSI
16. Brockwells Meadows SSSI
17. Bushy Close SSSI
18. Dinham Meadows SSSI
19. Coombe Valley Woods SSSI

**Historic Parks & Gardens**

1. Pencoed Castle
2. Dewstow House
3. St Pierre Park
4. Mathern Place
5. Moynes Court, Mathern
6. Wyelands

**Public Open Space**

20. Rockfield Close Recreation Ground
21. St Mary's Church, Magor
22. Playing Field on The Ramp, Undy
23. St Mary's Church, Undy
24. Allotments
25. Religious Grounds, The Old Court, Llanfihangel
26. St Mary's Church, Rogiet
27. Rogiet Playing Fields
28. Caldicott Rugby Club
29. King George's Field, Bowling Green & Allotments
30. Caldicott Leisure Centre Playing Fields
31. Caldicott Castle & Country Park
32. St Mary's Church, Caldicott
33. Playing Fields, St Mary's School, Caldicott
34. Religious Grounds, Nedder Way, Caldecott
35. Playing Fields, Green Lane, Caldecott
36. Cemetery & Allotments, Dewstow Road
37. Allotments
38. Caerwent Playing Fields, St Tathan's Place
39. St Stephen's Church, Caerwent
40. Play Space, Lawrence Crescent, Caer-went
41. Play Space, Llanfair-Discoed
42. St Mary's Church, Llanvair-Discoed
43. Playing Field & St Dubritous Church, Llanvaches
44. St John the Baptist Church, Penhow
45. St Bridget's Church, St Bride's Netherwent
46. St Mary's Church, Wilcrick
47. Playing Field, Trewen
48. Portskewett Recreation Ground
49. St Mary's Church, Portskewett
50. Playing Field & Play Space, Sudbrook
51. Allotments, Sudbrook
52. Black Rock Picnic Site
53. St Tewdrick's Church, Merthyr Twedrig
54. Playing Field, Newton Green

**Other Open Spaces**

55. Magor Marsh
56. Mill Common
57. Rogiet Countryside Park
58. Starling Close Amenity Greenspace

**Open Access Land (CRoW Act)**

59. Myndd Alltir-fach (Common Land)
60. Stow Ball Hill (Common Land)
61. Wentwood
62. Coed y Mynydd
63. Upper Seven Acres
64. Thicket Wood
65. Slade Wood
66. Lower Seven Acres
67. Cuhere Wood
68. St Pierre's Great Woods

**Promoted Routes**

7. Wales Coastal Path
8. Sustrans National Cycle Network Route 4

### GI Opportunities

1. Green Infrastructure Opportunities - see text for details

## 4.6 Usk

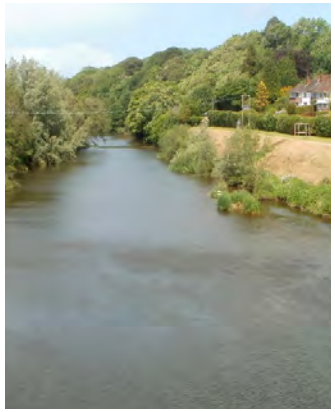
### GI Assets

4.6.1 The existing GI assets that provide the GI network in and around Usk are shown on the GI Network Plan (see **Diagram 4.6**).

4.6.2 Usk is a secondary settlement in the west of Monmouthshire, surrounded by farmland and woodland. The River Usk flows through the village, and the Usk Valley Walk follows its route.

4.6.3 Other key GI assets include:

- Cefn Ila Park and Garden
- Llanbadoc Island Access Land, adjacent to the River Usk
- Allotments
- Various sports clubs and recreation grounds
- Multiple churchyards



### GI Opportunities

4.5.14 Key opportunities for strengthening the GI network in and around Usk through the restoration, maintenance, creation or connection of existing GI assets are also shown on the GI Network Plan (see **Diagram 4.6**). The key GI opportunities that would deliver the most significant benefits for people and wildlife are considered to be:

1. Usk Trail Action Group cycleway proposal along old railway line
2. Improvements to Usk Valley Walk and other local paths to make them more accessible.
3. Potential to create an Usk to Pontypool or Usk Railway path.
4. Improve the quality of the allotments.

4.5.15 Other general GI opportunities are:

- Ensure hedgerows are sensitively managed and well-connected with the wider hedgerow network and other semi-natural habitat features. (Not mapped)
- Ensure current blocks of semi-natural habitat and protected sites are sensitively managed and their extent increased where appropriate.
- Ensure ditches are sensitively managed.
- Increase access to inaccessible greenspace sites, where appropriate.
- Where appropriate, improve the quality of amenity greenspaces in Usk.
- Where appropriate, improve the quality of natural and semi-natural greenspaces in Usk.
- Management of community spaces by 'friends of', of similar groups.

## DIAGRAM 4.6 Usk GI Network Plan

### GI Assets

- Natural or Semi-natural Greenspace
- Statutory Biodiversity Designations
- Sites of Interest for Nature Conservation
- Watercourses/Waterbodies
- Historic Parks & Gardens
- Conservation Area
- Public Open Space
- Country Park
- Open Access Land (CRoW Act)
- Public Right of Way

**Statutory Biodiversity Designations**

5. Usk Valley/Afon Wysg SAC
6. River Usk (Lower Usk)/Afon Wysg (Wysg Isaf) SSSI

**Historic Parks & Gardens**

1. Cefn lla, Llanbadoc

**Public Open Space**

7. Rugby Field, Coleg Gwent, Usk Campus
8. The Island Recreation Ground
9. Allotments (on A472)
10. Usk Rugby Football Club
11. Recreation Ground, Maryport Street
12. Usk Athletic Club
13. St Madoc's Church, Llanbadoc
14. Llanbadoc Island Play Park
15. Priory Church of St Mary, Usk
16. St Francis Xavier & St David Lewis Catholic Church
17. Allotments on Monmouth Road

**Open Access Land (CRoW Act)**

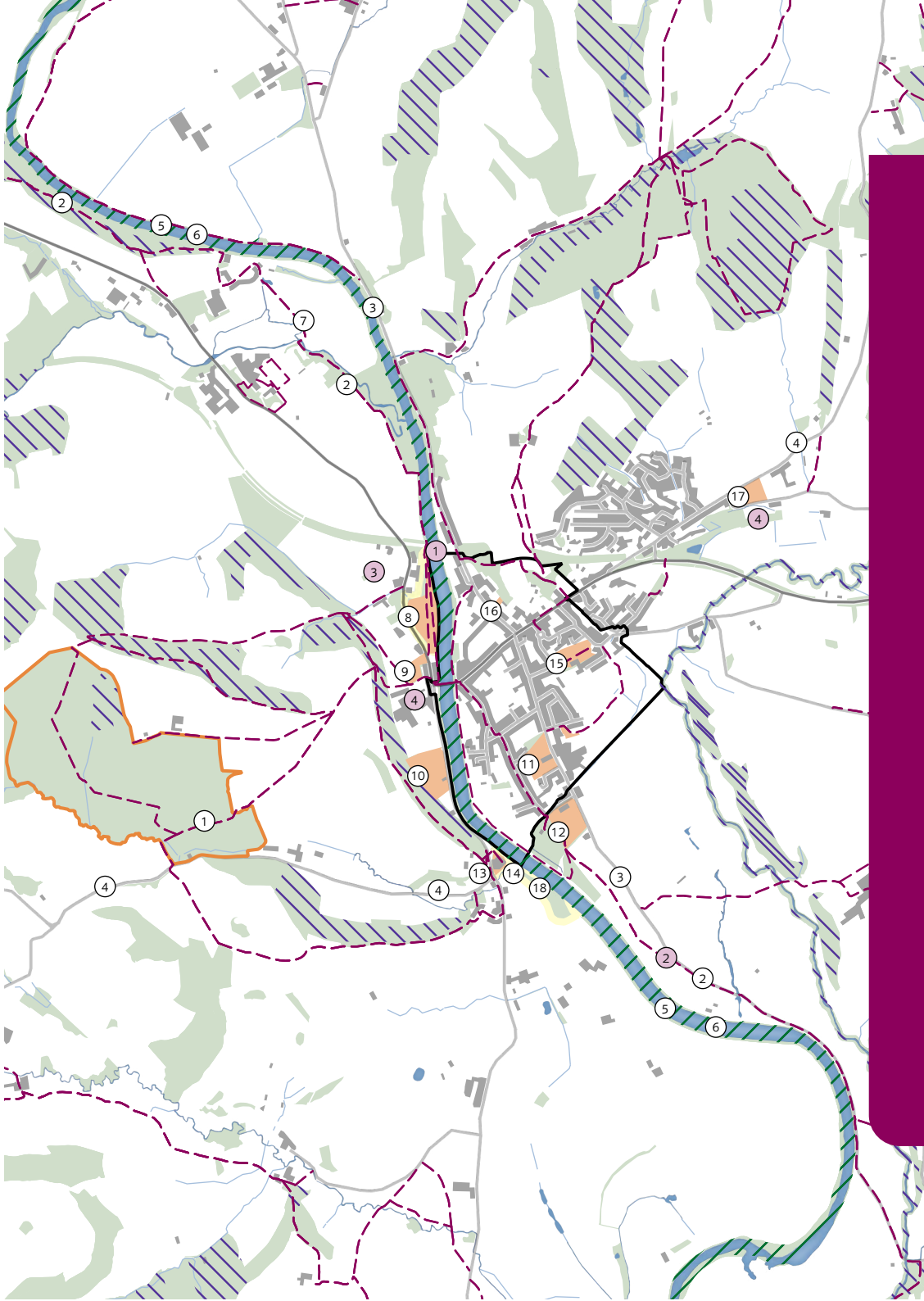
18. Llanbadoc Island

**Promoted Routes**

2. Usk Valley Walk
3. Sustrans National Cycle Network Route 42
4. Sustrans National Cycle Network Route 423

### GI Opportunities

(1) Green Infrastructure Opportunities - see text for details



## 4.7 Raglan

### GI Assets

4.7.1 The existing GI assets that provide the GI network in and around Raglan are shown on the GI Network Plan (see **Diagram 4.7**).

4.7.2 Raglan is a secondary settlement in the centre of Monmouthshire, surrounded by farmland. The Sustrans National Cycle Network Route 423 runs through the centre of the settlement, which is bounded to the north by the A40. The small watercourse Nant y Wilcae flows to the south of the village.

4.7.3 Other key GI assets include:

- Raglan Castle and Historic Park and Garden
- Allotments between Usk Road and the High Street
- Playing Field on Station Road

### GI Opportunities

4.6.4 Key opportunities for strengthening the GI network in and around Raglan through the restoration, maintenance, creation or connection of existing GI assets are also shown on the GI Network Plan (see **Diagram 4.7**). The key GI opportunities that would deliver the most significant benefits for people and wildlife are considered to be:

1. Opportunity to develop Raglan 'Local ways' and health walks, eg. 'Healthy Footsteps Walk'

4.6.5 Other general GI opportunities are:

- Ensure hedgerows are sensitively managed and well-connected with the wider hedgerow network and other semi-natural habitat features. (Not mapped)
- Ensure current blocks of semi-natural habitat and protected sites are sensitively managed and their extent increased where appropriate. (Not mapped)
- Ensure ditches are sensitively managed. (Not mapped)
- Increase provision of or access to larger accessible greenspace sites. (Not mapped)
- Improve the quality of the natural and semi-natural greenspaces around the settlements and public rights of way. (Not mapped)
- Management of community spaces by 'friends of', of similar groups
- Ensure pond networks are sensitively managed for Great Crested Newts
- Tree planting for landscape character and biodiversity - field and hedgerow oaks are are not being replaced as they die off.

## DIAGRAM 4.7 Raglan GI Network Plan

### GI Assets

- Natural or Semi-natural Greenspace
- Statutory Biodiversity Designations
- Sites of Interest for Nature Conservation
- Watercourses/Waterbodies
- Historic Parks & Gardens
- Conservation Area
- Public Open Space
- Country Park
- Open Access Land (CRoW Act)
- Public Right of Way

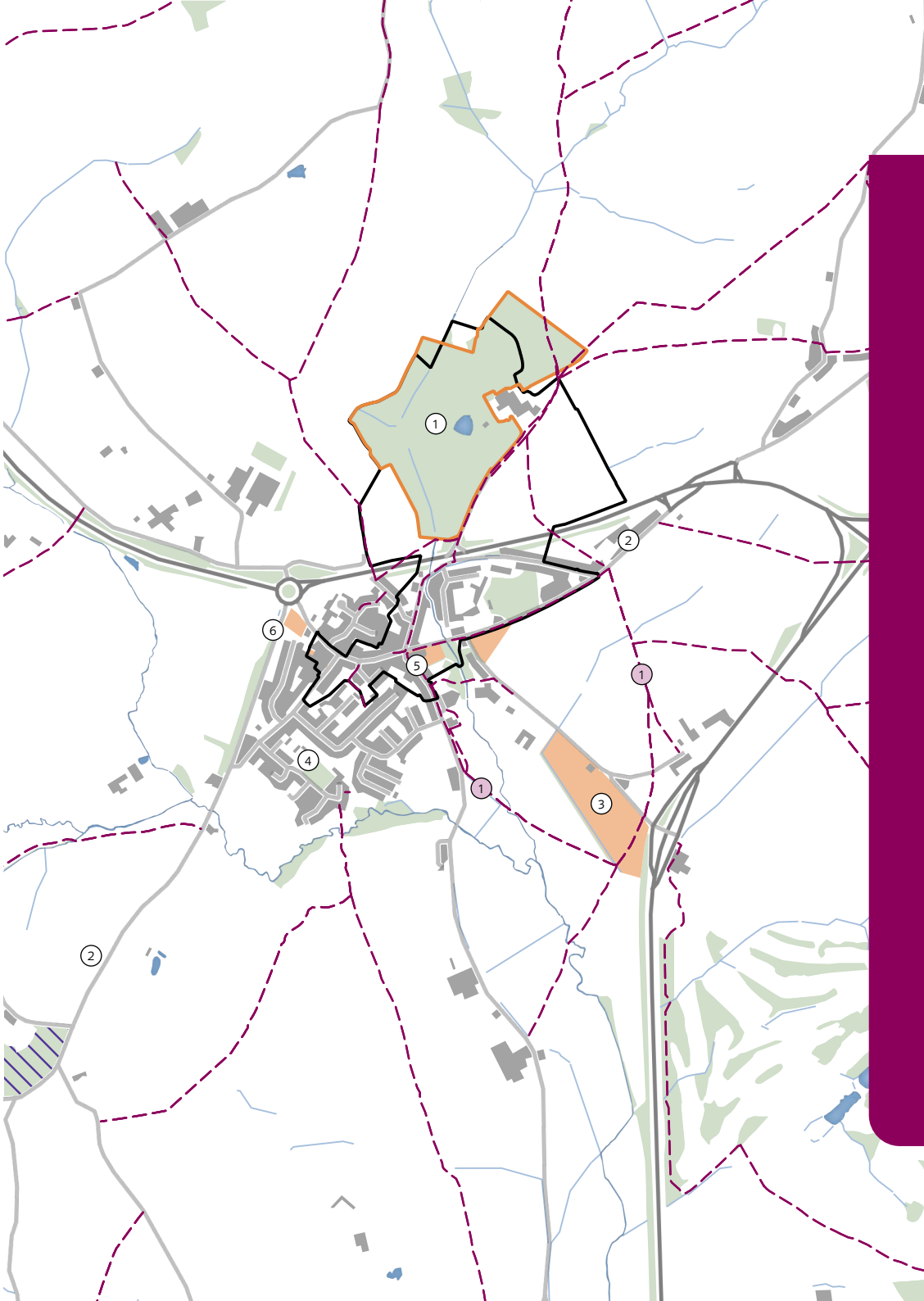
**Historic Parks & Gardens**
1. Raglan Castle

**Public Open Space**
3. Playing Field, Station Road
4. Play Space on Prince Charles Road/Hoel Y Tywysog Siarl
5. The Church of St Cadoc
6. Allotments between Usk Road and High Street

**Promoted Routes**
2. Sustrans National Cycle Network Route 423

### GI Opportunities

(1) Green Infrastructure Opportunities - see text for details



## 4.8 Penperlleni

### GI Assets

4.8.1 The existing GI assets that provide the GI network in and around Penperlleni are shown on the GI Network Plan (see **Diagram 4.8**).

4.8.2 Penperlleni is a secondary settlement in the west of Monmouthshire, surrounded by farmland and woodland. The Monmouthshire and Brecon Canal lies approximately 0.5km to the west of the settlement.

4.8.3 Other key GI assets include:

- Areas of NRW Public Forest, including Wern Fawr to the north
- Churchyards at St Illtyd, Mamhilad; St Peter's, Goetre and Saron Baptist Church
- Playing Fields

### GI Opportunities

4.7.4 Key opportunities for strengthening the GI network in and around Penperlleni through the restoration, maintenance, creation or connection of existing GI assets are also shown on the GI Network Plan (see **Diagram 4.8**). The GI opportunities that would deliver the most significant benefits for people and wildlife are considered to be:

- Ensure hedgerows are sensitively managed and well-connected with the wider hedgerow network and other semi-natural habitat features. (Not mapped)
- Ensure current blocks of semi-natural habitat and protected sites are sensitively managed and their extent increased where appropriate. (Not mapped)
- Ensure ditches are sensitively managed. (Not mapped)
- Increase public access to/provision of natural and semi-natural greenspace in and around the settlement. (Not mapped)
- Management of community spaces by 'friends of', of similar groups

## DIAGRAM 4.8 Penperlleni GI Network Plan

### GI Assets

- Natural or Semi-natural Greenspace
- Statutory Biodiversity Designations
- Sites of Interest for Nature Conservation
- Watercourses/Waterbodies
- Historic Parks & Gardens
- Conservation Area
- Public Open Space
- Country Park
- Open Access Land (CRoW Act)
- Public Right of Way

**Statutory Biodiversity Designations**

3. River Usk SAC
4. River Usk (Lower Usk)/Afon Wysg (Wysg Isaf) SSSI

**Public Open Space**

5. The Church of St Illtyd, Mamhilad
6. Playing Field/Play Space on Fairfield/Park Y Brain Lane
7. Goytre AFC (Football Ground on Plough Road)
8. St Peter's Church, Goetre
9. Saron Baptist Church, Saron Road

**Other Open Spaces**

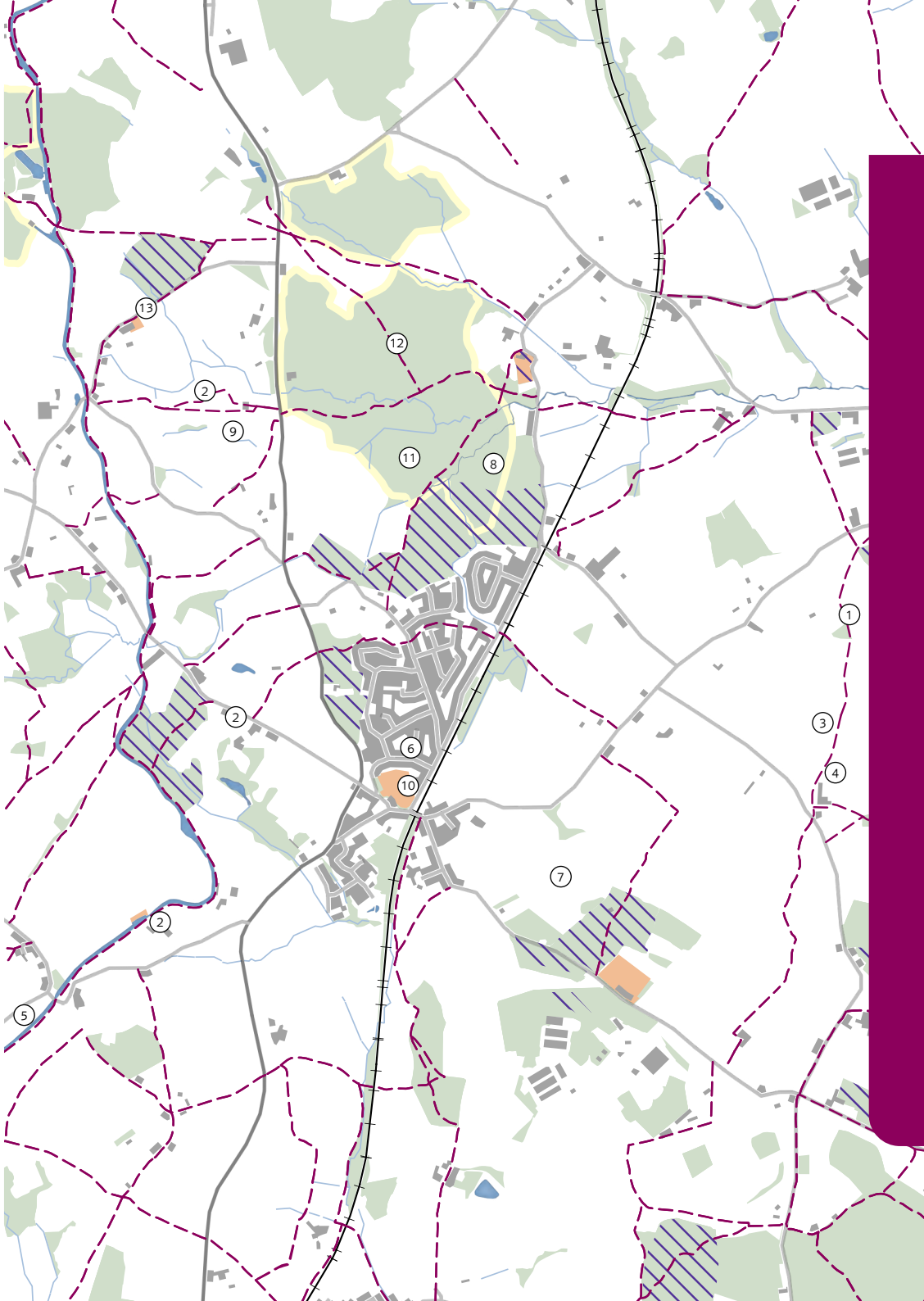
10. Goytre Fawr Primary School Playing Fields

**Open Access Land (CRoW Act)**

11. Wern Fawr
12. Llwch
13. Coed Mawr

**Promoted Routes**

1. Usk Valley Walk
2. Sustrans National Cycle Network Route 49



# Appendices

a

# Acknowledgements

## Contributor acknowledgements


**Monmouthshire County Council Steering Group**

| | |
|---|---|
| Colette Bosley | Green Infrastructure Team Leader |
| Helen Fairbank | Gwent Green Grid Collaboration Lead |

**CBA Consultant Team**

| | |
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| Dominic Watkins | Project Director |
| Harriet Stanford | Project Co-ordinator |
| Kate Goodchild | Project Technical Support |

**Stakeholders**

See **Appendix C** for details

## Image Acknowledgements

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**Notes:**

The digital data used in this study represents currently available datasets.

The datasets have not been modified or enhanced,  and their accuracy cannot be guaranteed.

Datasets sourced from Natural England/Historic England have been used to enable identification of cross-border GI assets.

C

# Stakeholder Consultation Record

**Monmouthhsire Green Infrastructure Strategy Review**

Internal stakeholders within Monmouthshire County Council were consulted to inform the review of Volume 1 (Strategic Framework) and Volume 2 (Delivery Plan) of the Strategy, in particular the updating of the Action Plan to reflect delivery of GI projects over the last 5 years.

# MONMOUTHSHIRE GREEN INFRASTRUCTURE STRATEGY
# STAKEHOLDER WORKSHOP NOTE

**Workshop 1**
**18th June 2018, County Hall, Usk**

**Attendees**

| | |
|---|---|
| Colette Bosley | Monmouthshire CC - Principal Green Infrastructure and Landscape Officer |
| Craig O'Connor | Monmouthshire CC – Development Management |
| Hazel Clatworthy | Monmouthshire CC – Policy and Performance |
| Jill Edge | Monmouthshire CC – Planning Policy |
| Judith Langdon | Monmouthshire CC – Community and Partnerships |
| Kate Stinchcombe | Monmouthshire CC – Senior Biodiversity Officer |
| Mark Davies | Monmouthshire CC – Highways |
| Matthew Gatehouse | Monmouthshire CC – Head of Policy and Performance |
| Matthew Lewis | Monmouthshire CC – GI & Countryside Manager |
| Mike Moran | Monmouthshire CC – GI & Countryside (Play & Recreation) |
| Nick Keyse | Monmouthshire CC – Estates |
| Nicola Edwards | Monmouthshire CC – Food and Tourism Manager |
| Nigel Leaworthy | Monmouthshire CC – Head of Grounds Maintenance |
| Ruth Rourke | Monmouthshire CC – PROW Team Leader |
| Sharran Lloyd | Monmouthshire CC – Community and Partnerships |
| | |
| Richard Barter | Monmouthshire Housing Association |
| Scott Thomas | Monmouthshire Housing Association |
| | |
| Andrew Nevill | Torfaen CBC – Senior Landscape Officer |
| | |
| Emily Finney | Welsh Government – Natural Resource Policy |
| Lisa Fiddes | Welsh Government – Inspector of Historic Areas |
| Siobhan Wiltshire | Welsh Government – Planning (Landscape and GI) |
| | |
| Fen Turner | Natural Resources Wales – Senior Planner |
| | |
| Tim Wroblewski | TACP (on behalf of Caerphilly CC) |
| | |
| Dominic Watkins | Chris Blandford Associates (Facilitators) |
| Bill Wadsworth | Chris Blandford Associates (Facilitators) |
| Harriet Stanford | Chris Blandford Associates (Facilitators) |

**Purpose of Workshop 1**

To engage stakeholder in identifying local strategic priorities for potential investment in Green Infrastructure.

**Stakeholder Feedback**

**<u>Discussion Group A (Facilitated by DW/HS)</u>**



CHRIS BLANDFORD ASSOCIATES
landscape | environment | heritage

- Landscape-scale projects:
  - Living Levels
  - RECS – Renewable Energy and Community Schemes
  - Wye Valley AONB
  - Flood Management and Habitat Creation/Natural Flood Risk Management

- The public value their landscape, countryside and green spaces in Monmouthshire
- Wellbeing and access to greenspace:
  - This needs to be wider than literal access
  - People who could most benefit are often missing out
  - Facilitate access to green spaces close to home rather than travelling to facilities further afield – there is a lack of public transport

- Habitat fragmentation
- What is the approach to connectivity?
- How does the GI Strategy link to other Strategies and Acts – for example the Active Travel Act and the Play Strategy?
- Public Rights of Way:
  - Need to be more functional with links to internal areas of settlements
  - What is the legibility of the connections
  - How useable are they? What state of maintenance
  - Shirenewton example – has good links to schools
  - Connections between where people live and work
  - Health walks – being addressed in the ROWIP. These facilitate GPs to be able to prescribe walks, and help GP referral walking groups
  - Healthy walking schemes and groups (eg. Raglan)
  - Promotion of these is important
  - Routes need to be easy to use and attractive

- Place-making agenda
- How to encourage people to be a part of maintenance etc – expand beyond the current demographic
- Air quality – using GI to mitigate

- Land management:
  - Biodiversity – managing MCC land for function
  - County farms – forward plans
  - Management of public sector land across the region
  - Engaging with the management of land beyond that usually managed for biodiversity/flood management etc. that is within public ownership (MCC/NRW etc)

- Pollinators need to be a priority – there are challenges in keeping the pollinators agenda in current thinking
- Living levels – integrate with current projects
- Wye Catchment Partnership – there are projects/advice etc going on within the English part of the AONB
- Natural flood risk management in the Brecon Beacons
- Raise awareness of management costs when embedding GI into new development – costs need to be sensible for tenants
- Education – in schools and elsewhere
- Breadth of user groups
- Brexit needs to be considered – including the impact of agriculture and sustainable land management. Local connections in the agricultural community. Welsh government consultation currently underway?
- Destination development plan – access to the countryside is part of the key offer
- Social Justice Strategy – access to greenspace
- MCC Corporate Plan
- AONB Management Plan – review – about to go into next cycle

**Discussion Group B (Facilitated by BW/CB)**

- Historic Theme:
  - Connectivity/links between historic assets
  - Links within settlements between greenspaces

- Wellbeing (Wellbeing Plan/Corporate Strategy):
  - Green/blue corridors for active travel
  - Ease of navigation of active travel
  - Food growing/healthy eating
  - Allotments
  - Local markets – delivering back to people
  - Mental health wellbeing
  - Health Impact Assessments
  - Promotion of access to GI - getting info to people to use assets
  - Availability of GIS info for local communities
  - Data Rationalisation

- Landscape-scale connectivity:
  - Needs and opportunities analysis for global response
  - Biodiversity and ecosystem services to underpin GI
  - Working at scale for resilience

- Ecosystem Services:
  - Flood risk in rural and urban centres
  - Farming – MCC landholding use for flood risk and control
  - Access – guiding people to high [NOx] without compensation
  - Monocropping
  - No hinterland
  - Ecosystem services analysis in terms of what GI assets can provide via, for example, management.

- Access:
  - Safe cycle routes
  - Additional access to GI

- Future Proofing:
  - Removal of toll = increased traffic/increased settlement, etc.

- Incentivising:
  - Packages/presentation to landowners
  - Online presence/info
  - Not just about best practice
  - Partnership working

- Tourism:
  - Destinations and interpretation of GI Assets/Value
  - Big/Inspiring Projects
  - Communication routes/access
  - Minimising impact

- Valuation:
  - Non-monetary valuation
  - Monetary valuation of GI to demonstrate value of GI investment

- Adaptability/Flexibility



CHRIS BLANDFORD ASSOCIATES
landscape | environment | heritage

**Workshop 2**
**19th June 2018, Shire Hall, Monmouth**

**Attendees**

| | |
|---|---|
| Colette Bosley | Monmouthshire CC - Principal Green Infrastructure and Landscape Officer |
| Jill Edge | Monmouthshire CC – Planning Policy |
| Judith Langdon | Monmouthshire CC – Policy and Communications |
| Kate Stinchcombe | Monmouthshire CC – Senior Biodiversity Officer |
| Mark Cleaver | Monmouthshire CC – Grounds |
| Matthew Lewis | Monmouthshire CC – Countryside Manager |
| Ruth Rourke | Monmouthshire CC – PRoW Team Leader |
| | |
| Cllr Ann Webb | Monmouthshire CC |
| Cllr R.G. Roden | Monmouthshire CC |
| Cllr Tony Easson | Monmouthshire CC |
| | |
| Cllr Tony Konieczny | Abergavenny TC |
| | |
| Cllr Brian Counsell | Caerwent CC |
| | |
| Cllr Dave Evans | Caldicot TC |
| | |
| Peter Cloke | Natural Resources Wales |
| | |
| Andrew Blake | Wye Valley AONB |
| | |
| Neville Hart | Gwent Wildlife Trust |
| | |
| Nicola Bradbear | Bee Friendly Monmouthshire |
| | |
| Steph Tyler | Monmouthshire Meadows |
| | |
| Dominic Watkins | Chris Blandford Associates (Facilitators) |
| Bill Wadsworth | Chris Blandford Associates (Facilitators) |
| Harriet Stanford | Chris Blandford Associates (Facilitators) |

**Purpose of Workshop 2**

To engage stakeholders in identifying potential Green Infrastructure projects in and around the key settlements through an opportunity mapping exercise (as illustrated by extracts below).

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**Purpose of Workshop 2**

To engage stakeholders in identifying potential Green Infrastructure projects in and around the key settlements through an opportunity mapping exercise (as illustrated by extracts below).

**Stakeholder Feedback**

| **Abergavenny** |
|---|
| Wye Usk Foundation - 1yr project with farmers to improve banks/soil erosion and identify sites for habitat improvement |
| Abergavenny Community Orchard |
| Incredible Edible Abergavenny |
| Mardy Park Environmental Group |
| Gavenny Project - Castle Meadows. Confluence of Gavenny and Usk. Bank Management/Clearance. Management of Water Meadows. NRW, MCC, ATC. Volunteers - Friends of Castle Meadows. Abergavenny Civic Society |
| Gavenny Project - Swan Meadow. East bank side could be developed as a wild flower meadow. Some habitat improvement undertaken by MCC |
| Gavenny Project - Podcast. http://www.countryfile.com/podcast/wildlife-wildlife-stories/wade-welsh-river-search-wildlife |
| KHS/Abergavenny Leisure Centre. 21st Century School Sport and Leisure Provision |
| Friends of Castle Meadows - education and conservation work |
| Possible - Introduction of Park Run - weekly 5k walk/run. Free event every Saturday |
| **Caerwent** |
| Limestone influenced habitats around MOD Land - Critical for rare biodiversity. Potential for greater partnership working. |
| Introduction of Junior Park Run , weekly free event, 2k every Sunday morning |
| King George Playing Fields Caldicot |
| **Chepstow** |
| Introduction of Park Run. Weekly 5k walk/run. Free event every Saturday morning. |
| Chepstow School/Leisure centre. 21st Century School Sport and leisure provision. |
| Piercefield House Circular Walk. Needs improving re-signage and replacing old stiles with KG. Some interpretation on-site would be beneficial for locals/tourists as lots of landscape/biodiversity/heritage |

| **Monmouth** |
|---|
| Future project - Kingswood Area - pilot project demonstrating natural flood management techniques and benefits for water quality, flood reduction, biodiversity etc. |
| Some excellent sites include along the Monnow above Osbaston Forge, within Bridges Centre etc. Management is key. Ditto road verges. Native grassland beats annual beds. |
| Stop mowing some green spaces in Monmouth until August - then cut and remove |
| Introduction of junior park run - 2k run/walk every Sunday |
| Introduction of Park Run - 5k weekly run/walk - possible Chippenham Fields. |
| Erosion on bank of Wye Valley Walk at Monmouth |
| Cycle corridor south from Monmouth |
| Preserve Troy Gardens/Old Station/Wildlife/Eco |
| Community Woodland Claypatch Wyesham |
| Keep free of building houses [nb - highlight along east side of A466] |
| Save the Catalpa Tree [in St. James' Square] |
| Reduce run-off on hills in Osbaston. Planting in field E of Prospect Road - need landowner permission |
| **Penperlleni** |
| Goytre Wharf. NRW Woodland. NRW looking at how new paths for all abilities can be created, currently consulting with users. |
| **Rogiet** |
| NRW Slade Wood. Areas are managed for butterflies. Also management agreement with Gwent Wildlife Trust to look after meadows. |
| **Usk** |
| Incredible Edible Usk |
| Usk in Bloom |

| Other Locations |
|---|
| Buglife Bee-Lines. Includes coast and several corridors |
| Need to understand difference between desk-top study of rights of way and lived experience. (eg. RoW that are obstructed by nettles, mud, large cattle. etc) |
| Deer management is key aspect of enhancing the quality of Lower Wye Valley woodlands - hence future support is critical for woodland biodiversity |
| Connect Wentwood with Chepstow Park Wood (and then on to Wye Valley) |
| Wentwood - NRW working with Woodland Trust on improving access and reducing anti-social behaviour. Partnership Group including volunteers needs to take place. |
| NRW Chepstow Park Wood. NRW are working with access team to look at how access can be improved. |
| New Housing Developments - strategy for developers to provide bird boxes (swifts, sparrows etc) built into new estates. New GI for wildlife. |
| Nearly all NRW forestry land holding is open access and can be used for informal recreation |
| Woodland Trust - current PAWS restoration project. GIS. GWT involved. |
| GI and NFM on Wye tributaries Tintern to Penallt |
| Leasing county farms to conservation groups |
| Managing focussed landscapes for bats ('batscape') approach. Horseshoe bat SAC. 'Landscapes' around roosts. |
| Improve quality of hedgerow management. Follow practise recommended in Bee Friendly Monmouthshire - Hedgerow Manifesto |
| More careful mowing of Monmouthshire's verges. Training of contractors and operatives. |
| Stop mowing! Stop destroying hedgerows! These are crucial wildlife corridors and enhance the environment for everyone. |
| Stop glyphosate soaking every kerbside. |
| Avoid herbicide use in Monmouth and elsewhere |
| Veteran, ancient and future veteran trees need nurturing (and incentivising management/care) |
| SMS funded heathland restoration project pending stage 2 application (last lowland heathland around Trellech) |
| Connecting special wildlife sites and orchards, Monmouthshire meadows sites and tributaries and corridors throughout AONB |
| Drystone walls are key habitats and corridors |
| Flood plain restoration - reversion to grassland |
| Green Infrastructure Management Plans on countryside and 'attractions' sites |
| GWT - Over 400 LWS across Gwent. Owners supported, landowner days, GIS map collated. |
| Nature isn't neat. Pilot town to be decided. RDP - Pollinator Project |

| |
|---|
| Potential to increase recreation and biodiversity/tourism in Wye Valley AONB area - issues with maintenance of county unclassified roads/users |
| Bread and cheese walk in bad state of repair. Private land. Rare landscape/plants |

d

# Green Infrastructure Assessment

d1

# Green Infrastructure Assets

**Natural and semi-natural greenspaces**

Natural and semi-natural greenspaces (see **Diagram D1.1**) encompass a broad range of habitat types (see **Diagram D1.2**) that can be found both within (see **Diagram D1.3**) and outside designated wildlife sites, including:

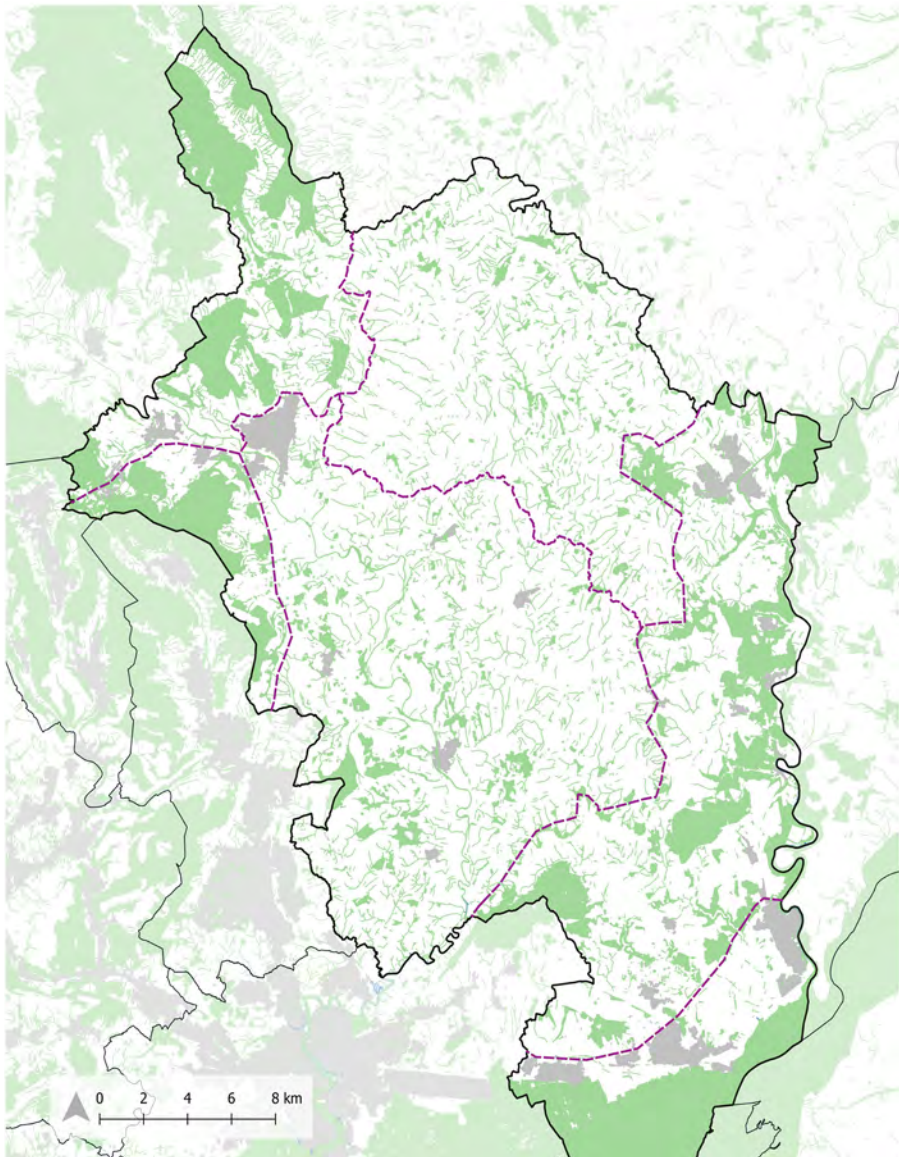
- woodland & scrub
- grassland, heath and moor
- wetlands
- open/running water
- coast

In addition to supporting a range of habitats for wildlife, these natural and semi-natural greenspaces can also, where appropriate, provide managed access for informal recreation (such as walking and bird watching at Fiddler's Elbow and Cleddon Bog nature reserves and the surrounding undesignated or ancient woodlands, which are partially accessible).

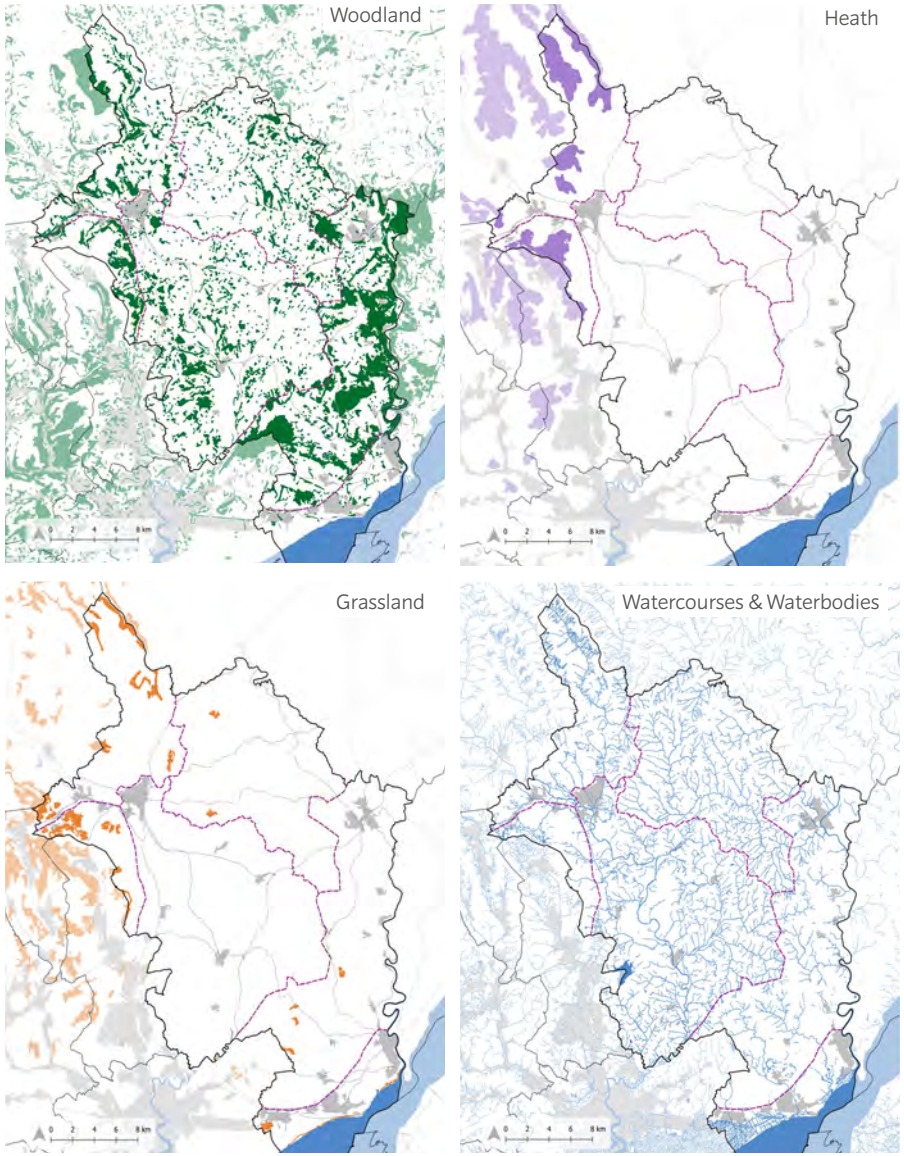
Grasslands are concentrated in the northwest of the county, predominantly associated with the uplands, though there are scattered pockets elsewhere. Heath is also concentrated in the uplands in the northwest of the county. Monmouthshire has a high concentration of woodlands and watercourses scattered across the county, but with a particular concentration of woodlands in the Wye Valley and south of the county, and with a distinctive concentration of small watercourses in the Gwent Levels.

Information on the current condition of many of the designated sites is limited, however management plans for the European Sites demonstrate that a number of the sites are in unfavourable condition, and the Monmouthshire Biodiversity and Ecosystem Resilience Forward Plan (2017) states that 'the extent and quality of habitats in the County is largely reducing'.

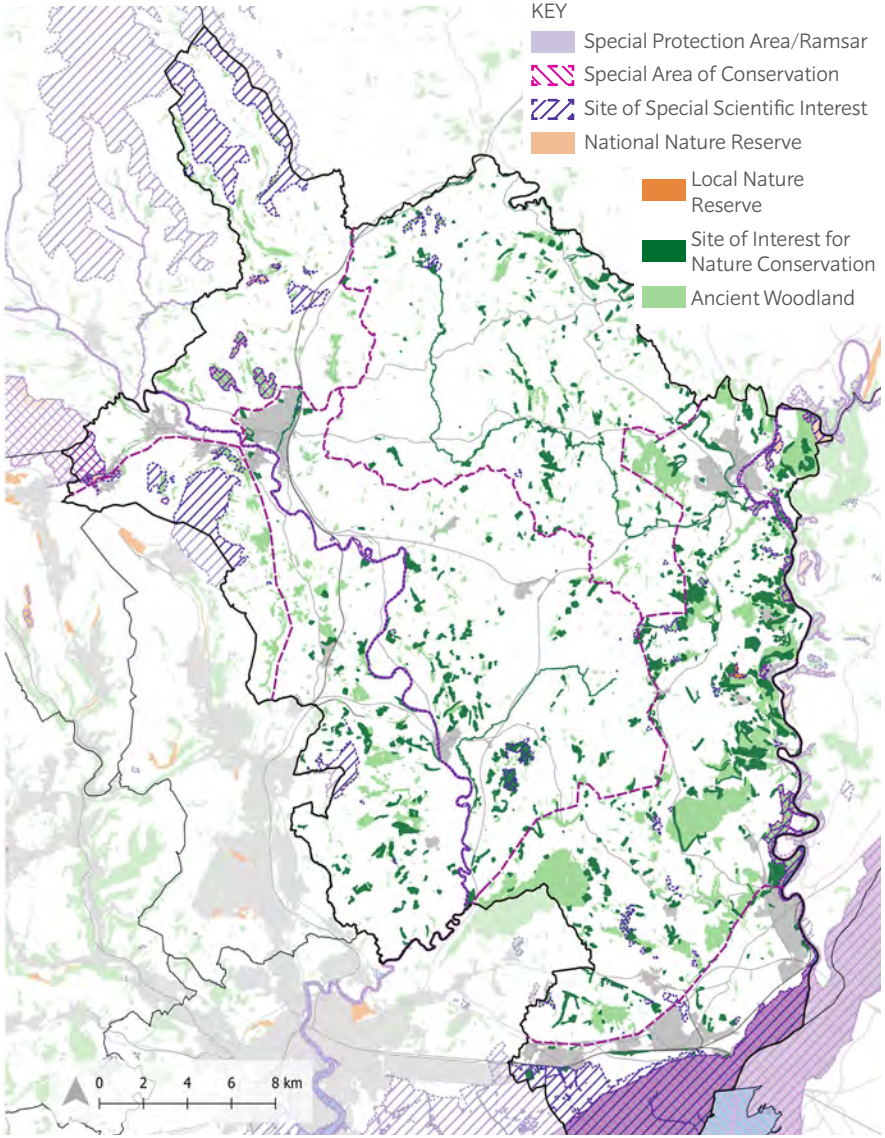
**DIAGRAM D1.1 Natural and Semi-Natural Greenspaces**



## DIAGRAM D1.2 Habitats




## DIAGRAM D1.3 Biodiversity Designations

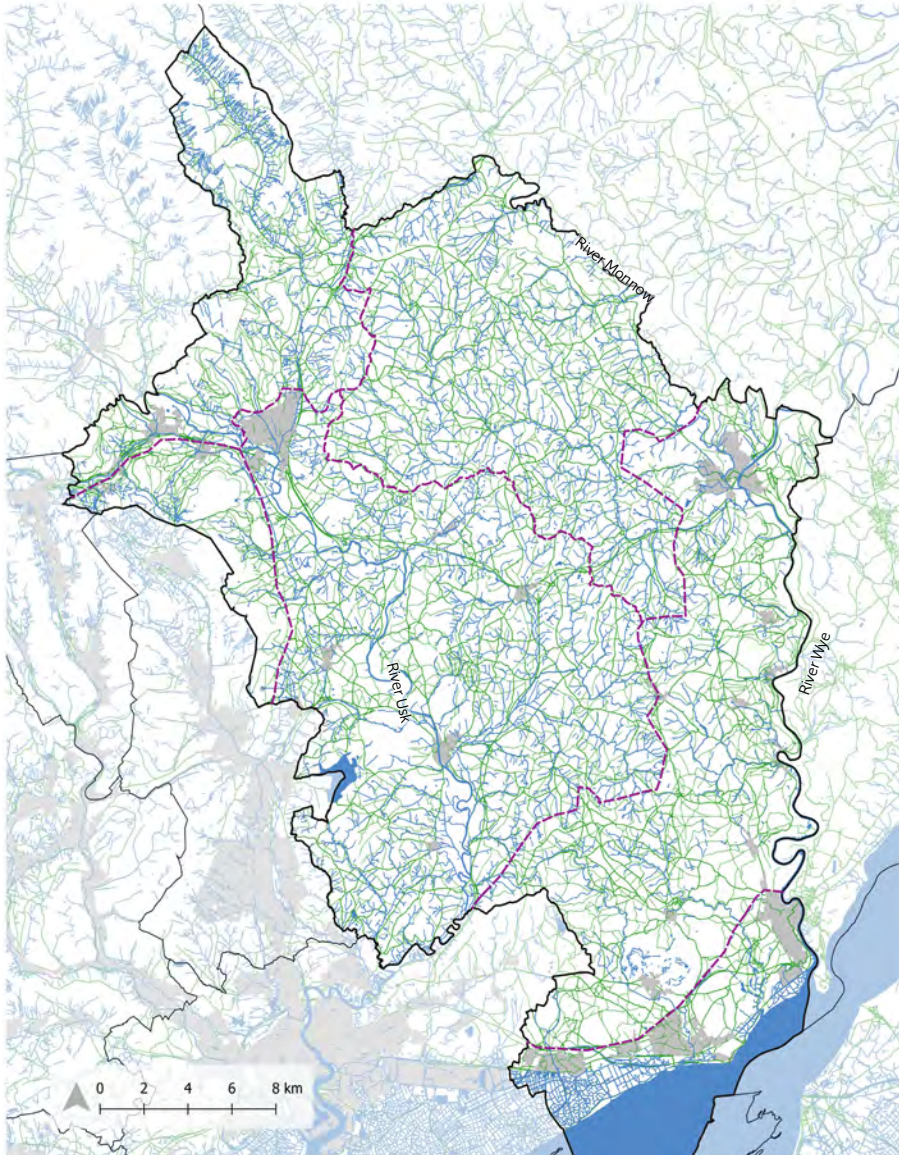


### Green and blue corridors

Linear landscape features encompassing semi-natural and natural terrestrial and aquatic habitats (see **Diagram D1.4**). In addition to function in supporting wildlife dispersal, corridors also provide opportunities for walking, cycling and other outdoor recreation activities. Within Monmouthshire, significant green and blue corridors include:

- The larger Rivers Usk, Wye, and Monnow (important green/blue corridors incorporating public access in some places such as the Usk and Wye Valley Walks)
- Smaller watercourses including the River Trothy, Nedern Brook, Olway Brook and Mill Reen.
- The ditch and reen network on the Gwent Levels (important green/blue corridors incorporating public access in some places)
- The Severn Estuary (an important marine blue corridor for migration of fish and birds).
- The sea wall along the Severn Estuary (an important green corridor for plant communities and pollinators, incorporating the Wales Coast Path for much of its length)
- Historic green lanes and byways
- Highway and railway verges between settlements (important green corridors)

**DIAGRAM D1.4 Green and Blue Corridors**



**Productive landscapes (farmland, woodlands and allotments)**

Farmland, orchards and allotments can contribute to local food production and landscape character. Monmouthshire is well wooded, particularly through the Wye Valley in the east and across to Wentwood in the southwest. Scattered small woodlands are also a feature across the farmland that makes up much of the central part of the county.

Farmland (see **Diagram D1.5**) includes both commercial farming businesses and small holdings, consisting of a predominantly pastoral farming landscape with pockets of arable land. The highest quality, and thus most productive agricultural land is found in the south of the county, in the Gwent Levels and in pockets across Central Monmouthshire – South. The poorest quality farmland is found in the uplands, and is usually grazed by sheep where it is used for farming.

| Zone | % of Zone Grade 1 or 2 |
|---|---|
| A: Gwent Levels | 17% |
| B: Wye Valley & Wentwood | 27% |
| C: Central Monmouthshire - South | 41% |
| D: Central Monmouthshire – North | 46% |
| E: Bannau Brycheiniog & Black Mountains | 8% |
| F: Eastern South Wales Valleys | 1% |
| Monmouthshire | 31% |

**DIAGRAM D1.5 Productive Landscapes - Farmland**

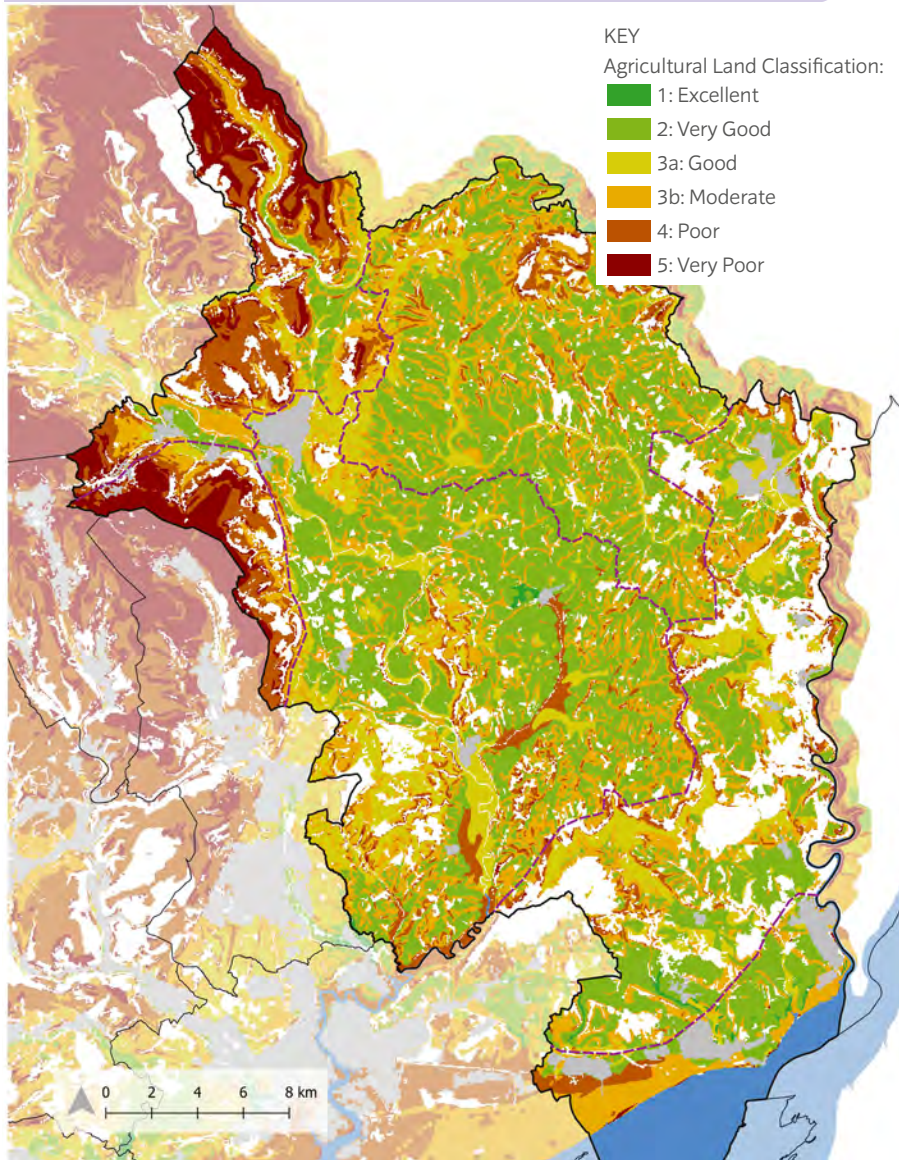
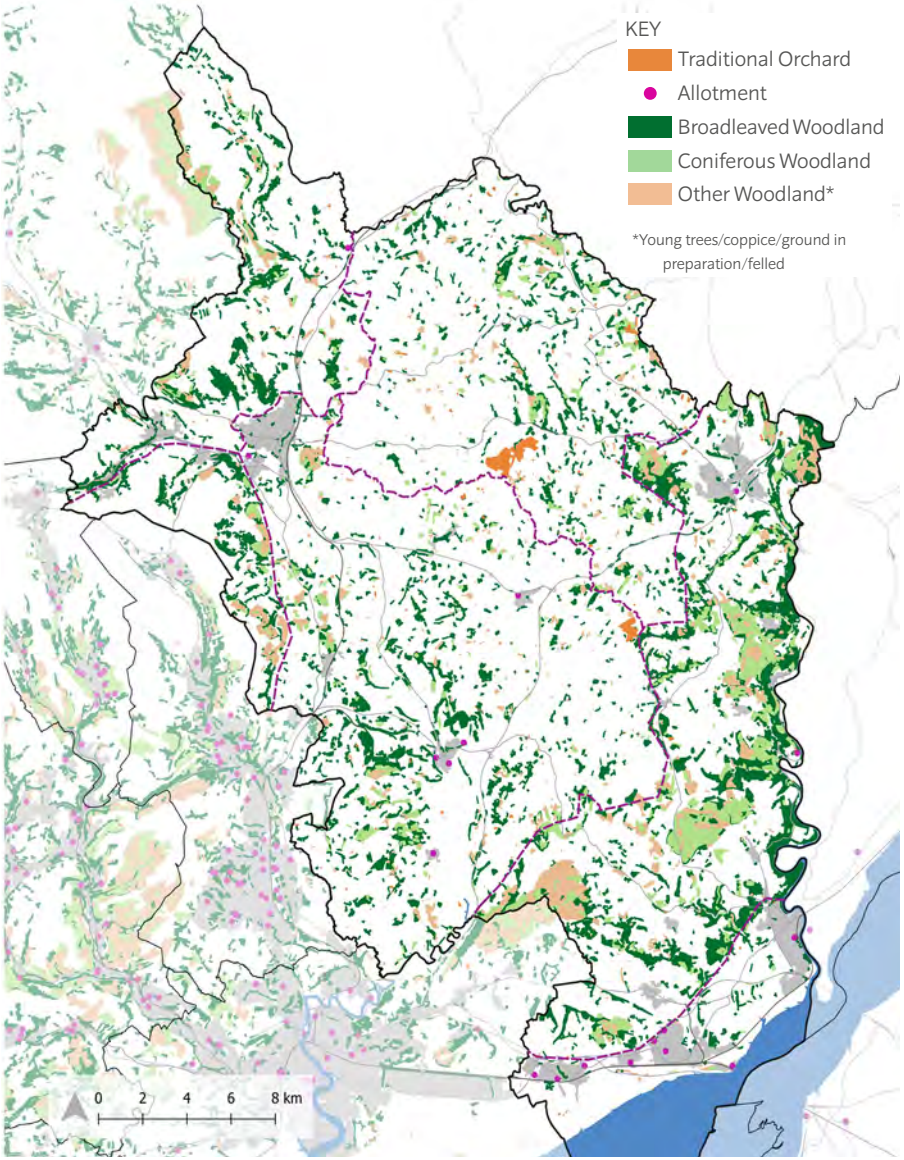


**DIAGRAM D1.6 Productive Landscapes - Woodland & Allotments**




Monmouthshire is a heavily wooded county (see **Diagram D1.6)**, particularly through the Wye Valley and in the south of the Usk Catchment. Large areas of this woodland in the county are also accessible, such as in the Wye Valley and Wentwood, where 3,384 Ha of a total 6,540 Ha are accessible.

Historically, orchards were a distinctive feature of the landscape found alongside farms, and in the south, orchards on the Gwent Levels produced their own specific apple and pear varieties. However, the end of cider making locally resulted in the loss of orchards, and in the Monmouthshire area of the Levels they are now limited to a few sites in the vicinity of Magor on the Caldicot Level. Elsewhere in the county, there are small scattered areas of traditional orchard remaining, with larger areas to the southeast of Llantilio Crosenny and southeast of Raglan. There are some small areas of allotments around the larger settlements.

| Zone | Woodland (% of Zone) | NRW Public Forest (Accessible) | Allotments |
|---|---|---|---|
| A: Gwent Levels | 199 Ha (3%) | 25 Ha | 9 |
| B: Wye Valley & Wentwood | 6,540 Ha (32%) | 3,384 Ha | 2 |
| C: Central Monmouthshire - South | 2,695 Ha (10%) | 85 Ha | 6 |
| D: Central Monmouthshire – North | 1,640 Ha (9%) | 12 Ha | 0 |
| E: Bannau Brycheiniog & Black Mountains | 1,623 Ha (15%) | 308 Ha | 1 |
| F: Eastern South Wales Valleys | 770 Ha (21%) | 160 Ha | 0 |
| Monmouthshire | 13,467 Ha (15%) | 3,974 Ha | 18 |

### Cemeteries and churchyards

In addition to providing important habitats for wildlife, cemeteries and churchyards (see **Diagram D1.7**) can also provide opportunities for quiet reflection and spiritual enrichment that contribute to people's well-being. Examples in Monmouthshire include urban cemeteries (such as Osbaston Cemetery in Monmouth), churchyards associated with small rural parish churches (such as St Teilo's Church, Llanarth, and St. Nicholas Church, Trellech) and cemeteries and churchyards on the edge of urban areas, such as Dewstow Road Cemetery on the northern side of Caldicot.

| Zone | Religious Grounds and Cemeteries* |
|---|---|
| A: Gwent Levels | 14 |
| B: Wye Valley & Wentwood | 28 |
| C: Central Monmouthshire - South | 53 |
| D: Central Monmouthshire – North | 25 |
| E: Bannau Brycheiniog & Black Mountains | 10 |
| F: Eastern South Wales Valleys | 4 |
| Monmouthshire | 134 |

*Nb - numbers taken from Ordance Survey Greenspace data. Diagram D1.7 includes both Ordnance Survey Greenspace data, and data from the Monmouthshire Open Space Study, 2008

**DIAGRAM D1.7 Cemeteries and Churchyards**

### Parks and gardens

Public parks and gardens (see **Diagram D1.8**) provide opportunities for informal recreation that can contribute to people's health and well-being, and also provide habitats for wildlife. There are few urban parks in the county, including Bailey Park in Abergavenny, and larger Country Parks include Caldicot Castle Country Park and Clytha Park near Abergavenny.

| Zone | Parks and Gardens |
|---|---|
| A: Gwent Levels | 2 |
| B: Wye Valley & Wentwood | 4 |
| C: Central Monmouthshire - South | 7 |
| D: Central Monmouthshire – North | 0 |
| E: Bannau Brycheiniog & Black Mountains | 1 |
| F: Eastern South Wales Valleys | 0 |
| Monmouthshire | 14 |

*Nb - numbers taken from Ordance Survey Greenspace data. Diagram D1.8 includes both Ordnance Survey Greenspace data, and data from the Monmouthshire Open Space Study, 2008

**DIAGRAM D1.8 Parks and Gardens**

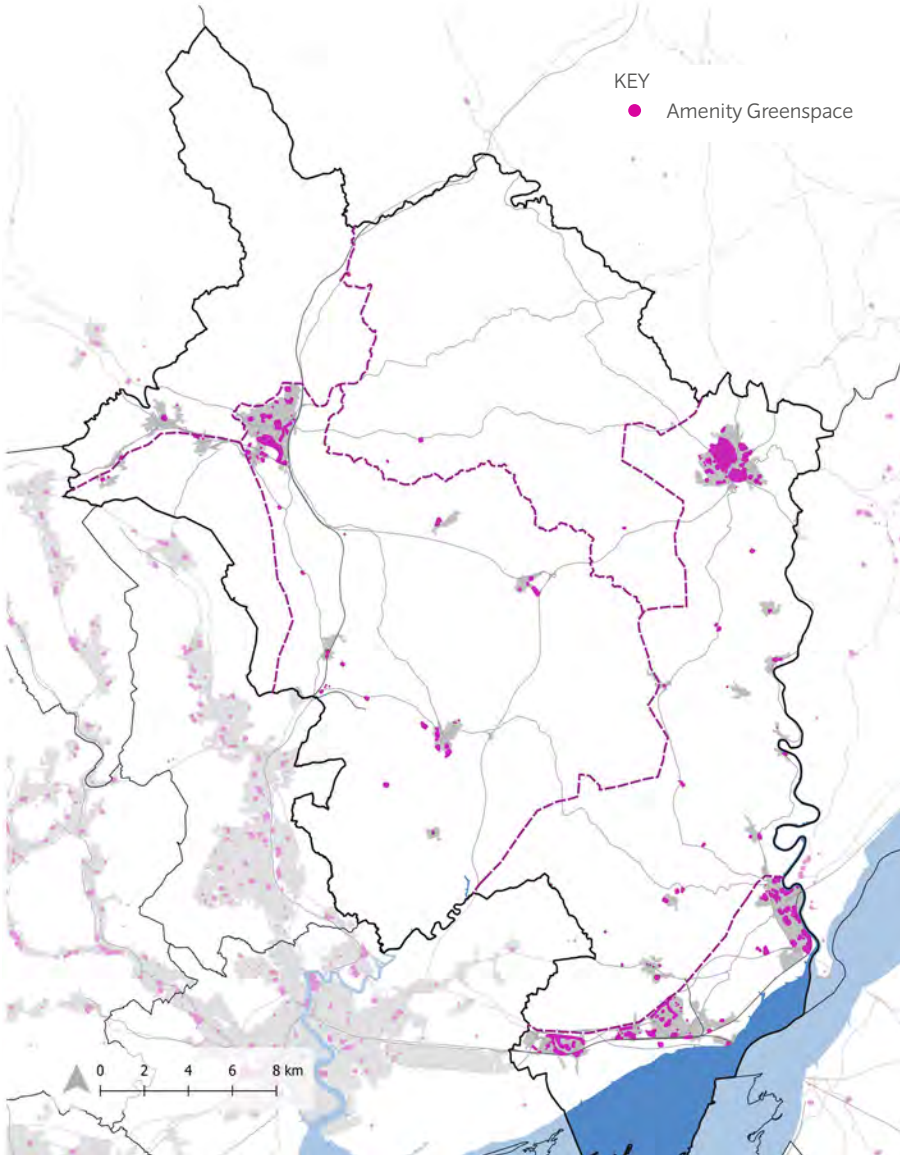
### Amenity greenspaces

Amenity greenspaces (see **Diagram D1.9**) predominantly provide opportunities for formal outdoor sports and recreation that contribute to people's health and well-being. Examples within the study area include formal amenity greenspaces associated with sports facilities (such as The Island Recreation Ground in Usk), and a range of more informal amenity greenspaces and play spaces in urban areas such as Stuart Avenue Open Space in Chepstow, and Tudor Road Open Space in Monmouth.

| Zone | Sports Playing Field* | Play Space* |
|---|---|---|
| A: Gwent Levels | 19 | 49 |
| B: Wye Valley & Wentwood | 15 | 35 |
| C: Central Monmouthshire - South | 19 | 35 |
| D: Central Monmouthshire – North | 2 | 3 |
| E: Bannau Brycheiniog & Black Mountains | 3 | 4 |
| F: Eastern South Wales Valleys | 2 | 4 |
| Monmouthshire | 59 | 130 |

*Nb - numbers taken from Ordance Survey Greenspace data. Diagram D1.9 includes both Ordnance Survey Greenspace data, and data from the Monmouthshire Open Space Study, 2008

**DIAGRAM D1.9 Amenity Greenspace**

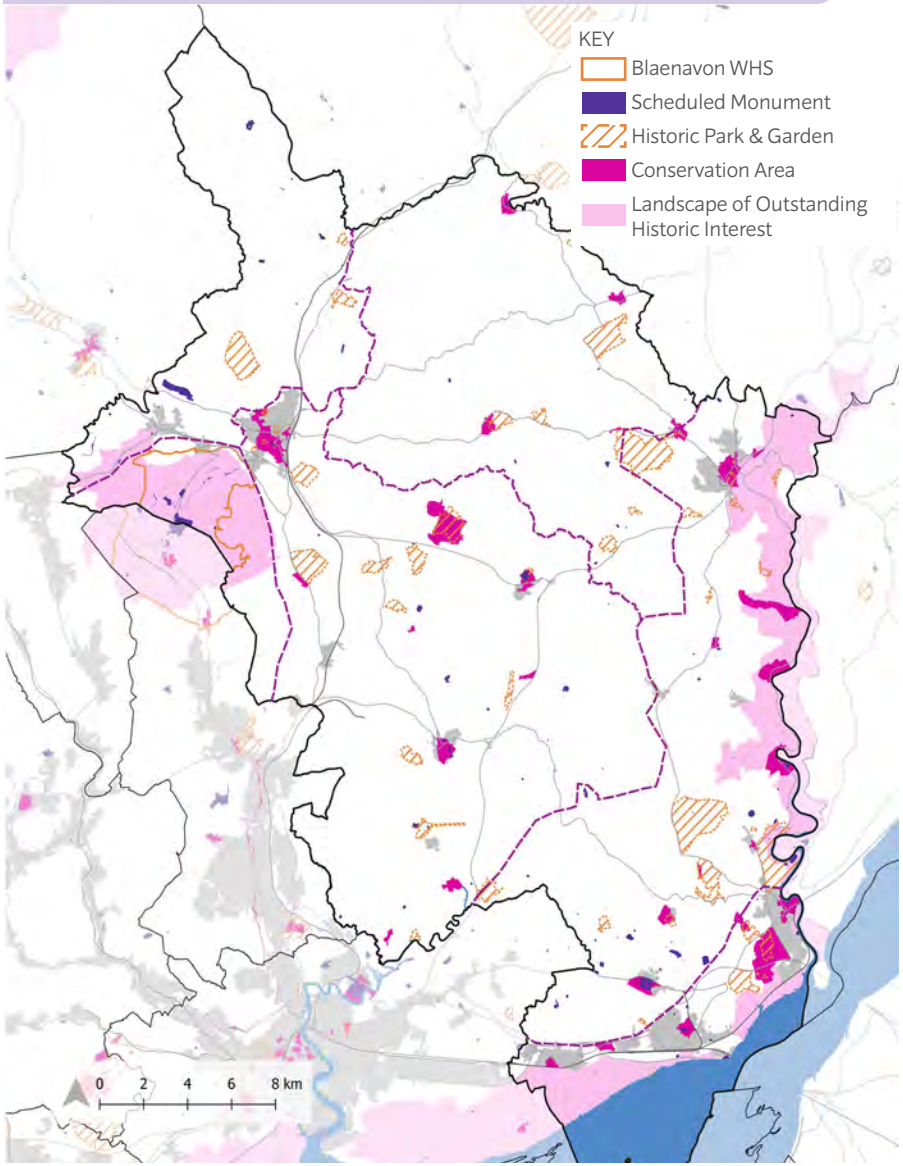


## Heritage Sites

Heritage sites (see **Diagram D1.10**) can provide opportunities for informal recreation and intellectual access to history that contributes to people's health and well-being. Examples in Monmouthshire include scheduled monuments such as Caldicot Castle and Tintern Abbey, as well as historic landscapes associated with the Blaenavon Industrial Landscape World Heritage Site, the Gwent Levels, and the Wye Valley.

| Zone | Scheduled Monmuments | Historic Parks & Gardens | Conservation Areas | Landscape of Outstanding Historic Interest |
|---|---|---|---|---|
| A: Gwent Levels | 27 | 6 | 6 | 3599 Ha |
| B: Wye Valley & Wentwood | 68 | 18 | 13 | 3694 Ha |
| C: Central Monmouthshire - South | 44 | 17 | 10 | 29 Ha |
| D: Central Monmouthshire – North | 24 | 8 | 5 | 0 Ha |
| E: Bannau Brycheiniog & Black Mountains | 23 | 3 | - | 311 Ha |
| F: Eastern South Wales Valleys | 15 | - | - | 2419 Ha |
| Monmouthshire | 201 | 52 | 34 | 10,053 Ha |

**DIAGRAM D1.10 Heritage Sites**



d2

# Ecosystem Services

## General

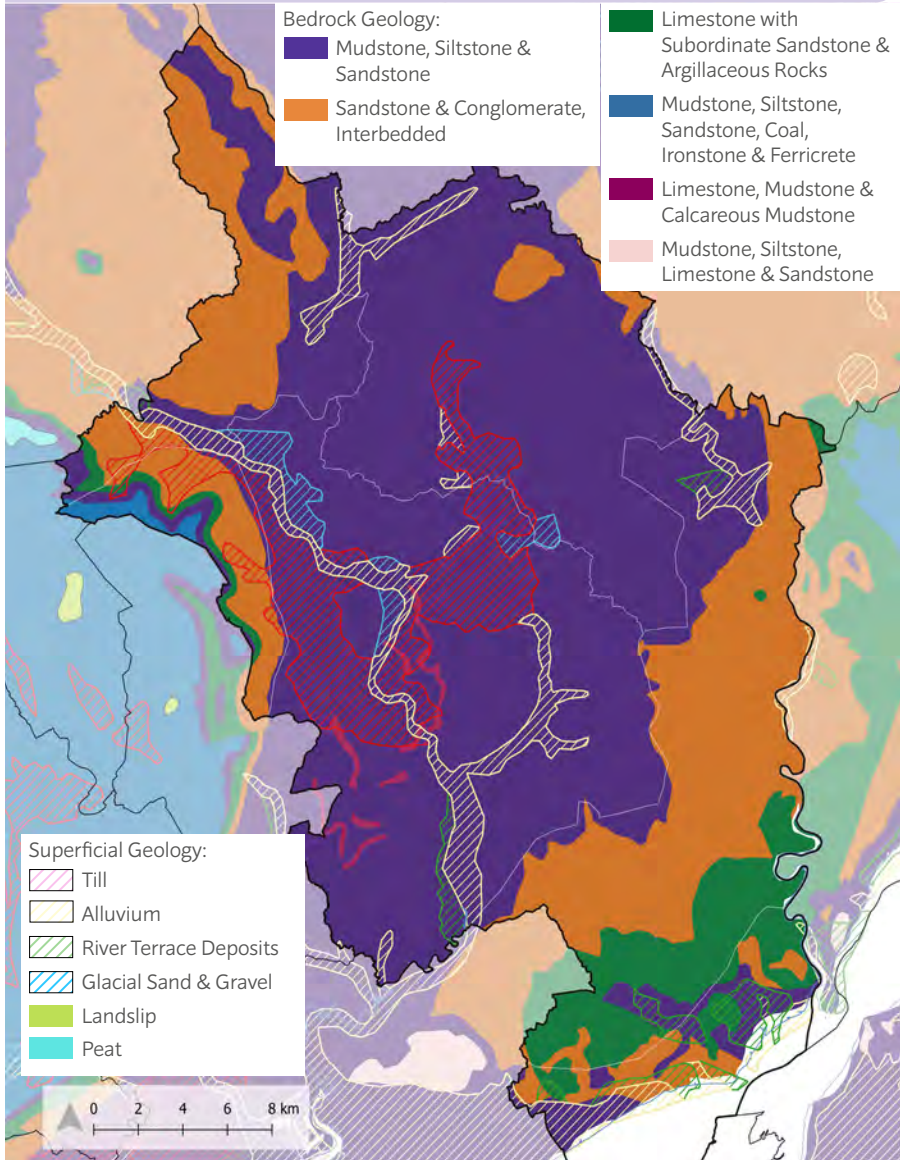
The GI assets identified in **Appendix D1** provide a wide range of benefits to society derived from the functions or ecosystems services that they provide.

A summary of the ecosystem services provided by the GI assets in each zone (**Diagram D2.1**) within Monnmouthshire is described below. These form the basis for identifying needs and opportunities for the GI Strategy.

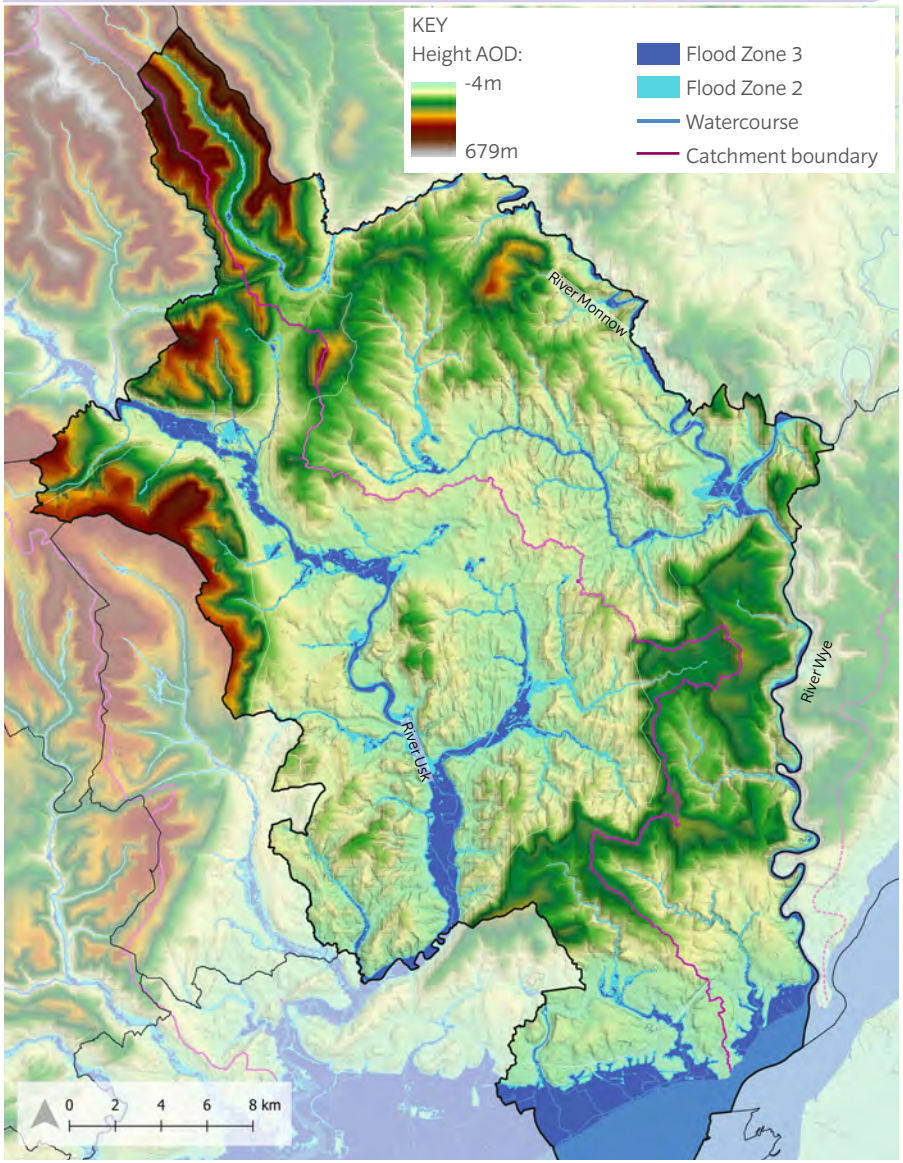
### DIAGRAM D2.1 GI Zones


The existing GI network represents GI assets defined by the following datasets: Greenspace Study (excluding non-natural greenspace), Open Space Study, county-wide public rights of way, county-wide designated sites of nature conservation value, county-wide designated features of historic value, county-wide watercourses and water bodies, predominantly undeveloped floodplains (flood risk areas), and county-wide woodlands. See Appendix B for details.

## DIAGRAM D2.2 Geology




## DIAGRAM D2.3 Topography & Hydrology



## Zone A: Gwent Levels

### Supporting Services

Supporting services are those which are essential to the functioning of ecosystems and indirectly responsible for all other services. This includes the relationship between underlying geology and soil character, soil formation and the processes of plant growth, including pollination.

Geology and soil character: The northern edge of the Gwent Levels is marked by the boundary between the slightly higher ground in the north, underlain by sedimentary rocks mainly of Lower Old Red sandstone age, and the lower, flatter land on reclaimed estuarine alluvium to the south (see **Diagram D2.2**). The estuarine alluvium is mainly a bluegrey, silty mud up to 13 metres thick that gives rise to heavy textured, poorly drained clayey soils. There are also some localised areas of peaty soils, such as south of Magor. These most commonly occur as a layer of peat covered by clayey topsoil, but where the soft black peat extends to the surface these areas are particularly wet.

Soil formation: In the context of the Gwent Levels, supporting services relate to the exchange of silts and nutrients between the reen system and the agricultural land. This interchange relies heavily on the regulation of water management and cyclical ditch management. The supply and replenishment of nutrients maintains soils, primary production (including agricultural productivity), as well as providing the basis for supporting the nature conservation value of the Gwent Levels.

Pollination: by insects also provides a supporting service for primary production to support both agricultural production and nature conservation. However, the serious consequences of significant declines in insect pollinator populations, considered largely to result from the loss of flower-rich habitat, habitat fragmentation and the use of certain pesticides, has been recognised in the government's National Pollinator Strategy[1] and the creation of initiatives such as B-Lines[2] to promote landscape-scale habitat creation to try and reverse the decline in pollinating insects.

1 Defra (November 2014). The National Pollinator Strategy: for bees and other pollinators in England.

2 https://www.buglife.org.uk/our-work/b-lines/b-lines-wales/

With respect to Monmouthshire as a whole, the green infrastructure action plan for pollinators in SE Wales[3] identifies those areas where pollinators directly contribute to supporting human life and food, notably where there is the high demand in urban areas for pollinators for fruit and vegetables in gardens and allotments. The action plan also points out that there is only a relatively small percentage of arable land that comprises crops such as oilseed rape which need pollinators, and this is concentrated in the lowland arable areas of Monmouthshire. Other areas such as, for example, nature reserves, have indirect requirements for pollinators.

The Action Plan provides a framework for identifying appropriate areas and types of land where interventions to support pollinators could be delivered, and provides a variety of recommendations and desired outcomes for measuring success. In terms of broad measures of success, the Action Plan reports a success rate of approximately 90% for the use of yellow rattle as a means of reducing the vigour of grass growth (thereby allowing a more floristically rich sward to develop) and it also identifies the inter-relationship between the County's 'cut and collect' grass mowing regime for maintaining grasslands (e.g. roadside verges), which is a key management tool in maintaining floral diversity, and the generation of biomass for energy production.

3 TACP (2015). Green infrastructure action plan for pollinators in South-east Wales. Report to Monmouthshire County Council on behalf of Monmouthshire County Council and Blaenau Gwent, Caerphilly and Torfaen County Borough Councils December 2015. TACP UK Ltd.

**Provisioning Services**

Provisioning services relate to the supply of goods such as freshwater, food and fuel.

Water availability: The Gwent Levels is largely a rain-fed system, with relatively limited inputs from river discharge. Water availability therefore largely relies on the relationship between rainfall inputs and the active management of water levels through the control structures that moderate flows and discharges. The abundance of water is key to maintaining the character and function of the area. The main abstractions are for public water supply; other abstractions are for industry and agriculture.

Food provision: The area primarily produces beef, milk and other dairy products, with some sheep flocks and arable production. A small number of traditional orchards of apples and pears are present. The extent to which the Gwent Levels remains a productive landscape is variable and is influenced by farm size, landholdings purchased for non-farming reasons, diversification of business activities that may include wind and solar power generation, holiday lets or similar and the separation between pasture on the Levels and the holdings that operate them.

All of these factors influence productivity and, importantly, how separate land parcels are managed in a landscape that requires a coherent approach to, for example, land drainage.

Fuel and fibre: There is limited potential for some biomass production from willow pollards, which has a longstanding tradition throughout the area. However, the volume of biomass that could realistically be harvested may restrict the size of any associated power plant. As an alternative the biomass could form one stream of supply to an existing plant, but the value of this would need to be considered in relation to the embedded energy costs associated with transportation. Other sources of renewable energy generation on the Gwent Levels include wind turbines and solar arrays. However, both these sources of power give rise to other considerations that include land take, drainage management and visual impacts associated with the introduction of prominent structures into the landscape.

The Renewable Energy Community Scheme (RECS)[4] completed a feasibility study in 2017 to consider the inter-relationship between small-scale 'green' energy generation and natural floodplain management to control surface water flooding. The feasibility study has been undertaken around Monmouth, but its key findings are intended to be applicable county-wide. The aims of the project were to:

- Identify acreage suitable for woodland planting which, with sustainable management provide fuel for community heating schemes, the contribution these plantings would make to the reduction of surface water run-off, any land management that would assist in additional reduction of surface water run-off;
- Advise on the contribution to the reduction of surface water run-off from community orchards; and,
- Identify suitable watercourses for the installation of micro hydro schemes with the direct benefit of providing power for local community use.

The Feasibility Study has also created a RECS 'Effectiveness Calculator', which estimates the reduction in run-off and flashiness of a run-off event that could result from a particular action or intervention, based on a suite of site specific data.

4 https://businesswales.gov.wales/walesruralnetwork/local-action-groups-and-projects/projects/recs-renewable-energy-community-schemes

**Regulating Services**

Regulating services maintain natural systems that include water quality flooding, soil erosion and coastal processes.

Climate regulation: There is limited carbon storage in the Gwent Levels predominantly due to the limited areas of peat soils. The majority of the Levels comprise loams derived from reclaimed estuarine alluvium.

Regulating water quality: The Gwent Levels, and the rivers that drain through it, fall within the Severn River Basin District. The 2022 River Basin Management Plan[5] identifies a range of factors that are detrimental to water quality in the River Basin District, such as over-abstraction, chemical inputs, plastics, pollution from agriculture and rural areas, pollution from towns, cities and transport, physical modifications, and invasive non-native species (eg. Japanese knotweed can increase riverbank erosion and may reduce the capacity of river channels, possibly leading to increased flooding).

Point source pollution from development and industry is also an influence on water quality. The water quality within the ditch and reen system of the Gwent Levels is considered to reflect the low flow and significant organic loading associated with the setting. During the summer months, natural organic degradation results in significant nutrient enrichment. The high productivity and low/absent flow also result in low levels of dissolved oxygen and elevated Biological Oxygen Demand (BOD) compared with other rivers. The regulation of water quality on the Levels is therefore largely determined by the control of urban and agricultural diffuse pollution and the management of the reen system.

Regulating water (flooding): The Gwent Levels are largely a rain fed system and although the rivers have been artificially modified to increase flows to the sea, they have only a limited influence on water levels (see **Diagram D2.3**). Nevertheless, Local Plan[6] policies (e.g. Policy SD3) provide specific requirements for surface water drainage relating to the management of surface water runoff from development, to manage flood risk from the landward side. The seawall, in combination with the maintenance of the ditch and reen network, is the primary means for regulating flows and preventing flooding to communities including Caldicot, Magor & Undy, Rogiet and Mathern, maintaining agricultural productivity and protecting the ecological interest of the Gwent Levels.

Regulating soil erosion and quality: Intensive and repeated cultivation and arable cropping increase the stress placed upon soils, and may lead to a reduction in soil quality and condition. Similarly, inappropriate livestock management can lead to poaching and erosion of surface vegetation and soils. Consequently, some areas suffer from damaged soil structure, notably compaction and impeded drainage which accelerates run-off or prolongs periods of standing water, which can impact vegetation and lead to soil exposures, which can increase sedimentation of watercourses.

Regulating coastal processes: The Gwent Levels within Monmouthshire comprise c.17.75km2 of reclaimed estuarine alluvium, forming a coastal plain up to 3.7km wide, fringing the northern side of the Severn Estuary. The Levels have been totally hand-crafted by humans, created through the enclosing and draining of tidal saltmarshes, and are still dominated today by the need to manage water. Without the sea wall, the Gwent Levels would be frequently inundated by the sea. The alignment of the sea defences is dynamic and has historically moved since Roman times. Climate change is likely to increase tidal flood risk; this will be exacerbated in low-lying areas where increased sea levels inhibit pumped land drainage. Tidal inundation within coastal areas could result in saline intrusion (although this is currently not an issue) into freshwater bodies, most of which are recognised for their nature conservation interest in SSSI designations and depend on fresh water. Coastal processes throughout the estuary are dynamic and of considerable importance, both within the estuary and to the low-lying adjacent land. The current policy for flood defences along the coast bordering the Gwent Levels is to 'hold the line'[7].

5 https://www.gov.uk/government/publications/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales

6 Monmouthshire County Council Adopted Local Development Plan 2011-2021 (Adopted February 2014)

7 The Shoreline Management Plan: Part B (Main Report) – Policy Statements. Report prepared by Atkins on behalf of Severn Estuary Coastal Group (2017)

**Cultural Services**

Cultural services provide direct, non-material, benefits to human society, addressing a range of social and cultural needs that encompass a sense of place and inspiration, a sense of history, tranquillity and recreation.

Sense of place and inspiration: The Gwent Levels landscape is perceived by different people in different ways. Some can find it featureless and intimidating, whereas others find it exhilarating and inspiring, valuing its strong sense of tranquillity and history, distinctive lifestyles and opportunities for recreation. The key qualities identified by the Landscape Character Assessment that give the Gwent Levels its unique sense of place are:

- The low horizon, level topography and broad skies, often augmented by dramatic cloudscapes, sunsets and sunrises.
- Strong linearity and distinctive geometric pattern of enclosure, drainage, watercourses, lanes and historic route-ways.
- Distinctive drainage pattern of canalised rivers, drains, reens and ditches, accentuated by lines of pollard willows.
- The sea wall, and banks carrying roads/droveways between farmsteads and villages, often form the only upstanding landscape features in some places.
- The large assemblages of waterfowl and waders that visit the coastal mudflats and wetlands, and the vast flocks -murmurations - of starlings gathering on the Levels in autumn and winter forming mesmeric and dramatic aerial displays.
- A sparse settlement pattern related to subtle topographical variations, the simple and utilitarian style of buildings often reflecting the functional nature of the landscape.
- In summer, a verdant and fertile landscape with lush vegetation across meadows and along watercourses; this contrasts with the often wild, bleak and sense of remoteness experienced on the Levels in winter.
- Vibrant cities and towns around the edge of the Levels reinforce its strong sense of tranquillity, remoteness and wildness away from human occupation in many places.

Sense of history: The Gwent Levels is a Historic Landscape of Outstanding Historic Interest. It is a landscape of extraordinarily diverse environmental and archaeological potential. Although they are an important wetland resource in their own right, archaeologically the area contains a variety of landscapes of different dates, and nowhere else is it possible to make the period distinctions so easily. Having been reclaimed from the sea at various times during the historic period, the present land surface is a supreme example of a 'hand-crafted' landscape, artificially created and entirely the work of humans, preserving clear evidence of distinctive patterns of settlement, enclosure and drainage systems. However, because of recurrent phases of inundation and alluviation, there is also a proven, and quite possibly vast, potential for extensive, buried, waterlogged, archaeological and palaeoenvironmental deposits belonging to the earlier landscapes, which extend beyond the seawalls and banks into the intertidal mudflats. The Levels are therefore a uniquely rich archaeological and historical resource in Wales, and certainly of international importance and significance.

Leisure and Recreation: The Gwent Levels landscape provides a range of outdoor leisure and recreation activities for local communities and visitors, in particular walking, cycling and bird-watching. Facilities and destinations include promoted recreational routes such as the Wales Coast Path; country parks (for example Caldicot Castle); nature reserves including Magor Marsh and Great Traston Meadows as well as a number of viillages including Magor/Undy. Angling, particularly off the seawall, is a common activity. Wildfowling is also active on the Levels.

## Zone B: Wye Valley and Wentwood

### Supporting Services

Supporting services are those which are essential to the functioning of ecosystems and indirectly responsible for all other services. This includes the relationship between underlying geology and soil character, soil formation and the processes of plant growth, including pollination.

Geology and soil character: The bedrock geology of the Wye Valley and Wentwood GI Zone is dominated by rocks ranging from Lower Devonian to Lower Carboniferous and record sedimentation in both terrestrial and marine environments (see **Diagram D2.2**). The Carboniferous sequence comprises a range of different lithologies including shale, sandstone, oolitic limestone and dolomite. Between Monmouth and Chepstow, the modern River Wye occupies a spectacular, deeply-incised meandering gorge. A remarkable feature of the reach is that although the gorge is entrenched to a depth of up to 200m, its meandering course displays no relationship to the geological structure, although it is likely that incision was enhanced by joint systems in the Palaeozoic bedrock [8].

Soil formation: The agricultural land of the Wye Valley and Wentwood GI Zone overlies relatively well draining brown earth soils and, as a consequence, there is a noticeable scarcity of marshy grassland/rush pasture7.

Pollination: by insects also provides a supporting service for primary production to support both agricultural production and nature conservation. However, the serious consequences of significant declines in insect pollinator populations, considered largely to result from the loss of flower-rich habitat, habitat fragmentation and the use of certain pesticides, has been recognised in the government's National Pollinator Strategy[9] and the creation of initiatives such as B-Lines[10] to promote landscape-scale habitat creation to try and reverse the decline in pollinating insects.

8 NRW (2014) Wye Valley and Wentwood NLCA (NLCA 32)

9 Defra (November 2014). The National Pollinator Strategy: for bees and other pollinators in England.

10 https://www.buglife.org.uk/our-work/b-lines/b-lines-wales/

With respect to Monmouthshire as a whole, the green infrastructure action plan for pollinators in SE Wales[11] identifies those areas where pollinators directly contribute to supporting human life and food, notably where there is the high demand in urban areas for pollinators for fruit and vegetables in gardens and allotments. The action plan also points out that there is only a relatively small percentage of arable land that comprises crops such as oilseed rape which need pollinators, and this is concentrated in the lowland arable areas of Monmouthshire. Other areas such as, for example, nature reserves, have indirect requirements for pollinators.

The Action Plan provides a framework for identifying appropriate areas and types of land where interventions to support pollinators could be delivered, and provides a variety of recommendations and desired outcomes for measuring success. In terms of broad measures of success, the Action Plan reports a success rate of approximately 90% for the use of yellow rattle as a means of reducing the vigour of grass growth (thereby allowing a more floristically rich sward to develop) and it also identifies the inter-relationship between the County's 'cut and collect' grass mowing regime for maintaining grasslands (e.g. roadside verges), which is a key management tool in maintaining floral diversity, and the generation of biomass for energy production. With specific reference to the Wye Valley and Wentwood GI Zone, the Action Plan broadly identifies high grassland species diversity along the Wye Valley and urban areas, with lower diversity in the uplands and in the intensive agricultural areas.

11 TACP (2015). Green infrastructure action plan for pollinators in South-east Wales. Report to Monmouthshire County Council on behalf of Monmouthshire County Council and Blaenau Gwent, Caerphilly and Torfaen County Borough Councils December 2015. TACP UK Ltd.

**Provisioning Services**

Provisioning services relate to the supply of goods such as freshwater, food and fuel.

Water availability: The Wye catchment area comprises the River Wye and a number of substantial tributaries, including the Monnow which runs along the northern boundary of the county. The River Wye is the sixth largest river in the UK, with a total catchment area of 4,171km2 spanning both England and Wales; approximately 10% of the catchment falls within Monmouthshire. The river is tidal for approximately 23km (14 miles) from the tidal limit at Bigsweir Bridge to Chepstow where it flows into the Severn Estuary. The annual average rainfall across the area varies between 2,200mm in the mountainous headwaters (outside Monmouthshire), to 700mm in the lower catchment. The lower Wye catchment, including Monmouthshire, has slightly permeable geology with groundwater providing a contribution to river flow. The River Wye is known as a 'regulated river'. Water is released from the Elan Valley Reservoirs in Mid-Wales to support public water supply and other abstractions in the lower reaches of the Wye, when flows fall below a certain threshold.

Food provision: Away from the Wye gorge, the area is characterised by low-lying, gently rolling farmland with much of the land being dominated by agriculturally improved, livestock grassland together with a significant element of arable farming on more fertile soils.

Fuel & fibre: In some parts of the county there is limited potential for some biomass production from willow pollards, particularly along main river courses and within the floodplains. More generally, the wooded character of Monmouthshire in general, and the Wye Valley in particular, also provide opportunities for wood fuel production either through the use of its extensive plantation forestry or as a by-product of other forest industry. However, the volume of biomass that could realistically be harvested may restrict the size of any associated power plant. As an alternative the biomass could form one stream of supply to an existing plant, but the value of this would need to be considered in relation to the embedded energy costs associated with transportation. Other sources of renewable energy generation in Monmouthshire generally include wind turbines and solar arrays. However, both these sources of power give rise to other considerations that include land take, drainage management and visual impacts associated with the introduction of prominent structures into the landscape.

The Renewable Energy Community Scheme[12] (RECS) completed a feasibility study in 2017 to consider the inter-relationship between small-scale 'green' energy generation and natural floodplain management to control surface water flooding. The feasibility study has been undertaken around Monmouth, but its key findings are intended to be applicable county-wide. The aims of the project were to:

- Identify acreage suitable for woodland planting which, with sustainable management provide fuel for community heating schemes, the contribution these plantings would make to the reduction of surface water run-off, any land management that would assist in additional reduction of surface water run-off;
- Advise on the contribution to the reduction of surface water run-off from community orchards; and,
- Identify suitable watercourses for the installation of micro hydro schemes with the direct benefit of providing power for local community use.

The Feasibility Study has also created a RECS 'Effectiveness Calculator', which estimates the reduction in run-off and flashiness of a run-off event that could result from a particular action or intervention, based on a suite of site specific data.

12 https://businesswales.gov.wales/walesruralnetwork/local-action-groups-and-projects/projects/recs-renewable-energy-community-schemes

**Regulating Services**

Regulating services maintain natural systems that include water quality, flooding, soil erosion and coastal processes.

Climate regulation: Climate change is predicted to affect the amount and distribution of rainfall; this has an impact on flows and water levels, drought and flood events. Work carried out in 2002 showed that by 2050 river flows in winter may rise by 10-15% but in the summer and early autumn could reduce by over 50% and as much as 80% in some places. As a consequence, droughts and flood events may become more common. Climate change may affect groundwater recharge. By 2025 it is likely that groundwater recharge will decrease, resulting in decreased dry weather river flows and a general lowering of groundwater levels. This may have impacts on base-flow to rivers and wetlands in dry periods and affect small domestic and agricultural water supplies. Further evidence has identified risks to aquifers and habitats from salt water intrusion[13].

Regulating water quality: The River is predominantly rural in nature; agriculture dominates with arable, dairy and sheep farms on generally sandy silty soils prone to erosion, particularly within its upper reaches.

The 2022 Severn River Basin Management Plan[14] identifies a range of factors that are detrimental to water quality in the River Basin District, such as over-abstraction, chemical inputs, plastics, pollution from agriculture and rural areas, pollution from towns, cities and transport, physical modifications, and invasive non-native species (eg. Japanese knotweed can increase riverbank erosion and may reduce the capacity of river channels, possibly leading to increased flooding).

A variety of management initiatives have been identified to maintain and improve water quality, including:

- Changes to water levels and flows - Natural Resources Wales and the Environment Agency work together to manage water levels and flows, including working together to licence new and previously exempt surface water and groundwater abstractions, ensuring the demand for water is more sustainable for the future.
- Invasive non-native species - The Wye and Usk Foundation and Natural Resources Wales and the Environment Agency are working in partnership to eradicate invasive non-native species on the River Wye. The work also needs to be extended to other cross border catchments, for example the River Monnow. They are also looking to develop joint protocols that reduce the risk of an accidental transfer of invasive non-native species during work on cross border rivers, for example whilst restocking eels.
- Physical modifications - Natural Resources Wales is developing an integrated River Restoration Programme to bring together related work across Wales. The aim is to take a nature-based approach to restore characteristic river habitat for the benefit of hydromorphology, water quality, biodiversity, fisheries and flood regulation.
- Pollution from agriculture and rural areas - Natural Resources Wales and the Environment Agency, with a range of stakeholders and partners, are addressing issues associated with how land and livestock are managed and exercising their pollution control powers to address diffuse pollution.
- Pollution from water industry waste water - Water quality modelling has been carried out for the next period of water company investment by Severn Trent Water and Welsh Water/Dŵr Cymru with input from the Environment Agency and Natural Resources Wales. Further work is being undertaken to finalise schemes in order to maximise benefits within catchments and further improve discharges from sewage treatment works and combined sewer overflows.

Regulating water (flooding): The Wye catchment has a wide variation of fluvial flooding issues ranging from extended periods of elevated levels within the River Wye Valley that affect many communities, flooding from tributaries of the River Wye, flooding from quickly responding catchments and tidal flooding from the Severn Estuary (see **Diagram D2.3**). In addition climate change is likely to increase the pressure on existing locations where surface water/sewer flooding occurs. The greatest threat to the lower catchment is from sea level rise which could increase flood risk significantly in low-lying areas.

13 The State of Natural Resources Report (SoNaRR): Assessment of the Sustainable Management of Natural Resources. Technical Report. Natural Resources Wales.

14 https://www.gov.uk/government/publications/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales

Environmental Objectives for the management of flood risk include:

- Restoration of sustainable natural storage of floodwater in the upstream area, in order to offset increasing flood risk from trends including climate change;
- Improving the water environment through flood risk management activities;
- Improving the hydro-morphology of rivers;
- Minimising impacts of flooding on designated sites or areas of environmental interest; and,
- Habitat creation through flood risk management activities.

Regulating soil erosion and quality: The soils of best quality and most productive agricultural land are a scarce and finite resource in Wales; accounting for less than 7% of land area. Soil quality has deteriorated across all habitats apart from woodlands where there has been some improvement. The severity and spatial extent of soil erosion has not been directly quantified in Wales. Around 10-15% of grassland fields in (England and) Wales are thought to be affected by severe soil compaction and 50-60% are in moderate condition. No data exists on compaction in grassland and arable land across Wales specifically. Topsoil carbon concentrations are generally stable and there is ongoing recovery from soil acidification. Although a significant decline in soil phosphorus levels has been seen for Improved Land, it remains above the optimum levels in many (44%) agricultural fields. Soil invertebrate (mesofauna) numbers indicate no overall trend. There has been little or no decline in elevated levels of soil contaminants from industry and transport. The UK Climate Change Risk Assessment 2022 Evidence Report[15] has identified risks to soils from increased seasonal aridity and wetness. Climate change related risks are threatening the many services that soils provide, notably those that relate to soil biota, soil organic matter, and soil erosion and compaction.

Regulating coastal processes: The role the River Wye plays in regulating coastal process is addressed in relation to The Gwent Levels.

15 HM Government UK Climate Change Risk Assessment 2022 https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022

**Cultural Services**

Cultural services provide direct, non-material, benefits to human society, addressing a range of social and cultural needs that encompass a sense of place and inspiration, a sense of history, tranquillity and recreation.

Sense of place and inspiration: In the Wye Valley special qualities identified include 'picturesque, extensive and dramatic views' and 'overall sense of tranquillity, sense of remoteness and naturalness/wildness'. This is an enclosed landscape, covered by the wooded high ground where, in its southern reaches, the River Wye is hidden by high cliffs. The only large settlement within this zone is the town of Monmouth, with its rich historical and cultural associations.

Sense of history: The Wye Valley is acknowledged to be one of the most scenically attractive lowland landscapes in Britain, and one of the few lowland Areas of Outstanding Natural Beauty. It is also one of the few remaining areas with comparatively large tracts of ancient broadleaved woodlands, whilst the pastures, hay meadows, hedges and copses of the farmed landscape in and around the valley are also rich natural habitats with historical significance. In 1770, the scenic qualities of the valley inspired the Reverend William Gilpin to write his important treatise on the notion and depiction of landscape as the Picturesque. Along with its artistic associations, the valley also has a rich archaeological legacy, from the prehistoric to the recent past, reflecting its importance as a communication route, a natural and political boundary, and a centre of religious life and of several early industries.

Leisure and recreation: The Wye valley is a scenic leisure destination, from Tintern Abbey and the village of Tintern Parva, to Monmouth, including its unique Monnow Bridge. Tintern and Monmouth offer good access to the river. More generally, however, the geology of the Wye Valley and the River Wye itself provide opportunities for leisure activities that include: canoeing, climbing, caving, as well as walking, cycling and horse riding through the area's extensive woodlands, whilst the Wye Valley River Festival provides a focus for the arts and culture. The annual Monmouth Festival provides a focus for the arts and culture.

## Zone C: Central Monmouthshire - South

### Supporting Services

Supporting services are those which are essential to the functioning of ecosystems and indirectly responsible for all other services. This includes the relationship between underlying geology and soil character, soil formation and the processes of plant growth, including pollination.

Geology and soil character: The central area between the River Usk and Monmouth is Silurian mudstones and shales surrounded by a large band of earlier, Devonian Old Red Sandstone (see **Diagram D2.2**). Morainic drift and boulder clay give rise to the fertile alluvial deposits that are key to the agricultural productivity in this rural area.

Soil formation: Geology has produced mainly well-drained, coarse loamy and sandy soils surrounded by finer silty soils over the shales, silts and sandstones[16].

Pollination: by insects also provides a supporting service for primary production to support both agricultural production and nature conservation. However, the serious consequences of significant declines in insect pollinator populations, considered largely to result from the loss of flower-rich habitat, habitat fragmentation and the use of certain pesticides, has been recognised in the government's National Pollinator Strategy and the creation of initiatives such as B-Lines to promote landscape-scale habitat creation to try and reverse the decline in pollinating insects.

With respect to Monmouthshire as a whole, the green infrastructure action plan for pollinators in SE Wales[17] identifies those areas where pollinators directly contribute to supporting human life and food, notably where there is the high demand in urban areas for pollinators for fruit and vegetables in gardens and allotments. The action plan also points out that there is only a relatively small percentage of arable land that comprises crops such as oilseed rape which need pollinators, and this is concentrated in the lowland arable areas of Monmouthshire. Other areas such as, for example, nature reserves, have indirect requirements for pollinators.

The Action Plan provides a framework for identifying appropriate areas and types of land where interventions to support pollinators could be delivered, and provides a variety of recommendations and desired outcomes for measuring success. In terms of broad measures of success, the Action Plan reports a success rate of approximately 90% for the use of yellow rattle as a means of reducing the vigour of grass growth (thereby allowing a more floristically rich sward to develop) and it also identifies the inter-relationship between the County's 'cut and collect' grass mowing regime for maintaining grasslands (e.g. roadside verges), which is a key management tool in maintaining floral diversity, and the generation of biomass for energy production. With specific reference to the Usk catchment, the Action Plan broadly identifies high grassland species diversity along parts of the Usk floodplain and urban areas, with lower diversity in the uplands and in the intensive agricultural areas. There are also currently bee walk transects in Usk.

16 NRW (2015) Central Monmouthshire NLCA (NLCA 31)

17 TACP (2015). Green infrastructure action plan for pollinators in South-east Wales. Report to Monmouthshire County Council on behalf of Monmouthshire County Council and Blaenau Gwent, Caerphilly and Torfaen County Borough Councils December 2015. TACP UK Ltd.

**Provisioning Services**

Provisioning services relate to the supply of goods such as freshwater, food and fuel.

Water availability: The Usk area extends outside the county from the Bannau Brycheiniog in the north to the low-lying agricultural land in the south. It includes the River Usk and its tributaries. The River Usk is approximately 121km long and the total catchment size 1,169km2, with approximately 30% of the catchment falling within Monmouthshire. The climate is mild and wet, receiving an annual average rainfall of 1,700mm in the uplands and 1,100mm in the lowlands (compared with 1,310mm for Wales as a whole). The headwaters and some of its tributaries are modified by dams to create the Usk, Crai, Talybont and Grwyne Fawr reservoirs. At Brecon some of the river's flow is diverted to feed the Monmouthshire and Brecon Canal and water from the lower River Usk is pumped to Llandegvedd water storage reservoir [18].

Food provision: Much of the central and southern parts of Monmouthshire are utilised for sheep grazing and dairy farming, with some smaller areas of arable farming on the fertile floodplain where good drainage allows. A small number of traditional orchards are present. In the northwest of the county, higher land, much of which are commons, tends to be sheep grazed, with small scale enclosed sheep and dairy pasture on the lower slopes and valleys. Some localised areas of farmland have been turned over to other uses, including diversification of business activities such as solar or wind power generation. These diversifying factors can influence productivity and, importantly, how separate land parcels are managed in a landscape that requires a coherent approach to, for example, land drainage. Abergavenny maintains a livestock market.

Fuel & fibre: In some parts of the county there is limited potential for some biomass production from willow pollards, particularly along main river courses and within the floodplains. The wooded character of Monmouthshire in general may also provide opportunities for wood fuel production as a by-product of other forest industry. However, the volume of biomass that could realistically be harvested may restrict the size of any associated power plant. As an alternative the biomass could form one stream of supply to an existing plant, but the value of this would need to be considered in relation to the embedded energy costs associated with transportation. Other sources of renewable energy generation in Monmouthshire include wind turbines and solar arrays (e.g. the solar farm development at Llancayo in the Usk Valley). However, both these sources of power give rise to other considerations that include land take, drainage management and visual impacts associated with the introduction of prominent structures into the landscape.

The Renewable Energy Community Scheme[19] (RECS) completed a feasibility study in 2017 to consider the inter-relationship between small-scale 'green' energy generation and natural floodplain management to control surface water flooding. The feasibility study has been undertaken around Monmouth, but its key findings are intended to be applicable county-wide. The aims of the project were to:

- Identify acreage suitable for woodland planting which, with sustainable management provide fuel for community heating schemes, the contribution these plantings would make to the reduction of surface water run-off, any land management that would assist in additional reduction of surface water run-off;
- Advise on the contribution to the reduction of surface water run-off from community orchards; and,
- Identify suitable watercourses for the installation of micro hydro schemes with the direct benefit of providing power for local community use.

The Feasibility Study has also created a RECS 'Effectiveness Calculator', which estimates the reduction in run-off and flashiness of a run-off event that could result from a particular action or intervention, based on a suite of site specific data.

18 Environment Agency (December 2015). Part 1: Severn River Basin District River Basin Management Plan. On behalf of Defra, Welsh Government, Natural Resources Wales and Environment Agency.

19 https://businesswales.gov.wales/walesruralnetwork/local-action-groups-and-projects/projects/recs-renewable-energy-community-schemes

**Regulating Services**

Regulating services maintain natural systems that include water quality, flooding, soil erosion and coastal processes.

Climate regulation: Climate change is predicted to affect the amount and distribution of rainfall; this has an impact on flows and water levels, drought and flood events. Work carried out in 2002 showed that by 2050 river flows in winter may rise by 10-15% but in the summer and early autumn could reduce by over 50% and as much as 80% in some places. As a consequence, droughts and flood events may become more common. Climate change may affect groundwater recharge. By 2025 it is likely that groundwater recharge will decrease, resulting in decreased dry weather river flows and a general lowering of groundwater levels. This may have impacts on base-flow to rivers and wetlands in dry periods and affect small domestic and agricultural water supplies. Further evidence has identified risks to aquifers and habitats from salt water intrusion.

Regulating water quality: Land is predominantly used for agriculture, with sheep farming in the northern and western uplands, and beef, dairy, mixed and arable farming in the lowlands of the south and east. As a result, pollution from rural sources is considered a major threat to the ecological quality of the water environment. There is some limited industry in the major towns. Pollution from sewage and contaminated run-off is a pressure in the urban areas. The 2022 Severn River Basin Management Plan[20] identifies a range of factors that are detrimental to water quality in the River Basin District, such as over-abstraction, chemical inputs, plastics, pollution from agriculture and rural areas, pollution from towns, cities and transport, physical modifications, and invasive non-native species (eg. Japanese knotweed can increase riverbank erosion and may reduce the capacity of river channels, possibly leading to increased flooding).

Local measures[21] include implementing changes to land drainage regimes and structures to restore water levels, removing or modify barriers to fish passage, reducing impacts of regulated flows and abstractions and restoring more natural flow regimes, eradication and/or management of invasive non-native species including biosecurity good practice, such as "CHECKCLEAN-DRY" and Be Plant Wise; and implementing measures such as correct management of slurry, silage, fuel oil, and agricultural chemicals; clean and dirty water separation; nutrient management planning; buffer strips and riparian fencing; cover crops and soil management.

Regulating water (flooding): The upper part of the Usk catchment, into the Bannau Brycheiniog, demonstrates a flow regime with rapid rainfall runoff, caused by the steep sided narrow valleys and thin soils underlain by mainly impermeable rock; resulting in the lower reach floodplains becoming inundated during periods of heavy rainfall (see **Diagram D2.3**). The lower Usk tends to be less responsive to rainfall due to the larger catchment area and lowland relief. Objectives to reduce flooding set out in Monmouthshire's Flood Risk Management Plan which relate to the Usk catchment, include:

- Sustainable and Strategic Development Planning requiring proposals to demonstrate that they can be both protected from, and not exacerbate, flood events;
- Improved soils, reduction in soil wash off land and increased soil permeability.
- Water Cycle Strategy to facilitate sustainable development;
- The expectation that future development will incorporate Sustainable Urban Drainage Systems (SUDs) into their design to reduce surface water run-off and minimise its contribution to flood risk elsewhere;
- Encouraging sustainable land management practice to reduce surface water runoff and contamination, as well as the adoption of soil management plans to reduce runoff and improve soil permeability;
- Site restoration that focuses on soft, rather than hard, engineering solutions to create semi-natural environments;
- Environmental enhancements and habitat creation initiatives.

20 https://www.gov.uk/government/publications/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales

21 https://naturalresources.wales/media/3214/usk-management-catchment.pdf

Regulating soil erosion and quality: The soils of best quality and most productive agricultural land are a scarce and finite resource in Wales; accounting for less than 7% of land area. Soil quality has deteriorated across all habitats apart from woodlands where there has been some improvement. The severity and spatial extent of soil erosion has not been directly quantified in Wales. Around 10-15% of grassland fields in (England and) Wales are thought to be affected by severe soil compaction and 50-60%are in moderate condition. No data exists on compaction in grassland and arable land across Wales specifically. Topsoil carbon concentrations are generally stable and there is ongoing recovery from soil acidification. Although a significant decline in soil phosphorus levels has been seen for Improved Land, it remains above the optimum levels in many (44%) agricultural fields. Soil invertebrate (mesofauna) numbers indicate no overall trend. There has been little or no decline in elevated levels of soil contaminants from industry and transport. The UK Climate Change Risk Assessment 2022 Evidence Report[22] has identified risks to soils from increased seasonal aridity and wetness. Climate change related risks are threatening the many services that soils provide, notably those that relate to soil biota, soil organic matter, and soil erosion and compaction.

22 HM Government UK Climate Change Risk Assessment 2022 https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022

**Cultural Services**

Cultural services provide direct, non-material, benefits to human society, addressing a range of social and cultural needs that encompass a sense of place and inspiration, a sense of history, tranquillity and recreation.

Sense of place and inspiration: The Usk catchment, as it winds its way between the foothills of the Bannau Brycheiniog and Newport and the Severn estuary, passes through wooded rolling countryside comprising predominantly pastoral farmland and small village settlements. Overall, this part of Monmouthshire is fairly tranquil, with large areas categorised in the 2009 tranquil areas assessment as 'undisturbed' (countryside usually free of any substantial disturbance in daytime). The only large settlements within this zone are the towns of Abergavenny and Usk, with their rich historical and cultural associations.

Sense of history: This large area has a varied distribution of archaeological sites and monuments dating back to the prehistoric period. Strategically located Iron Age hillforts on summit tops overlook the Usk valley and accentuate the topography. The richness of the agricultural land led to successive 'colonisations' by a sequence of Roman, Early Christian, Norman and Marcher Lordship societies. The area is rich in mediaeval castles and fortified manors and Medieval churches with distinctive stone crosses [23].

Leisure and recreation: The Usk catchment within Monmouthshire offers opportunities for walking and cycling. The River Usk and its tributaries are noted for their fishing. This area of the County also offers many historical sites and towns to visit. Llandegfedd reservoir offers a variety of water sports and outdoor activities including canoeing, sailing and windsurfing, as well as opportunities for fishing, walking and bird watching. The Raglan music festival is staged annually.

23 NRW (2015) Central Monmouthshire NLCA (NLCA 31)

## Zone D: Central Monmouthshire - North

### Supporting Services

Supporting services are those which are essential to the functioning of ecosystems and indirectly responsible for all other services. This includes the relationship between underlying geology and soil character, soil formation and the processes of plant growth, including pollination.

Geology and soil character: Fault-aligned vales and glacial deposits give rise to the fertile alluvial deposits that are key to the prosperity of this rural, farmed area. The underlying geology of this area largely comprises Silurian argillaceous mudstones and shales surrounded by Old Red Sandstone from the earlier, Lower Devonian period (see **Diagram D2.2**). These rocks were later folded during the Carboniferous period, and subsequently much faulted as, for example, along the northern margin of the area, where the course of the Monnow valley between Alltyrynys and Monmouth Cap is strongly controlled by the east north east-striking Neath Disturbance, a large fault zone which probably lies above a major fracture in basement rocks deep below[24].

Soil formation: Geology has produced mainly well-drained, coarse loamy and sandy soils surrounded by finer silty soils over the shales, silts and sandstones.

Pollination: by insects also provides a supporting service for primary production to support both agricultural production and nature conservation. However, the serious consequences of significant declines in insect pollinator populations, considered largely to result from the loss of flower-rich habitat, habitat fragmentation and the use of certain pesticides, has been recognised in the government's National Pollinator Strategy[25] and the creation of initiatives such as B-Lines[26] to promote landscape-scale habitat creation to try and reverse the decline in pollinating insects.

24 NRW (2015) Central Monmouthshire NLCA (NLCA 31)

25 Defra (November 2014). The National Pollinator Strategy: for bees and other pollinators in England.

26 https://www.buglife.org.uk/our-work/b-lines/b-lines-wales/

With respect to Monmouthshire as a whole, the green infrastructure action plan for pollinators in SE Wales[27] identifies those areas where pollinators directly contribute to supporting human life and food, notably where there is the high demand in urban areas for pollinators for fruit and vegetables in gardens and allotments. The action plan also points out that there is only a relatively small percentage of arable land that comprises crops such as oilseed rape which need pollinators, and this is concentrated in the lowland arable areas of Monmouthshire. Other areas such as, for example, nature reserves, have indirect requirements for pollinators.

The Action Plan provides a framework for identifying appropriate areas and types of land where interventions to support pollinators could be delivered, and provides a variety of recommendations and desired outcomes for measuring success. In terms of broad measures of success, the Action Plan reports a success rate of approximately 90% for the use of yellow rattle as a means of reducing the vigour of grass growth (thereby allowing a more floristically rich sward to develop) and it also identifies the inter-relationship between the County's 'cut and collect' grass mowing regime for maintaining grasslands (e.g. roadside verges), which is a key management tool in maintaining floral diversity, and the generation of biomass for energy production.

27 TACP (2015). Green infrastructure action plan for pollinators in South-east Wales. Report to Monmouthshire County Council on behalf of Monmouthshire County Council and Blaenau Gwent, Caerphilly and Torfaen County Borough Councils December 2015. TACP UK Ltd

**Provisioning Services**

Provisioning services relate to the supply of goods such as freshwater, food and fuel.

Water availability: The Wye catchment area comprises the River Wye and a number of substantial tributaries, including the Monnow which runs along the northern boundary of the county. The River Wye is the sixth largest river in the UK, with a total catchment area of 4,171 km2 spanning both England and Wales; approximately 10% of the catchment falls within Monmouthshire. The river is tidal for approximately 23 km (14 miles) from the tidal limit at Bigsweir Bridge to Chepstow where it flows into the Severn Estuary. The annual average rainfall across the area varies between 2,200 mm in the mountainous headwaters (outside Monmouthshire), to 700 mm in the lower catchment. The lower Wye catchment, including Monmouthshire, has slightly permeable geology with groundwater providing a contribution to river flow. The River Wye is known as a 'regulated river'. Water is released from the Elan Valley Reservoirs in Mid-Wales to support public water supply and other abstractions in the lower reaches of the Wye, when flows fall below a certain threshold.

Food provision: Much of the central and southern parts of Monmouthshire are utilised for sheep grazing and dairy farming, with some smaller areas of arable farming on the fertile floodplain where good drainage allows. A small number of traditional orchards are present. In the northwest of the county, higher land, much of which are commons, tends to be sheep grazed, with small scale enclosed sheep and dairy pasture on the lower slopes and valleys. Some localised areas of farmland have been turned over to other uses, including diversification of business activities such as solar or wind power generation. These diversifying factors can influence productivity and, importantly, how separate land parcels are managed in a landscape that requires a coherent approach to, for example, land drainage.

Fuel & fibre: In some parts of the county there is limited potential for some biomass production from willow pollards, particularly along main river courses and within the floodplains. The wooded character of Monmouthshire generally may also provide opportunities for wood fuel production as a by-product of other forest industry. However, the volume of biomass that could realistically be harvested may restrict the size of any associated power plant. As an alternative the biomass could form one stream of supply to an existing plant, but the value of this would need to be considered in relation to the embedded energy costs associated with transportation. Other sources of renewable energy generation in Monmouthshire include wind turbines and solar arrays. However, both these sources of power give rise to other considerations that include land take, drainage management and visual impacts associated with the introduction of prominent structures into the landscape.

The Renewable Energy Community Scheme [28] (RECS) completed a feasibility study in 2017 to consider the inter-relationship between small-scale 'green' energy generation and natural floodplain management to control surface water flooding. The feasibility study has been undertaken around Monmouth, but its key findings are intended to be applicable county-wide. The aims of the project were to:

- Identify acreage suitable for woodland planting which, with sustainable management provide fuel for community heating schemes, the contribution these plantings would make to the reduction of surface water run-off, any land management that would assist in additional reduction of surface water run-off;
- Advise on the contribution to the reduction of surface water run-off from community orchards; and,
- Identify suitable watercourses for the installation of micro hydro schemes with the direct benefit of providing power for local community use.

The Feasibility Study has also created a RECS 'Effectiveness Calculator', which estimates the reduction in run-off and flashiness of a run-off event that could result from a particular action or intervention, based on a suite of site specific data.

28 https://businesswales.gov.wales/walesruralnetwork/local-action-groups-and-projects/projects/recs-renewable-energy-community-schemes

**Regulating Services**

Regulating services maintain natural systems that include water quality, flooding, soil erosion and coastal processes.

Climate regulation: Climate change is predicted to affect the amount and distribution of rainfall; this has an impact on flows and water levels, drought and flood events. Work carried out in 2002 showed that by 2050 river flows in winter may rise by 10-15% but in the summer and early autumn could reduce by over 50% and as much as 80% in some places. As a consequence, droughts and flood events may become more common. Climate change may affect groundwater recharge. By 2025 it is likely that groundwater recharge will decrease, resulting in decreased dry weather river flows and a general lowering of groundwater levels. This may have impacts on base-flow to rivers and wetlands in dry periods and affect small domestic and agricultural water supplies. Further evidence has identified risks to aquifers and habitats from salt water intrusion [29].

Regulating water quality: The 2022 Severn River Basin Management Plan[30] identifies a range of factors that are detrimental to water quality in the River Basin District, such as over-abstraction, chemical inputs, plastics, pollution from agriculture and rural areas, pollution from towns, cities and transport, physical modifications, and invasive non-native species (eg. Japanese knotweed can increase riverbank erosion and may reduce the capacity of river channels, possibly leading to increased flooding). Challenges are likely to result from the largely rural nature of the watershed where agriculture dominates with arable, dairy and sheep farms on generally sandy silty soils prone to erosion, particularly within its upper reaches.

A variety of management initiatives have been identified to maintain and improve water quality, including:

- The use of buffer strips to control and regulate the deposition of silt into watercourses and control erosion;
- Improvements to water treatment and restrictions on groundwater abstraction;
- Increases in winter storage reservoirs;
- Use of SuDS and river buffer zones to reduce flooding, soil and nutrient loss;
- Provision of habitat such as buffer strips, fish passes, improvements to riverbank condition;
- Improvements in water quality to support recreation and tourism;
- Reduction in the use of fertilizers to no more than is needed, to protect groundwater aquifers.

Regulating water (flooding): The Wye catchment has a wide variation of fluvial flooding issues ranging from extended periods of elevated levels within the River Wye Valley that affect many communities, flooding from tributaries of the River Wye, flooding from quickly responding catchments and tidal flooding from the Severn Estuary (see **Diagram D2.3**). In addition climate change is likely to increase the pressure on existing locations where surface water/sewer flooding occurs. The greatest threat to the lower catchment is from sea level rise which could increase flood risk significantly in Chepstow and surrounding low-lying areas. Environmental Objectives for the management of flood risk include:

- Restoration of sustainable natural storage of floodwater in the upstream area, in order to offset increasing flood risk from trends including climate change;
- Improving the water environment through flood risk management activities;
- Improving the hydro-morphology of rivers;
- Minimising impacts of flooding on designated sites or areas of environmental interest; and,
- Habitat creation through flood risk management activities.

29 The State of Natural Resources Report (SoNaRR): Assessment of the Sustainable Management of Natural Resources. Technical Report. Natural Resources Wales.

30 https://www.gov.uk/government/publications/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales/severn-river-basin-management-plan-summary-and-cross-border-catchments-england-and-wales

Regulating soil erosion and quality: The soils of best quality and most productive agricultural land are a scarce and finite resource in Wales; accounting for less than 7% of land area. Soil quality has deteriorated across all habitats apart from woodlands where there has been some improvement. The severity and spatial extent of soil erosion has not been directly quantified in Wales. Around 10-15% of grassland fields in (England and) Wales are thought to be affected by severe soil compaction and 50-60%are in moderate condition. No data exists on compaction in grassland and arable land across Wales specifically. Topsoil carbon concentrations are generally stable and there is ongoing recovery from soil acidification. Although a significant decline in soil phosphorus levels has been seen for Improved Land, it remains above the optimum levels in many (44%) agricultural fields. Soil invertebrate (mesofauna) numbers indicate no overall trend. There has been little or no decline in elevated levels of soil contaminants from industry and transport. The UK Climate Change Risk Assessment 2022 Evidence Report[31] has identified risks to soils from increased seasonal aridity and wetness. Climate change related risks are threatening the many services that soils provide, notably those that relate to soil biota, soil organic matter, and soil erosion and compaction10.

Regulating coastal processes: The role the River Wye plays in regulating coastal process is addressed in relation to The Gwent Levels.

31 HM Government UK Climate Change Risk Assessment 2022 https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022

**Cultural Services**

Cultural services provide direct, non-material, benefits to human society, addressing a range of social and cultural needs that encompass a sense of place and inspiration, a sense of history, tranquillity and recreation.

Sense of place and inspiration: The Wye catchment, as it winds its way between the foothills of the Bannau Brycheiniog and the Wye Valley National Landscape AONB, passes through wooded rolling countryside comprising predominantly pastoral farmland and small village settlements. Overall, this part of Monmouthshire is fairly tranquil, with large areas categorised in the 2009 tranquil areas assessment as 'undisturbed' (countryside usually free of any substantial disturbance in daytime).

Sense of history: This large area has a varied distribution of archaeological sites and monuments dating back to the prehistoric period. Strategically located Iron Age hillforts on summit tops overlook the Wye valley and accentuate the topography. The richness of the agricultural land led to successive 'colonisations' by a sequence of Roman, Early Christian, Norman and Marcher Lordship societies. The area is rich in mediaeval castles and fortified manors and Medieval churches with distinctive stone crosses.[32]

Leisure and recreation: The Wye catchment within Monmouthshire offers opportunities for walking and cycling. The River Wye and its tributaries are noted for their fishing. This area of the County also offers many historical sites to visit.

32 NRW (2015) Central Monmouthshire NLCA (NLCA 31)

## Zone E: Bannau Brycheiniog and Black Mountains

### Supporting Services

Supporting services are those which are essential to the functioning of ecosystems and indirectly responsible for all other services. This includes the relationship between underlying geology and soil character, soil formation and the processes of plant growth, including pollination.

Geology and soil character: The parts of the Bannau Brycheiniogthat fall within the county are predominantly Devonian Old Red Sandstone (see **Diagram D2.2**). Generally, Monmouthshire's localised areas of poor to very poor quality soils occur mostly within the Bannau Brycheiniogover the higher ground.

Soil formation: Agriculture relies on soil formation, nutrients, water flow and pollination. The uplands play a significant role in water storage, quality and release, providing a natural defence against both drought and flood. As long as they are free from the effects of heavy grazing, upland peat bogs store carbon and combat atmospheric pollution. They capture atmospheric carbon which helps mitigate the effects of climate change[33].

Pollination: by insects also provides a supporting service for primary production to support both agricultural production and nature conservation. However, the serious consequences of significant declines in insect pollinator populations, considered largely to result from the loss of flower-rich habitat, habitat fragmentation and the use of certain pesticides, has been recognised in the government's National Pollinator Strategy[34] and the creation of initiatives such as B-Lines[35] to promote landscape-scale habitat creation to try and reverse the decline in pollinating insects.

33 The Management Plan For Bannau Brycheiniog National Park 2023-2028

34 Defra (November 2014). The National Pollinator Strategy: for bees and other pollinators in England.

35 https://www.buglife.org.uk/our-work/b-lines/b-lines-wales/

With respect to Monmouthshire as a whole, the green infrastructure action plan for pollinators in SE Wales[36] identifies those areas where pollinators directly contribute to supporting human life and food, notably where there is the high demand in urban areas for pollinators for fruit and vegetables in gardens and allotments. The action plan also points out that there is only a relatively small percentage of arable land that comprises crops such as oilseed rape which need pollinators, and this is concentrated in the lowland arable areas of Monmouthshire. Other areas such as, for example, nature reserves, have indirect requirements for pollinators.

The Action Plan provides a framework for identifying appropriate areas and types of land where interventions to support pollinators could be delivered, and provides a variety of recommendations and desired outcomes for measuring success. In terms of broad measures of success, the Action Plan reports a success rate of approximately 90% for the use of yellow rattle as a means of reducing the vigour of grass growth (thereby allowing a more floristically rich sward to develop) and it also identifies the inter-relationship between the County's 'cut and collect' grass mowing regime for maintaining grasslands (e.g. roadside verges), which is a key management tool in maintaining floral diversity, and the generation of biomass for energy production.

36 TACP (2015). Green infrastructure action plan for pollinators in South-east Wales. Report to Monmouthshire County Council on behalf of Monmouthshire County Council and Blaenau Gwent, Caerphilly and Torfaen County Borough Councils December 2015. TACP UK Ltd.

**Provisioning Services**

Provisioning services relate to the supply of goods such as freshwater, food and fuel.

Water availability: The uplands play a significant role in water storage, quality and release by virtue of their peat-forming and water storing wetlands, providing a natural defence against both drought and flood. There are a number of drinking water sources in the National Park including reservoirs, rivers, springs and boreholes. Some of Cardiff's drinking water is sourced directly from the Bannau Brycheiniog National Park area.

Food provision: Much of the central and southern parts of Monmouthshire are utilised for sheep grazing and dairy farming, with some smaller areas of arable farming on the fertile floodplain where good drainage allows. A small number of traditional orchards are present. In the northwest of the county, higher land, much of which are commons, tends to be sheep grazed, with small scale enclosed sheep and dairy pasture on the lower slopes and valleys. Some localised areas of farmland have been turned over to other uses, including diversification of business activities such as solar or wind power generation (eg. the solar farm development at Llancayo in the Usk Valley). These diversifying factors can influence productivity and, importantly, how separate land parcels are managed in a landscape that requires a coherent approach to, for example, land drainage.

Fuel & fibre: The Bannau Brycheiniog and Black Mountains offer a variety of landscapes capable of providing sources of clean, sustainable energy. The National Park Authority provides guidance on the provision of: standalone wind turbine power generation; heat pumps; woodfuel and biomass heating systems and micro and small-scale hydro power systems. With respect to the volume of biomass that could realistically be harvested, however, there may be restrictions on the size of any associated power plant. As an alternative the biomass could form one stream of supply to an existing plant, but the value of this would need to be considered in relation to the embedded energy costs associated with transportation.

The Renewable Energy Community Scheme[37] (RECS) completed a feasibility study in 2017 to consider the inter-relationship between small-scale 'green' energy generation and natural floodplain management to control surface water flooding. The feasibility study has been undertaken around Monmouth, but its key findings are intended to be applicable county-wide. The aims of the project were to:

- Identify acreage suitable for woodland planting which, with sustainable management provide fuel for community heating schemes, the contribution these plantings would make to the reduction of surface water run-off, any land management that would assist in additional reduction of surface water run-off;
- Advise on the contribution to the reduction of surface water run-off from community orchards; and,
- Identify suitable watercourses for the installation of micro hydro schemes with the direct benefit of providing power for local community use.

The Feasibility Study has also created a RECS 'Effectiveness Calculator', which estimates the reduction in run-off and flashiness of a run-off event that could result from a particular action or intervention, based on a suite of site specific data.

37 https://businesswales.gov.wales/walesruralnetwork/local-action-groups-and-projects/projects/recs-renewable-energy-community-schemes

**Regulating Services**

Regulating services maintain natural systems that include water quality, flooding, soil erosion and coastal processes.

Climate regulation: Eroding peat bog is a particular feature of the National Park with the largest concentration of this degraded habitat in Wales. Reversing this is an important contribution to mitigating the effects of climate change through land management. The range of likely climatic responses from west to east requiring differing responses in one unified area highlights the strategic role that the Bannau Brycheiniog National Park can play, as a barometer of change. The range of likely changes includes:

- Average summer temperatures in the Bannau Brycheiniog National Park: - in the west of the Park increases are very likely to be between 1-2oC and 5-6oC warmer; in the east of the Park increases are very likely to be between 2-3oC and 6-7oC warmer.
- Average summer precipitation in the Bannau Brycheiniog National Park: - summer precipitation is very likely to decline by 40-50% and very unlikely to increase by 0-10%, i.e., the Bannau Brycheiniog National Park may experience between 10% more and 50% less rainfall in the summer months.
- Average winter precipitation in the Bannau Brycheiniog National Park: - increases in winter precipitation are very likely to be up to 60-70% in the west and 40-60% in the east.

Without intervention through catchment management, these precipitation changes represent a significant risk to water supplies to south Wales; less rainfall in the summer and more in the winter amounts to a net loss overall because the excess water falling during the winter months will exceed storage capacity and will therefore run off the land into the rivers, exacerbating flood risks.

Regulating water quality: Within the National Park there are large areas of severely degraded blanket bog and wet heath, the degree of erosion and oxidation of which is adversely affecting water quality and natural water storage, in a part of Wales where water quality and supply are critical to a large section of the population [38]. Additionally, The declining numbers of livestock on the upland commons within the Bannau Brycheiniog National Park increase the risk of uncontrolled fires on large areas of dry Molinia-dominated moorland, which would further undermine the water quality and water conservation of this strategically important area. Conversely, there are also signs that the peat-forming and water-holding Sphagnum mosses are recovering in places where grazing pressure and trampling is reduced, which is also due to improvements in air quality.

The water quality within the River Usk SAC and its floodplain is heavily influenced by the surrounding land use and by the poor ecological condition of its upland catchments, which feed the main river and its SAC tributaries. For example, it has been demonstrated that the levels of sedimentation within the River Usk are directly affected by the extent of eroding river banks for 500m upstream and the lack of floodplain woodland. It has also been demonstrated that as the extent of woodland and rough grazing declined, the ecological richness of the river declined too.

Regulating water (flooding): The upper part of the Usk catchment into the Bannau Brycheiniog demonstrates a flow regime with rapid rainfall runoff, caused by the steep sided narrow valleys and thin soils underlain by mainly impermeable rock; resulting in the lower reach flood plains becoming inundated during periods of heavy rainfall (see **Diagram D2.3**). The lower Usk tends to be less responsive to rainfall due to the larger catchment area and lowland relief.

Regulating soil erosion and quality: The Bannau Brycheiniog National Park includes areas of deep peat and degraded bog which without buffering, is likely to lead to the degradation and loss of peat and soils with attendant impacts on water quality and downstream flooding risk.

38 BBNP (July 2009). Brecon Beacons National Park: a good place for Glastir Sustainable Land Management Scheme

**Cultural Services**

Cultural services provide direct, non-material, benefits to human society, addressing a range of social and cultural needs that encompass a sense of place and inspiration, a sense of history, tranquillity and recreation.

Sense of place and inspiration: Monmouthshire presents a unique blend of Welsh and English cultures typical of this historically contested borderland at the entrance to Wales. In the Bannau Brycheiniog, a special quality identified is "the Park's sweeping grandeur and outstanding natural beauty observed across a variety of harmoniously connected landscapes, including marvellous gorges and waterfalls, classic karst geology with caves and sink holes, contrasting glacial landforms such as cliffs and broad valleys carved from old red sandstone and prominent hilltops with extensive views in all directions."

The key qualities identified by the The Management Plan For Bannau Brycheiniog National Park 2023-2028 are:

- Sweeping grandeur & outstanding natural beauty - The National Park's sweeping grandeur and outstanding natural beauty observed across a variety of harmoniously connected landscapes, including marvelous gorges and waterfalls, classic karst geology with limestone pavement, caves and sink holes, contrasting glacial landforms such as cliffs and broad valleys carved from old red sandstone and prominent hilltops with extensive views in all directions. A landscape that provides a sense of time depth and timelessness.
- Contrasting patterns, colours & textures - A working, living "patchwork" of contrasting patterns, colours and textures comprising well-maintained farmed landscapes, open uplands, lakes and meandering rivers, punctuated by small-scale woodlands, country lanes, hedgerows and stone walls and scattered settlements. grouped around landscape, community, experiences and wildlife.
- A sense of place & cultural identity - "Welshness" - characterised by the indigenous Welsh language, religious and spiritual connections, unique customs and events, traditional foods and crafts, relatively unspoilt historic towns and villages, family farms and continued practices of traditional skills developed by local inhabitants to live and earn a living here, such as common land practices and grazing.
- An intimate sense of community - An intimate sense of community where small, pastoral towns and villages are comparatively safe, friendly, welcoming and retain a spirit of cooperation.
- Enjoyable & accessible - Enjoyable and accessible countryside with extensive, widespread and varied opportunities to pursue walking, cycling, fishing, waterbased activities and other forms of sustainable recreation or relaxation.
- Sounds, sights, smells & tastes - A feeling of vitality and wellbeing that comes from enjoying the National Park's fresh air, clean water, rural setting, open land, and locally produced foods.
- Sense of discovery - A sense of discovery where people explore the National Park's hidden secrets and stories such as genealogical histories, prehistoric ritual sites, relic medieval rural settlements, early industrial sites, local myths and legends and geological treasures from time immemorial.
- Peace, tranquility & darkness - A National Park offering, dark, nighttime skies, peace and tranquility with opportunities for quiet enjoyment, inspiration, relaxation and spiritual renewal.
- Mosaic of diversity - The geology and climate vary greatly across the Park, creating an elaborate patchwork landscape rich in biodiversity. The Park hosts heathlands, grasslands and woodlands, with uplands and lowlands, natural lakes and riparian habitats. The Park contains limestone pavement and blanket bogs of international and national importance. Several endangered

species survive in the Park, including some for which the Park is their furthest extent of their natural range.

- Living landscape - An abundance of wildlife thrives in semi-natural habitats that have been lived in and shaped by human settlement for millennia. The landscape is interlaced with ancient hedgerows bustling with life, enclosing wildlife-rich hay meadows, and primeval woodlands that cloak some steep-sided valleys. Veteran trees adorn the landscape, carrying the scars of centuries of changing dependency on their resources. Heather-dominated uplands maintained through grazing by horses, sheep and cattle are a testament to the intimate relationship between biodiversity and farming.

Sense of history: The Bannau Brecheiniog exhibit the results of glacial activity as the ice sheet retreated. The hills and particularly the northern scarp was incised by glaciers, there are also some well-preserved glacial screes and moraines. Humans have been active in this landscape since the end of the last ice age and traces of human habitation in the form of prehistoric stone circles and burial chambers, Iron Age hillforts and Roman camps.

The Bannau Brecheiniog are also home to a large number of castles built by the Normans, and other examples of built heritage include priories and medieval farmhouses. Land use encompassed the provision of firewood, turf, peat and gravel, and as grazing for sheep, cattle and pigs. The landscape is also crossed by many trackways which were used over the centuries by drovers to take their livestock to market.

The Industrial Revolution saw significant change with limestone, silica sand and ironstone were quarried on the fringes of the Park to feed demand from the furnaces of the South Wales Valleys. Associated infrastructure included the construction and operation of the Monmouthshire canal which connected with a network of tramroads and railways and became important transport corridors for the movement of goods and materials. As well as industrial structures, the Georgian and Victorian age brought some fine urban and rural buildings to the area, some of which still retain their original features.

The Bannau Brecheiniog also has a long history of links with the military from its use as a cavalry base by the Romans to modern day training[39].

Leisure and recreation: Tourism and leisure form key mainstays of the local economy. People regularly come here for the special landscape, for outdoor activities and for the superb food and drink available locally. Walking is by far the most popular of the more active pursuits, but cycling, mountain biking, horse riding and fishing are all enjoyed on a wide scale. More specialist activities you can take part in are caving, canoeing, sailing, hang-gliding and parascending41.

The Bannau Brycheiniog have also been declared an International Dark Sky Reserve due to its sky views at night and little light pollution, this is a highly acclaimed stargazing location.

39 http://www.breconbeacons.org/history

## Zone F: Eastern South Wales Valleys

### Supporting Services

Supporting services are those which are essential to the functioning of ecosystems and indirectly responsible for all other services. This includes the relationship between underlying geology and soil character, soil formation and the processes of plant growth, including pollination.

Geology and soil character: The Eastern South Wales Valleys have predominantely Lower Devonian sandstone & conglomerate interbedded bedrock geology (see **Diagram D2.1**). The area also has limestone with subordinate sandstone & argillaceous rocks as well as mudstone, siltstone, sandstone, coal, ironstone & ferricrete. Similiar to the uplands of the Bannau Brycheiniog and Black Mountains, this area also has poor to very poor quality soils

Soil formation: Agriculture relies on soil formation, nutrients, water flow and pollination. The uplands play a significant role in water storage, quality and release, providing a natural defence against both drought and flood. As long as they are free from the effects of heavy grazing, upland peat bogs store carbon and combat atmospheric pollution. They capture atmospheric carbon which helps mitigate the effects of climate change[1].

Pollination: by insects also provides a supporting service for primary production to support both agricultural production and nature conservation. However, the serious consequences of significant declines in insect pollinator populations, considered largely to result from the loss of flower-rich habitat, habitat fragmentation and the use of certain pesticides, has been recognised in the government's National Pollinator Strategy[2] and the creation of initiatives such as B-Lines[3] to promote landscape-scale habitat creation to try and reverse the decline in pollinating insects.

1 The Management Plan For Bannau Brycheiniog National Park 2023-2028

2 Defra (November 2014). The National Pollinator Strategy: for bees and other pollinators in England.

3 https://www.buglife.org.uk/our-work/b-lines/b-lines-wales/

With respect to Monmouthshire as a whole, the green infrastructure action plan for pollinators in SE Wales[4] identifies those areas where pollinators directly contribute to supporting human life and food, notably where there is the high demand in urban areas for pollinators for fruit and vegetables in gardens and allotments. The action plan also points out that there is only a relatively small percentage of arable land that comprises crops such as oilseed rape which need pollinators, and this is concentrated in the lowland arable areas of Monmouthshire. Other areas such as, for example, nature reserves, have indirect requirements for pollinators.

The Action Plan provides a framework for identifying appropriate areas and types of land where interventions to support pollinators could be delivered, and provides a variety of recommendations and desired outcomes for measuring success. In terms of broad measures of success, the Action Plan reports a success rate of approximately 90% for the use of yellow rattle as a means of reducing the vigour of grass growth (thereby allowing a more floristically rich sward to develop) and it also identifies the inter-relationship between the County's 'cut and collect' grass mowing regime for maintaining grasslands (e.g. roadside verges), which is a key management tool in maintaining floral diversity, and the generation of biomass for energy production.

4 TACP (2015). Green infrastructure action plan for pollinators in South-east Wales. Report to Monmouthshire County Council on behalf of Monmouthshire County Council and Blaenau Gwent, Caerphilly and Torfaen County Borough Councils December 2015. TACP UK Ltd.

**Provisioning Services**

Provisioning services relate to the supply of goods such as freshwater, food and fuel.

Water availability: The uplands play a significant role in water storage, quality and release by virtue of their peat-forming and water storing wetlands, providing a natural defence against both drought and flood.

Food provision: The lower lying land on the lower slopes and valleys is utilised for sheep grazing and dairy farming, with some smaller areas of arable farming where good drainage allows. Higher land, much of which are commons, tends to be sheep grazed. Some localised areas of farmland have been turned over to other uses, including diversification of business activities such as solar or wind power generation. These diversifying factors can influence productivity and, importantly, how separate land parcels are managed in a landscape that requires a coherent approach to, for example, land drainage.

Fuel & fibre: The Bannau Brycheiniog National Park offers a variety of landscapes capable of providing sources of clean, sustainable energy. The National Park Authority provides guidance on the provision of: standalone wind turbine power generation; heat pumps; woodfuel and biomass heating systems and micro and small-scale hydro power systems. With respect to the volume of biomass that could realistically be harvested, however, there may be restrictions on the size of any associated power plant. As an alternative the biomass could form one stream of supply to an existing plant, but the value of this would need to be considered in relation to the embedded energy costs associated with transportation.

The Renewable Energy Community Scheme[1] (RECS) completed a feasibility study in 2017 to consider the inter-relationship between small-scale 'green' energy generation and natural floodplain management to control surface water flooding. The feasibility study has been undertaken around Monmouth, but its key findings are intended to be applicable county-wide. The aims of the project were to:

- Identify acreage suitable for woodland planting which, with sustainable management provide fuel for community heating schemes, the contribution these plantings would make to the reduction of surface water run-off, any land management that would assist in additional reduction of surface water run-off;
- Advise on the contribution to the reduction of surface water run-off from community orchards; and,
- Identify suitable watercourses for the installation of micro hydro schemes with the direct benefit of providing power for local community use.

The Feasibility Study has also created a RECS 'Effectiveness Calculator', which estimates the reduction in run-off and flashiness of a run-off event that could result from a particular action or intervention, based on a suite of site specific data.

1 https://businesswales.gov.wales/walesruralnetwork/local-action-groups-and-projects/projects/recs-renewable-energy-community-schemes

**Regulating Services**

Regulating services maintain natural systems that include water quality, flooding, soil erosion and coastal processes.

Climate regulation: Eroding peat bog is a particular feature of the National Park with the largest concentration of this degraded habitat in Wales. Reversing this is an important contribution to mitigating the effects of climate change through land management. The range of likely climatic responses from west to east requiring differing responses in one unified area highlights the strategic role that the Bannau Brycheiniog National Park can play, as a barometer of change. The range of likely changes includes:

- Average summer temperatures in the Bannau Brycheiniog National Park: - in the west of the Park increases are very likely to be between 1-2oC and 5-6oC warmer; in the east of the Park increases are very likely to be between 2-3oC and 6-7oC warmer.
- Average summer precipitation in the Bannau Brycheiniog National Park: - summer precipitation is very likely to decline by 40-50% and very unlikely to increase by 0-10%, i.e., the Bannau Brycheiniog National Park may experience between 10% more and 50% less rainfall in the summer months.
- Average winter precipitation in the Bannau Brycheiniog National Park: - increases in winter precipitation are very likely to be up to 60-70% in the west and 40-60% in the east.

Without intervention through catchment management, these precipitation changes represent a significant risk to water supplies to south Wales; less rainfall in the summer and more in the winter amounts to a net loss overall because the excess water falling during the winter months will exceed storage capacity and will therefore run off the land into the rivers, exacerbating flood risks.

Regulating water quality: Within the National Park there are large areas of severely degraded blanket bog and wet heath, the degree of erosion and oxidation of which is adversely affecting water quality and natural water storage, in a part of Wales where water quality and supply are critical to a large section of the population [1]. Additionally, The declining numbers of livestock on the upland commons within the Bannau Brycheiniog National Park increase the risk of uncontrolled fires on large areas of dry Molinia-dominated moorland, which would further undermine the water quality and water conservation of this strategically important area. Conversely, there are also signs that the peat-forming and water-holding Sphagnum mosses are recovering in places where grazing pressure and trampling is reduced, which is also due to improvements in air quality.

Regulating water (flooding): The upper part of the Usk catchment into the Bannau Brycheiniog demonstrates a flow regime with rapid rainfall runoff, caused by the steep sided narrow valleys and thin soils underlain by mainly impermeable rock; resulting in the lower reach flood plains becoming inundated during periods of heavy rainfall (see **Diagram D2.3**).

Regulating soil erosion and quality: The Bannau Brycheiniog National Park includes areas of deep peat and degraded bog which without buffering, is likely to lead to the degradation and loss of peat and soils with attendant impacts on water quality and downstream flooding risk.

1 BBNP (July 2009). Brecon Beacons National Park: a good place for Glastir Sustainable Land Management Scheme

**Cultural Services**

Cultural services provide direct, non-material, benefits to human society, addressing a range of social and cultural needs that encompass a sense of place and inspiration, a sense of history, tranquillity and recreation.

Sense of place and inspiration: The Eastern South Wales Valleys are categorised by an extensive wild and wind-swept plateau with intervening deep valleys [1]. The high ground is often scenic and tranquil with extensive views, for example at Blorenge ridge. The landscape is well known for its extensive industrial coal and ironworking heritage.

Sense of history: The Industrial Revolution saw significant change with limestone, silica sand and ironstone quarried on the fringes of the Bannau Brycheiniog National Park to feed demand from the furnaces of the South Wales Valleys. Associated infrastructure included the construction and operation of the Monmouthshire and Brecon canal which passes through Govilon. The canal connected with a network of tramroads and railways and became important transport corridors for the movement of goods and material. The Blaenavon World Heritage Site is one of the best surviving examples in the region of a valley head industrial community, with features from the C18th iron industry as well as the extensive coal mining activity that took place in the 19th Century.

Leisure and recreation: The Blaenavon World Heritage Site is a registered Landscape of Outstanding Historic Interest which attracts visitors interested in the industrial history of the area. The Eastern South Wales Valleys is a popular area for outdoor activities including mountain biking and hiking. The Valleys Regional Park has a network of uplands, woodlands, nature reserves, country parks, rivers, reservoirs, canals, heritage sites and attractions, all interlinked with towns and villages[2]. The high level of accessible natural greenspace provides opportunities for leisure and recreation in the area through walking trails and cycle networks.

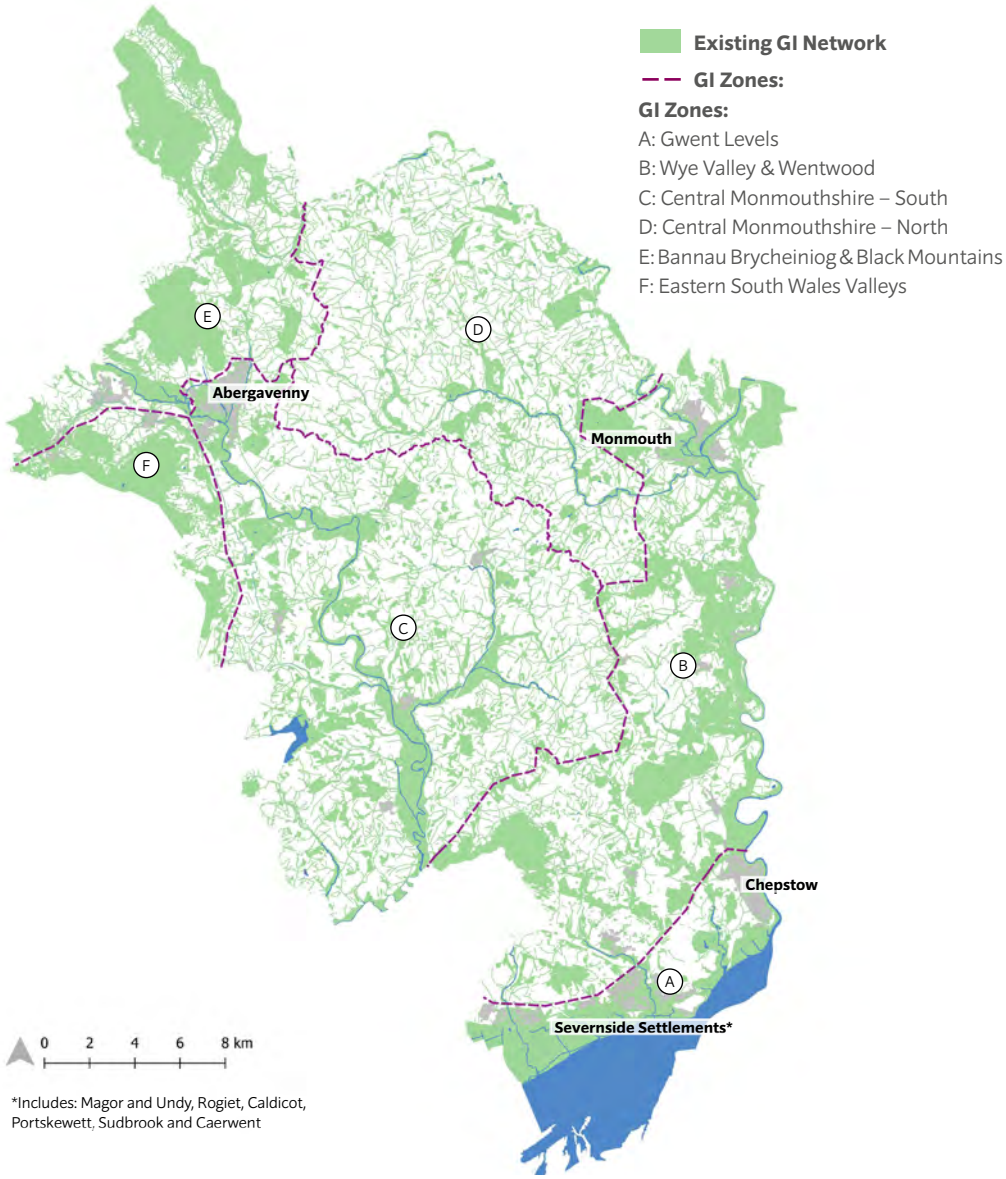
1 https://naturalresources.wales/about-us/what-we-do/strategies-and-plans/area-statements/south-east-wales-area-statement/introduction-to-south-east-area-statement/?lang=en

2 https://valleysregionalpark.wales/

d3

# Green Infrastructure Needs and Opportunities

## DIAGRAM D3.1 GI Zones




The existing GI network represents GI assets defined by the following datasets: Greenspace Study (excluding non-natural greenspace), Open Space Study, county-wide public rights of way, county-wide designated sites of nature conservation value, county-wide designated features of historic value, county-wide watercourses and water bodies, predominantly undeveloped floodplains (flood risk areas), and county-wide woodlands. See Appendix B for details.

## Zone A: Gwent Levels

This section explores opportunities for improving GI within Zone A: Gwent Levels. The opportunities have been identified through analysis of existing studies, the ecosystem services described in **Appendix D2**, and stakeholder consultation workshops - see **Appendix C.** Where appropriate, these are aligned with the Gwent Green Grid Regional Green Infrastructure Strategy.

### GI Needs & Opportunities for Improving Health & Wellbeing

There is a need to improve access and recreation facilities for local communities and visitors to the Gwent Levels. There is growing evidence that access to, and enjoyment of natural and semi-natural greenspaces enhances people's health and well-being, particularly in areas of social deprivation. Engagement with the natural and cultural heritage of the Gwent Levels is key to the conservation of this remarkable landscape for future generations.

The GI opportunities outlined in this section were informed by the Gwent Levels GI Strategy, which should be referenced for further details.

Strategic priorities and opportunities for optimising the health and wellbeing benefits of GI in the Gwent Levels sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Supporting responsible public access to the countryside for outdoor recreation to maximise the health and well-being benefits of experiencing and connecting with the Gwent Levels landscape and heritage for local and wider communities, while managing impacts of recreation activity on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising
- Strategic Green Corridors: Providing a coherent and joined up network of regional green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians by exploring opportunities for enhancing existing routes (such as the Wales Coast Path) and creating new ones where appropriate
- Strategic Blue Space & Corridors: Supporting responsible public access to watercourses/waterbodies for outdoor recreation to maximise the health and well-being benefits of experiencing water environments, while managing impacts of recreation activity on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising
- Urban Green Grids: Developing targeted programmes of accessible green space improvements and new provision for the Chepstow and the Severnside Settlements (Magor-Caldicot) to address inequalities for communities experiencing high levels of health deprivation

Within this context, local opportunities for GI to help in addressing health and well-being needs within the Gwent Levels GI Zone could include:

- Focusing investment on improving/enhancing distinctive places, gateways and access routes within the study area that have a role to play in helping people to engage with, appreciate and enjoy the key landscape themes and attributes that make the Gwent Levels special.
- Maximising opportunities presented by a level landscape for cycling and encouraging healthier lifestyles by providing traffic free cycle routes that cater for all abilities and provide a low impact form of access to ecologically sensitive sites for local people and visitors.
- Reviewing 'gaps' in the route of the Wales Coast Path (as part of the review of the Appropriate Assessment under the Habitat Regulations) to consider again the re-alignment of the path where it diverges from the sea wall such as: south of Caldicot.
- Enhancing connectivity between the Levels and local communities/ greenspaces in the Monmouthshire Severnside Settlements.
- Considering opportunities to enhance intellectual access to and understanding of the Gwent Levels' unique landscape, history and wildlife, such as through the promotion of 'citizens science' projects via outreach programmes for researching, identifying and recording the ecological and historical interest of the Gwent Levels.

- Considering opportunities to incorporate GI into the Preferred Strategic Site Allocations at Mounton Road Chepstow and Caldicot East, such as provision of pedestrian/cycle links and greenspaces for people.

**GI Needs & Opportunities for Enhancing Biodiversity & Increasing Ecosystem Resilience**

A sustainable approach is critical for supporting the protection of biodiversity and ecosystem resilience. The biodiversity value of the extensive network of field drainage ditches and reens is vulnerable to neglect through lack of appropriate maintenance, changes in drainage and land use. This is essential to increase the range and extent of habitats and species and their resilience.

Strategic priorities and opportunities for optimising the biodiversity and ecosystem resilience benefits of GI in the Gwent Levels sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space & Corridors: Working with a range of partners to identify landscape-scale projects to improve habitat condition, connectivity and diversity (such as wetlands, grasslands and intertidal habitats), and support net biodiversity gain; providing habitats along green spaces and corridors for pollinator insects; and promoting biosecurity good practice measures for controlling invasive plant species (e.g. Japanese Knotweed and Himalayan Balsam)
- Strategic Blue Space & Corridors: Managing abstraction to ensure adequate flow and active river processes; improving the management of ditches/reens; preventing deterioration in Water Framework Directive water body status with the aim of achieving good overall status for surface and ground waters; developing a nutrient management plan; and developing river restoration plans and natural flood management plans for restoring rivers back to good ecological condition and to build resilience against future changes.
- Urban Green Grids: Developing programmes for delivering wildlife site management improvements and habitat creation for the Chepstow and Severnside Settlements (Magor-Caldicot) Urban Green Grids to support urban nature recovery

Within this context, local opportunities for GI to help in addressing biodiversity and ecosystem resilience needs within the Gwent Levels GI Zone could include:

- Restoring over-drained or damaged wet grasslands, and reinstating traditional water management techniques and groundwater levels, where appropriate.
- Working through co-ordinated and collaborative management with existing projects, and specifically across the suite of nature reserves, as well as through emerging initiatives, to deliver enhanced land and water management and habitat connectivity, as well as informed and continuing engagement with local communities and user groups.
- Encouraging the diversification of habitats to include the creation, restoration and connectivity of flower-rich habitats to support and sustain pollinating insects.
- Identifying inter-tidal habitat creation opportunities in partnership with NRW on land under their ownership, particularly where it occurs near the seawall.
- Enhancing the biodiversity value of saltmarsh beyond the sea wall by managing overgrazing (and fly grazing) and under-grazing of this important inter-tidal habitat to reduce negative effects on the botanical and ecological interest.
- Diversifying the grassland sward on the seawall banks, without compromising its integrity or the ability to inspect the condition/integrity of the sea defences, should be considered. Increasing floristic diversity and implementing a sympathetic mowing regime has the potential for the creation of a grassland habitat corridor for the support of pollinators.
- Raising awareness of the importance of the roosting and feeding areas for birds around the coast and estuaries and the relationship to the inland wetlands of the Gwent Levels, ensuring that they are adequately protected, managed and enhanced.

- Identifying opportunities along the larger watercourses where river banks could potentially be set back to increase riparian habitats.
- Considering opportunities to incorporate GI into the Preferred Strategic Site Allocations at Mounton Road Chepstow and Caldicot East, such as enhancing ecological connections for wildlife.

**GI Needs & Opportunities for Strengthening Landscape Character & Distinctiveness**

The extensive network of field drainage ditches and reens are one of the most distinctive landscape features of the Gwent Levels, which is a unique hand-crafted cultural landscape. There is a need to maintain and restore these, along with other historic landscape features, where appropriate.

Opportunities for addressing these needs within the Gwent Levels GI Zone could include:

- Encouraging the reinstatement of historic drainage features to maintain the drainage system as a distinctive landscape feature of the Gwent Levels by giving consideration to reinstating lost field ditches and grips; and managing riparian vegetation to reduce the dominance of double-hedged ditches and reens in order to restore their traditional open character.
- Maintaining water levels to protect as yet undiscovered buried archaeology associated with the Gwent Levels' unique landscape history.
- Discouraging field enlargement and/or the infilling of field ditches that would result in the loss of watercourses, leading to the erosion of the strong geometric pattern in the landscape, and the abandonment of traditional channel management practices.
- Promoting the restoration and/or continued management of pollard willows along drains, ditches, reens, roadsides and tracks, to reinforce traditional landscape character and enhance habitat connectivity, and providing small-scale, localised sources of wood fuel.

**GI Needs & Opportunities for Increasing Climate Change Resilience**

In the context of the challenges presented by climate change and rising sea levels, there is a need to continue working with and adapting to the natural estuarine processes related to the Severn Estuary and the associated river estuaries. There is also a fundamental need to manage water and the network of watercourses within the Gwent Levels. This is essential for maximising GI benefits such as improved flood management, water and soil quality.

Strategic priorities and opportunities for optimising the climate change resilience and adaptation benefits of GI in the Gwent Levels sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Working with a range of partners to implement sustainable farming practices for improving the ability of soil to store carbon, and identify landscape-scale habitat restoration and tree planting projects to maximise carbon sequestration in existing ecosystems
- Strategic Green Corridors: Providing a coherent and joined up network of regional green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians to support decarbonisation by reducing use of fossil fuel powered transport and carbon emissions.
- Strategic Blue Space & Corridors: Working with a range of partners as part of a catchment-based approach to identifying landscape-scale projects for implementing natural flood management measures to reduce surface water run-off and slow the flow, limiting flooding downstream; and reducing the risk of flooding through maintenance of existing flood defences and implementation of managed coastal sea defence realignment projects where appropriate
- Urban Green Grids: Developing programmes to increase urban green cover and the tree canopy within green spaces, along streets and on buildings/ structures for the Chepstow and Severnside Settlements (Magor-Caldicot) Urban Green Grids to make urban communities more resilient and adaptable to climate change

Within this context, local opportunities for GI to help in addressing climate change resilience and adaptation needs within the Gwent Levels GI Zone could include:

- Developing a landscape-scale approach to wetland management in general and in particular, maintaining and restoring a functioning ditch and reen system. Multiple benefits that may accrue through a landscape-scale approach include: managing aquatic and marginal vegetation to maintain the function and conservation interest of ditches and reens in appropriate locations compatible with flood risk management objectives; the maintenance of a healthy, productive, farmland landscape; and the control and management of flood risk.
- Maintaining and restoring water management infrastructure – pumps, sluices and other control mechanisms, ditches, reens, drains and grips, as well as the sea wall – to minimise the impact of flooding on people and property.
- Researching and exploring innovative approaches and options to address water management that potentially benefit both the natural environment and agriculture. Also, exploring mechanisms that release land to make space for more water storage and gravity drainage, including land purchase, land swaps, payment for ecosystem services schemes and farmer early retirement schemes.
- Encouraging participation in the delivery of objectives identified in relevant River Basin Management Plans. These include: initiatives to manage diffuse pollution arising from urban areas, new development, agriculture and rural land management; control of invasive non-native species; management of potential conflicts between different user groups; management of adequate water levels and active river processes; mechanisms for reducing pressure from abstraction and the restoration of aquatic habitats and species, as identified for the River Usk.
- Applying policy and good practice guidance to ensure the incorporation of sustainable drainage schemes (SuDS) into all new development, in order to minimise uncontrolled surface water flows onto the Gwent Levels.
- Undertaking studies to determine the extent to which upland watersheds influence both the quantity and quality of water on the Gwent Levels. In particular, the influence of changes in agricultural practices, commercial forestry and long-term landscape change resulting from significant tree loss through disease, may all influence the future water resources of the Levels.
- Aiming to develop a more diverse range of habitats, vegetation types and structures within holdings, enabling habitats and species to respond to the effects of climate change, while maintaining viable farming businesses, cultural associations and traditions and the overall character of the area.
- Ensuring that the Seven Estuary Shoreline Management Plan continues to recognise the outstanding historic landscape significance and high nature conservation value of the Gwent Levels, and the fundamental role that the sea defences plays in sustaining these interests. Working in partnership with all those with a stake in the long-term sustainability of the area is critical to develop consensus around approaches to addressing the challenges of climate change, and its environmental and economic consequences.
- Incorporating coastal heritage sites into climate change adaptation plans, wherever possible, recording, promoting, understanding and recognising their historical significance and their contribution to local culture and coastal landscape character.

**GI Needs & Opportunities for Supporting Sustainable Economic Development**

There is a need to manage the landscape of the Gwent Levels sustainably. This includes a sustainable approach to farming, which is critical for supporting the protection of soils and water, biodiversity and locally distinctive landscapes in particular.

Opportunities for addressing these needs within the Gwent Levels GI Zone could include:

- Supporting the local farming community, where possible through agri-environment grants (Glastir or its post-Brexit successor scheme), encouraging flexibility in land management, where appropriate maintaining the existing mixed farming systems, conserving soils and increasing the floristic diversity of wet meadows.
- Advising landowners on the re-creation, where feasible, of habitats such as wet grassland, reedbeds and fens, in the context of maintaining commercially viable agricultural activity within the area. Where specific landholdings may no longer be commercially viable, consider opportunities for the diversification of land-use to encompass the creation or restoration of semi-natural habitats.
- Encouraging more extensive and sustainable land management (by means of appropriate stocking densities and the use of hardy traditional cattle breeds), reducing the risk of soil compaction and poaching, increasing opportunities for floristic diversity, promoting the sensitive uses of pesticide and fertiliser, and implementing manure management plans, reducing nutrient enrichment of watercourses and improving overall water quality.
- Promoting best practice in soil management, use of low-pressure machinery, and careful management of livestock near watercourses and bank sides, using grassland buffer strips and semi-natural habitats to enhance infiltration and protect watercourses from nutrient and sediment input.
- Identifying opportunities for farm business diversification through mechanisms such as premium brand marketing, use of traditional premium value hardy breeds, payment for ecosystem services, and linking the management of the Gwent Levels to upstream watersheds where relevant.
- Working in collaboration with landowners to realise the potential for landscape-scale restoration schemes in suitable areas where recutting of former ditches, removal of hedgerows and reseeding of grassland could be considered.
- There is an opportunity to support the Monmouthshire Destination Development Plan, where access to the countryside is a key part of Monmouthshire's offer.

## Zone B: Wye Valley & Wentwood

This section explores opportunities for improving GI within Zone B: Wye Valley & Wentwood. The opportunities have been identified through analysis of existing studies, the ecosystem services described in **Appendix D2**, and stakeholder consultation workshops - see **Appendix C**. Where appropriate, these are aligned with the Gwent Green Grid Regional Green Infrastructure Strategy. This section should be read in conjunction with the Wye Valley AONB Management Plan.

### GI Needs & Opportunities for Improving Health & Wellbeing

There is a need to maintain, and where appropriate, improve access and recreation facilities for local communities and visitors to the Wye Valley. There is growing evidence that access to, and enjoyment of natural and semi-natural greenspaces enhances people's health and well-being, particularly in areas of social deprivation. There is a need for people to continue to enjoy active recreation in the Wye Valley that does not detract from the natural beauty of the area. Engagement with the natural and cultural heritage of the Wye Valley is key to the conservation of this remarkable landscape for future generations.

Strategic priorities and opportunities for optimising the health and wellbeing benefits of GI in the Wye Valley & Wentwood sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Supporting responsible public access to the countryside for outdoor recreation to maximise the health and well-being benefits of experiencing areas (such as Chepstow Park Wood and Wyeswood Common Nature Reserve), while managing impacts of recreation activity on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising
- Strategic Green Corridors: Providing a coherent and joined up network of regional green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians by exploring opportunities for enhancing existing routes (such as the Wye Valley Walk) and creating new ones where appropriate
- Strategic Blue Space & Corridors: Supporting responsible public access to watercourses/waterbodies for outdoor recreation to maximise the health and well-being benefits of experiencing water environments (such as the River Wye), while managing impacts of recreation activity on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising
- Urban Green Grids: Developing a targeted programme of accessible green space improvements and new provision for the Monmouth Urban Green Grid to address inequalities for communities experiencing high levels of health deprivation

Within this context, local opportunities for GI to help in addressing health and wellbeing needs within the Wye Valley & Wentwood GI Zone could include:

- Promoting the understanding and enjoyment of the cultural heritage and historic environment
- Increasing understanding, awareness and enjoyment of trees and the special nature of the Wye Valley woodlands and promote them as a resource for appropriate educational, community, recreational and health opportunities
- Encouraging community led initiatives that maintain the diversity, sustainability and quality of rural community life and/or that stimulate investment, local employment and retain or improve facilities and services for local people,
- Encouraging and promoting recreational pursuits and responsible access compatible with the National Landscape purposes, particularly linking sustainable transport and town and village facilities.
- Supporting appropriate levels of sustainable design, repair, signage and maintenance on public rights of way, recreational trails and sites, using materials in keeping, in order to conserve or enhance the character and natural beauty of the Wye Valley.

- Assisting in identifying gaps in access and recreational provision, including for under-represented and minority groups, and work with appropriate bodies and stakeholders to support and promote access enhancements and improved access for all, where this does not conflict with the Special Qualities of the National Landscape and the SACs
- Considering opportunities to incorporate GI into the Preferred Strategic Site Allocation at Monmouth Leasbrook, such as provision of pedestrian/cycle links and greenspaces for people.

**GI Needs & Opportunities for Enhancing Biodiversity & Increasing Ecosystem Resilience**

A sustainable approach is critical for supporting the protection of biodiversity and ecosystem resilience. The Wye Valley & Wentwood GI Zone is particularly rich in wildlife and has a high concentration of designated sites. The quality of the river and riverine habitat, with migratory fish and otters, are of European importance. Similarly the near continuous woodlands interspersed with species rich grassland make a high quality connected landscape. Managing this range of habitats appropriately is essential to maintain and increase the range and extent of habitats and species and their resilience. There is a need to conserve, and where appropriate enhance and restore, the biodiversity of the Wye Valley & Wentwood GI Zone in robust ecological networks.

Opportunities for GI to help in addressing biodiversity and ecosystem resilience needs within the Wye Valley & Wentwood GI Zone could include:

Strategic priorities and opportunities for optimising the biodiversity and ecosystem resilience benefits of GI in the Wye Valley & Wentwood sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space & Corridors: Working with a range of partners to identify landscape-scale projects to improve habitat condition, connectivity and diversity (such as native woodlands and ancient hedgerows), and support net biodiversity gain; providing habitats along green spaces and corridors for pollinator insects; and promoting biosecurity good practice measures for controlling invasive plant species (e.g. Japanese Knotweed and Himalayan Balsam)
- Strategic Blue Space & Corridors: Managing abstraction to ensure adequate flow and active river processes; creating a joined-up approach to removing or modifying barriers to fish migration; preventing deterioration in Water Framework Directive water body status with the aim of achieving good overall status for surface and ground waters; developing a River Wye nutrient management plan; and developing river restoration plans and natural flood management plans for restoring rivers back to good ecological condition and to build resilience against future changes.
- Urban Green Grids: Developing programmes for delivering wildlife site management improvements and habitat creation for the Monmouth Urban Green Grid to support urban nature recovery

Within this context, local opportunities for GI to help in addressing biodiversity and ecosystem resilience needs within the Wye Valley & Wentwood GI Zone could include:

- Contributing to the delivery of national, regional and local Biodiversity targets and priorities for key habitats and species relevant to the Wye Valley, in partnership with relevant organisations.
- Encouraging and supporting measures that contribute to the management of all statutory designated sites and County local/key wildlife sites so that they are in favourable condition and within robust ecological networks.
- Promoting the adoption of schemes and initiatives that sustain, enhance and/or restore the characteristic biodiversity of the Wye Valley, and that enable ecological systems and natural processes to accommodate and adapt to climate and other environmental change, including through landscape scale habitat connectivity.

- Identifying species and diseases considered to be detrimental to the biodiversity value of the Wye Valley and encourage their monitoring, management and, where appropriate, their control.
- Supporting the identification and monitoring of key indicator species and priority species and habitats, in partnership with conservation organisations, relevant individuals and the Local Biological Record Centres.
- Promoting awareness, sources of advice and involvement in biodiversity conservation by landowners, land managers, businesses, local communities, schools and the public including of impacts from outside the Wye Valley.
- Providing best practice advice to woodland owners and managers on sustainable multipurpose management of the Wye Valley woodlands, including sensitive PAWS restoration, encouraging 'the right tree in the right place' and the ecosystems approach.
- Supporting the monitoring, management and where appropriate, control of diseases, pests and other threats, which may cause substantial mortality in tree species and woodland habitats and seek to mitigate the landscape impact of any loss.
- Encouraging the diversification of habitats to include the creation, restoration and connectivity of flower-rich habitats to support and sustain pollinating insects as part of the B-Lines initiative.
- Considering opportunities to incorporate GI into the Preferred Strategic Site Allocation at Monmouth Leasbrook, such as enhancing ecological connections for wildlife.

**GI Needs & Opportunities for Strengthening Landscape Character & Distinctiveness**

There is a need to conserve and enhance the natural beauty of the landscape in the Wye Valley with its natural and cultural features and processes, and the special qualities and features of the landscape (including the pattern of woodlands, many of which are ancient; the strong network of thick hedges, hedge banks, drystone walls and tree lines; and the distinct sense of place from the relationship of the woodland, pasture and settlement). There is also a need to ensure woodlands and trees throughout the Wye Valley are managed sustainably in a way that protects and enhances the outstanding ancient woodland character of the area, and provides environmental, social and economic benefits.

Opportunities for GI to help in addressing landscape character and distinctiveness needs within the Wye Valley & Wentwood GI Zone could include:

- Promoting and develop policies and initiatives to conserve, enhance, restore or create the features and elements that maintain the Special Qualities, landscape character and natural beauty of the National Landscape. Ensure their sustainable management and mitigate, reduce or remove detrimental features.
- Supporting measures which increase public awareness and appreciation of the natural beauty and importance of the Wye Valley.
- Seeking to mitigate and/or reduce, or as a last resort remove, agricultural activity which significantly diminishes or destroys the Special Qualities, natural beauty and landscape character of the National Landscape.
- Developing and supporting tree, woodland and forestry initiatives and policy that conserve, restore and/or enhance the Special Qualities, biodiversity and natural beauty of the area, ensuring no net loss of semi-natural woodland cover unless there are overriding nature or heritage conservation benefits.
- Encouraging and supporting high standards of design, materials, energy efficiency, drainage and landscaping in all developments, including Permitted Development, to ensure greater sustainability and that they complement and enhance the local landscape character and distinctiveness including scale and setting and minimise the impact on the natural environment.

**GI Needs & Opportunities for Increasing Climate Change Resilience**

In the context of the challenges presented by climate change, which threaten to degrade distinctive landscape features and wildlife habitats; there is a need to adapt and arrest destructive change in places. Species diversification is very much at the core of woodland adaptation and ensuring resilience in the future. There is also a fundamental need to manage water appropriately. This is essential for maximising GI benefits such as improved flood management, water and soil quality.

Opportunities for GI to help in addressing climate change resilience and adaptation needs within the Wye Valley & Wentwood GI Zone could include:

Strategic priorities and opportunities for optimising the climate change resilience and adaptation benefits of GI in the Wye Valley & Wentwood sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Working with a range of partners to implement sustainable farming practices for improving the ability of soil to store carbon, and identify landscape-scale habitat restoration and tree planting projects to maximise carbon sequestration in existing ecosystems
- Strategic Green Corridors: Providing a coherent and joined up network of regional green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians to support decarbonisation by reducing use of fossil fuel powered transport and carbon emissions.
- Strategic Blue Space & Corridors: Working with a range of partners as part of a catchment-based approach to identifying landscape-scale projects for implementing natural flood management measures to reduce surface water run-off and slow the flow, limiting flooding downstream.
- Urban Green Grids: Developing a programme to increase urban green cover and the tree canopy within green spaces, along streets and on buildings/ structures for the Monmouth Urban Green Grid to make urban communities more resilient and adaptable to climate change

Within this context, local opportunities for GI to help in addressing climate change resilience and adaptation needs within the Wye Valley & Wentwood GI Zone could include:

- Supporting and promoting the development of renewable forms of energy generation that do not impact negatively on the landscape features and Special Qualities of the National Landscape
- Promoting ecological connectivity and robust habitats in order to sustain diversity.
- Restoring habitats e.g. woodlands/vegetation, to help reduce flooding and offset air pollution whilst also conserving the key features and characteristics which have led to the National Landscape designation that make it so attractive to locals and visitors today.
- Providing sustainable urban drainage to absorb excess rainfall and ensuring the character of the river is not degraded.
- Contributing space to grow foods using sustainable methods thus promoting healthy diets for local communities but also enhancing biodiversity, providing jobs and educational benefits.
- Safeguarding accessible green space which helps reduce the effects of urban heat islands and also contributes to people's sense of health and well- being as well as having economic benefits relating to tourism.
- Reducing carbon emissions through encouraging alternative modes of transport by walking and cycling whilst also supporting health, well-being and tourism.
- Developing and co-ordinating the acquisition and analysis of data across the National Landscape, to inform priority setting, planning, implementation and monitoring of change affecting the natural beauty, including developing a better understanding of the likely impacts of climate change on the landscape of the Wye Valley National Landscape AONB and supporting mitigation and adaption actions.

**GI Needs & Opportunities for Supporting Sustainable Economic Development**

There is a need to manage and develop the landscape of the Wye Valley sustainably. This includes a sustainable approach to development and management of environmental impacts in more built-up areas; and to farming, which is critical for supporting the protection of soils and water, biodiversity and locally distinctive landscapes in particular. Amongst the purposes of the National Landscape is that 'particular regard should be paid to promoting sustainable forms of social and economic development that in themselves conserve and enhance the environment'. There is a need for this to include fostering viable farming enterprises that manage the land in ways that conserve and enhance the natural resources and local distinctiveness of the National Landscape.

Opportunities for GI to help in addressing sustainable economic development needs within the Wye Valley & Wentwood GI Zone could include:

- Encouraging farmers and landowners to develop and adopt sustainable management practices that conserve or enhance the features, Special Qualities and natural beauty of the Wye Valley National Landscape AONB.
- Encouraging the maximum uptake of, agri-environment and other appropriate schemes, including support for small-holders, where they progress the conservation or enhancement of the natural beauty, biodiversity, historic environment and Special Qualities of the National Landscape, particularly through Catchment Sensitive Farming and mixed farming systems.
- Supporting the development of and funding for new skills, farming practices and farm-based activities that are compatible with the aims of National Landscape designation, and encourage and support traditional skills such as hay making, hedge laying, dry stone walling, woodland and coppice management, riparian tree works etc. that contribute to the maintenance of the Special Qualities of the National Landscape.
- Promoting a wider understanding of the value of farming to the landscape and economy.
- Supporting all appropriate measures to control diseases of agricultural crops, trees and livestock, which threaten the commercial viability of farming systems that conserve the landscape character, ensuring that the measures remain compatible with the conservation and enjoyment of natural beauty.
- Encouraging and support local producers to supply local food and promote and encourage the use of local produce by public bodies, consumers, accommodation providers and local food outlets.
- Supporting the development of employment and skills and markets for local timber and woodland produce.

## Zone C: Central Monmouthshire – South

This section explores opportunities for improving GI within Zone C: Central Monmouthshire – South. The opportunities have been identified through analysis of existing studies, the ecosystem services described in **Appendix D2**, and stakeholder consultation workshops - see **Appendix C**. Where appropriate, these are aligned with the Gwent Green Grid Regional Green Infrastructure Strategy.

### GI Needs & Opportunities for Improving Health & Wellbeing

There is potential to expand access and recreation facilities for local communities and visitors to the Central Monmouthshire – South Zone. There is growing evidence that access to, and enjoyment of natural and semi-natural greenspaces enhances people's health and well-being, particularly in areas of social deprivation.

Strategic priorities and opportunities for optimising the health and wellbeing benefits of GI in the Central Monmouthshire sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Supporting responsible public access to the countryside for outdoor recreation to maximise the health and well-being benefits of experiencing areas (such as Clytha Park Country Park), while managing impacts of recreation activity on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising
- Strategic Green Corridors: Providing a coherent and joined up network of regional green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians by exploring opportunities for enhancing existing routes (such as the Usk Valley Walk) and creating new ones where appropriate
- Strategic Blue Space & Corridors: Supporting responsible public access to watercourses/waterbodies for outdoor recreation to maximise the health and well-being benefits of experiencing water environments (such as the Llandegfedd Reservoir and the River Usk), while managing impacts of recreation activity on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising
- Urban Green Grids: Developing a targeted programme of accessible green space improvements and new provision for the Abergavenny and Usk Urban Green Grids to address inequalities for communities experiencing high levels of health deprivation

Within this context, local opportunities for GI to help in addressing health and wellbeing needs within the Central Monmouthshire – South GI Zone could include:

- Providing interpretation for existing pedestrian/cycle paths, rights of way and walking routes connecting settlement such as Usk and the Usk Valley via existing PRoW (for example, the Usk Valley Walk) and cycle routes.
- Strengthening cycle route links along river valleys, links into national and regional cycle networks.
- Linking to healthy walking schemes and groups, as well as 'Health Walks', which can be prescribed by GPs.
- Expanding provision of pedestrian paths, rights of way and cycling routes to connect development via existing woodlands, open and green spaces to the wider countryside and key destinations including the Monmouth/Brecon canal and the River Usk.
- Enhancing existing green spaces and integration of green infrastructure into refurbishment or development of community assets such as local primary schools and publically owned or managed sites.

- Expanding allotment provision where appropriate around settlements.
- Improving access to currently inaccessible green spaces, such as areas of privately or estate run woodland, and less accessible common land.
- Considering opportunities to incorporate GI into the Preferred Strategic Site Allocation at Abergavenny East, such as provision of pedestrian/cycle links and greenspaces for people.

**GI Needs & Opportunities for Enhancing Biodiversity & Increasing Ecosystem Resilience**

A sustainable approach is critical for supporting the protection of biodiversity and ecosystem resilience. The biodiversity value of the network of watercourses and woodlands is vulnerable to neglect through lack of appropriate maintenance, changes in drainage and land use. This is essential to increase the range and extent of habitats and species and their resilience.

Strategic priorities and opportunities for optimising the biodiversity and ecosystem resilience benefits of GI in the Central Monmouthshire sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space & Corridors: Working with a range of partners to identify landscape-scale projects to improve habitat condition, connectivity and diversity (such as restoration of floodplain meadows), and support net biodiversity gain; providing habitats along green spaces and corridors for pollinator insects; and promoting biosecurity good practice measures for controlling invasive plant species (e.g. Japanese Knotweed and Himalayan Balsam)
- Strategic Blue Space & Corridors: Managing abstraction to ensure adequate flow and active river processes; creating a joined-up approach to removing or modifying barriers to fish migration (such as on the River Gavenny and the Honddu); preventing deterioration in Water Framework Directive water body status with the aim of achieving good overall status for surface and ground waters; developing a River Usk Special Area of Conservation nutrient management plan; and developing river restoration plans and natural flood management plans for restoring rivers back to good ecological condition and to build resilience against future changes.
- Urban Green Grids: Developing programmes for delivering wildlife site management improvements and habitat creation for the Abergavenny and Usk Urban Green Grids to support urban nature recovery

Within this context, local opportunities for GI to help in addressing biodiversity and ecosystem resilience needs within the Central Monmouthshire – South GI Zone could include:

- Eradicating and/or management of invasive non-native species in line with current national invasive species action plans, including Giant Hogweed.
- Reducing the impact of physical modifications to water courses, improving connectivity, habitat and morphology through soft engineering and restoration techniques. Improving habitats for fish, removing or modifying barriers to passage upstream.
- Reducing the impact of flood defence structures and operations - improve connectivity, habitat, and morphology by implementing options through measures such as soft engineering, opening culverts, upgrading tidal flaps, changing dredging and vegetation management.
- Restoring or enhancing existing assets and habitats to enhance existing green spaces, including restoration of semi-improved pasture and restoration of woodland.
- Encouraging the diversification of habitats to include the creation, restoration and connectivity of flower-rich habitats to support and sustain pollinating insects.
- Considering opportunities to incorporate GI into the Preferred Strategic Site Allocation at Abergavenny East, such as enhancing ecological connections for wildlife

**GI Needs & Opportunities for Strengthening Landscape Character & Distinctiveness**

The extensive network of woodland (covering approximately 10% of the zone) is one of the most distinctive landscape features of the Wye Catchment. There is a need to maintain and enhance these green links, along with other historic landscape features, where appropriate.

Opportunities for GI to help in addressing landscape character and distinctiveness needs within the Central Monmouthshire – South GI Zone could include:

- Enhancing green links within development to strengthen existing settlement character, including key views into and out of settlements and reinforcing sense of place.
- Strengthening settlement edge treatments, reinforcing character, vernacular styles and boundary treatments.
- Researching, conserving and enhancing the historic environment and conserving archaeology.

**GI Needs & Opportunities for Increasing Climate Change Resilience**

In the context of the challenges presented by climate change, there is a fundamental need to manage water appropriately. This is essential for maximising GI benefits such as improved flood management, water and soil quality.

Opportunities for GI to help in addressing climate change resilience and adaptation needs within the Central Monmouthshire – South GI Zone could include:

Strategic priorities and opportunities for optimising the climate change resilience and adaptation benefits of GI in the Central Monmouthshire sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Working with a range of partners to implement sustainable farming practices for improving the ability of soil to store carbon, and identify landscape-scale habitat restoration projects to maximise carbon sequestration in existing ecosystems
- Strategic Green Corridors: Providing a coherent and joined up network of regional green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians to support decarbonisation by reducing use of fossil fuel powered transport and carbon emissions.
- Strategic Blue Space & Corridors: Working with a range of partners as part of a catchment-based approach to identifying landscape-scale projects for implementing natural flood management measures to reduce surface water run-off and slow the flow, limiting flooding downstream (such as extending and connecting floodplain woodlands).
- Urban Green Grids: Developing programmes to increase urban green cover and the tree canopy within green spaces, along streets and on buildings/ structures for the Abergavenny and Usk Urban Green Grids to make urban communities more resilient and adaptable to climate change

Within this context, local opportunities for GI to help in addressing climate change resilience and adaptation needs within the Central Monmouthshire – South GI Zone could include:

- Improving water levels and flows, reducing impacts of more regulated flows and abstractions, restoring more natural flow regimes and implementing options to improve water levels, such as water efficiency and recycling measures, alternative sources and supplies.

**GI Needs & Opportunities for Supporting Sustainable Economic Development**

There is a need to manage the landscape of the Usk Catchment sustainably. This includes a sustainable approach to development and management of environmental impacts in more urban areas; and to farming, which is critical for supporting the protection of soils and water, biodiversity and locally distinctive landscapes in particular.

Opportunities for GI to help in addressing sustainable economic development needs within the Central Monmouthshire – South GI Zone could include:

- Identifying and implementing changes to land drainage regimes and structures to restore water levels.
- Reducing pollution from waste water discharges at point sources. Investigate and implement basic pollution prevention measures, including provision of up to date advice and guidance, such as correct handling and storage of chemicals and waste, management of trade effluent, and regulation.
- Supporting implementation of sustainable agricultural practices, including the implementation of measures such as correct management of slurry, silage, fuel oil, and agricultural chemicals; clean and dirty water separation; nutrient management planning; buffer strips and riparian fencing; cover crops and soil management.
- Supporting sustainable woodland and forestry management, restoring the riparian zone, disconnecting forest drains and using forestry and woodland to reduce diffuse pollution.
- Investigating opportunities to solve misconnections to surface water drains (at residential and commercial properties) and implement sustainable drainage schemes (SuDS) to reduce diffuse pollution.
- Supporting water management; careful management of the various users—Llandegfedd Reservoir: Recreation and Conservation Management Plan, consultation with the Llandegfedd Reservoir User Liaison Group

- Supporting the local farming community, where possible through agri-environment grants (Glastir or its post-Brexit successor scheme), encouraging flexibility in land management, where appropriate maintaining the existing mixed farming systems, and conserving soils.

## Zone D: Central Monmouthshire – North

This section explores opportunities for improving GI within Zone D: Central Monmouthshire – North. The opportunities have been identified through analysis of existing studies, the ecosystem services described in **Appendix D2**, and stakeholder consultation workshops - see **Appendix C**. Where appropriate, these are aligned with the Gwent Green Grid Regional Green Infrastructure Strategy.

### GI Needs & Opportunities for Improving Health & Wellbeing

There is potential to expand access and recreation facilities for local communities and visitors to the Central Monmouthshire – North Zone. There is growing evidence that access to, and enjoyment of natural and semi-natural greenspaces enhances people's health and well-being, particularly in areas of social deprivation.

Opportunities for GI to help in addressing health and well-being needs within the Central Monmouthshire – North GI Zone could include:

Strategic priorities and opportunities for optimising the health and well-being benefits of GI in the Central Monmouthshire sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Supporting responsible public access to the countryside for outdoor recreation to maximise the health and well-being benefits of experiencing areas, while managing impacts of recreation activity on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising
- Strategic Green Corridors: Providing a coherent and joined up network of regional green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians by exploring opportunities for enhancing existing routes (such as the Offa's Dyke Path) and creating new ones where appropriate
- Strategic Blue Space & Corridors: Supporting responsible public access to watercourses/waterbodies for outdoor recreation to maximise the health and well-being benefits of experiencing water environments (such as the the River Monnow), while managing impacts of recreation activity on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising

Within this context, local opportunities for GI to help in addressing health and well-being needs within the Central Monmouthshire – North GI Zone could include:

- Expanding provision of pedestrian paths, rights of way and creation or linking of circular walking routes (for example, the Three Castles Walk) to connect settlements via existing PROW and accessible green space. Connections between the core area where people live and work would also be beneficial. Opportunities also exist to improve access for horse riding with new bridleways/multi-use paths, and to create new cycle route links, connecting to local networks and to the Wye Valley beyond.
- Improving promotion and provision of interpretation for existing pedestrian/cycle paths, rights of way and walking routes.
- Linking to healthy walking schemes and groups, as well as 'Health Walks', which can be prescribed by GPs.
- Increasing allotment provision around smaller settlements.
- Facilitating new or enhanced green space provision; community spaces and play areas.
- Improving the condition of riverbanks, and the creation of fish passes will result in improved habitat for wildlife, and increase the sustainability of fish populations. Benefits to society will include an increase in angling opportunities and general enjoyment of spending time by the river.

- Enhancing existing green spaces and integration of green infrastructure into refurbishment/development of local community assets such as primary schools, and publically owned/managed sites
- Within settlements, linking green spaces between housing.
- Improving riverside access.
- Facilitating access to green spaces close to home rather than travelling to facilities further afield.
- Encouraging local people to become part of PRoW maintenance groups, and to expand this beyond the current demographic.

**GI Needs & Opportunities for Enhancing Biodiversity & Increasing Ecosystem Resilience**

A sustainable approach is critical for supporting the protection of biodiversity and ecosystem resilience. The biodiversity value of the network of watercourses and woodlands is vulnerable to neglect through lack of appropriate maintenance, changes in drainage and land use. This is essential to increase the range and extent of habitats and species and their resilience.

Strategic priorities and opportunities for optimising the biodiversity and ecosystem resilience benefits of GI in the Central Monmouthshire sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space & Corridors: Working with a range of partners to identify landscape-scale projects to improve habitat condition, connectivity and diversity (such as restoration of floodplain meadows), and support net biodiversity gain; providing habitats along green spaces and corridors for pollinator insects; and promoting biosecurity good practice measures for controlling invasive plant species (e.g. Japanese Knotweed and Himalayan Balsam)
- Strategic Blue Space & Corridors: Managing abstraction to ensure adequate flow and active river processes; creating a joined-up approach to removing or modifying barriers to fish migration (such as on the River Monnow); preventing deterioration in Water Framework Directive water body status with the aim of achieving good overall status for surface and ground waters; and developing river restoration plans and natural flood management plans for restoring rivers back to good ecological condition and to build resilience against future changes.

Within this context, local opportunities for GI to help in addressing biodiversity and ecosystem resilience needs within the Central Monmouthshire – North GI Zone could include:

- Improving modified habitats in watercourses, including the removal of barriers to fish migration; improvement to the condition of river channels/ beds and/or banks/shoreline; improvement to condition of riparian zone and /or wetland habitats and through vegetation management. Buffer strips and improvements to the condition of riverbanks will help to protect soils, limiting the amount washed away when it rains.
- Managing invasive non-native species, building awareness and understanding (to slow the spread); and using mitigation, control and eradication to reduce extents.
- Restoring or enhancing existing assets and habitats providing additional/ expansion plantings and habitat to enhance existing green spaces, River Monnow, riverside habitats, managing existing habitats for protected species and maintaining/enabling sensitive public access.
- Improving forestry management, including, where appropriate, replacing with mixed native species and the opportunity to manage forest clearance areas.
- Encouraging the diversification of habitats to include the creation, restoration and connectivity of flower-rich habitats to support and sustain pollinating insects.

**GI Needs & Opportunities for Strengthening Landscape Character & Distinctiveness**

The extensive network of woodland (covering approximately 10% of the zone) is one of the most distinctive landscape features of the Wye Catchment. There is a need to maintain and enhance these green links, along with other historic landscape features, where appropriate.

Opportunities for GI to help in addressing landscape character and distinctiveness needs within the Central Monmouthshire – North GI Zone could include:

- Reinforcing landscape character by creating a multi-use, permeable green edge to settlements, that better integrates with surrounding vegetation pattern
- Improving and enhancing green links within new and proposed development to enhance existing settlement character, reinforce sense of place and improve links to the wider area
- Researching, conserving and enhancing the historic environment and conserving archaeology.

**GI Needs & Opportunities for Increasing Climate Change Resilience**

In the context of the challenges presented by climate change, there is a fundamental need to manage water appropriately. This is essential for maximising GI benefits such as improved flood management, water and soil quality.

Strategic priorities and opportunities for optimising the climate change resilience and adaptation benefits of GI in the Central Monmouthshire sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Working with a range of partners to implement sustainable farming practices for improving the ability of soil to store carbon, and identify landscape-scale habitat restoration projects to maximise carbon sequestration in existing ecosystems
- Strategic Green Corridors: Providing a coherent and joined up network of regional green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians to support decarbonisation by reducing use of fossil fuel powered transport and carbon emissions.
- Strategic Blue Space & Corridors: Working with a range of partners as part of a catchment-based approach to identifying landscape-scale projects for implementing natural flood management measures to reduce surface water run-off and slow the flow, limiting flooding downstream (such as extending and connecting floodplain woodlands).

Within this context, local opportunities for GI to help in addressing climate change resilience and adaptation needs within the Central Monmouthshire – North GI Zone could include:

- Improving natural flows and water levels, using alternative sources and relocating abstraction or discharge points. Improvements to water treatment and restrictions on groundwater abstraction should improve river flows and will increase the enjoyment of the water environment for local communities and improve habitats for wildlife. The farming community will also benefit from an increase in surface water availability.
- Increasing use of SUDS and river buffer zones, helping to hold water back in the catchment and therefore helping to reduce runoff and flood risk.
- Considering the need for more winter storage reservoirs, as rainfall may change in amount and distribution through the year.

**GI Needs & Opportunities for Supporting Sustainable Economic Development**

There is a need to manage the landscape of the Wye Catchment sustainably. This includes a sustainable approach to development and management of environmental impacts in more urban areas; and to farming, which is critical for supporting the protection of soils and water, biodiversity and locally distinctive landscapes in particular.

Opportunities for GI to help in addressing sustainable economic development needs within the Central Monmouthshire – North GI Zone could include:

- Managing pollution from towns and transport by reducing diffuse pollution at source (particularly in relation to Monmouth).
- Managing pollution in rural areas (including from agriculture), reducing diffuse pollution at source, reduce diffuse pollution pathways (i.e. controlling entry to the water environment); and mitigating or remediating diffuse pollution impacts.
- Managing pollution from waste water through mitigating or remediating point source impacts on watercourses.
- Developing a coherent approach to managing a landscape which is diversifying in land use – to include a range of agricultural uses, solar and wind energy generation.
- Developing biomass and wood fuel production.
- Supporting the local farming community, where possible through agri-environment grants (Glastir or its post-Brexit successor scheme), encouraging flexibility in land management, where appropriate maintaining the existing mixed farming systems, and conserving soils.

## Zone E: Bannau Brycheiniog & Black Mountains

This section explores opportunities for improving GI within Zone E: Bannau Brycheiniog & Black Mountains. The opportunities have been identified through analysis of existing studies, the ecosystem services described in **Appendix D2**, and stakeholder consultation workshops - see **Appendix C**. Where appropriate, these are aligned with the Gwent Green Grid Regional Green Infrastructure Strategy. This section should be read in conjunction with the Management Plan For Bannau Brycheiniog National Park 2023-2028

### GI Needs & Opportunities for Improving Health & Wellbeing

There is growing evidence that access to, and enjoyment of natural and semi-natural greenspaces enhances people's health and well-being, particularly in areas of social deprivation. Opportunities for outdoor access and recreation are one of the key purposes of the Bannau Brycheiniog National Park, so there is a need to provide these. The National Park contributes directly to the health and well-being of the nation, not only through its inspirational beauty, but also from the wide range of activities the unique landscape enables. There is a need to carefully manage activities for outdoor access and recreation to ensure that the Park's special qualities are preserved and enhanced.

Strategic priorities and opportunities for optimising the health and wellbeing benefits of GI in the Bannau Brycheiniog & Black Mountains sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Supporting responsible public access to the countryside for outdoor recreation to maximise the health and well-being benefits of experiencing areas (such as the Black Mountains, Sugar Loaf and Skirrid), while managing impacts of recreation activity on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising
- Strategic Green Corridors: Providing a coherent and joined up network of regional green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians by exploring opportunities for enhancing existing routes (such as the Cambrian Way and Beacons Way), and creating new ones where appropriate
- Strategic Blue Space & Corridors: Supporting responsible public access to watercourses/waterbodies for outdoor recreation to maximise the health and well-being benefits of experiencing water environments (such as the River Usk), while managing impacts of recreation activity on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising.

Within this context, local opportunities for GI to help in addressing health and well-being needs within the Bannau Brycheiniog & Black Mountains GI Zone could include:

- Implementing a variety of education, information and interpretation strategies, and to deliver an environmental education programme.
- Enhancing the visitor experience of wildlife, farming, landscape and environment.
- Increasing awareness of and provision for people with disabilities and easier access requirements through the implementation of the Rights of Way Improvement Plan.
- Providing access information in a variety of formats, including communicating information on safety and ecosystems. Develop a coordinated approach for providing information and interpretation to visitors and residents.
- Increasing access by linking promoted routes and public transport.
- Increasing the health and well-being benefit to excluded groups. Develop innovative ways of engaging and interacting with visitors and residents including those excluded by actual or perceived barriers.

- Developing and maintaining access on Wildlife Trust-owned reserves.
- Increasing the ease of use of the Public Rights of Way network (management plan targets 65% or above easy to use).
- Supporting the development of allotments, where appropriate.
- Exploring opportunities to improve provision of pedestrian paths, rights of way and further circular walking routes to connect existing National and regional trails, sites of interest and settlements via accessible green space. There are potential opportunities for numerous shorter trails to links into existing settlements although provision in the area is already good.
- Providing PRoW improvements and enhancements and ongoing maintenance, including improving or maintaining signage and access, and maintaining or upgrading interpretation as appropriate.
- Improving accessibility, including permissive paths to privately owned woodlands, and to habitats of conservation interest or heritage sites near to PRoW access
- Improving access for horse riding where appropriate, to include bridleways and multi-use paths.

**GI Needs & Opportunities for Enhancing Biodiversity & Increasing Ecosystem Resilience**

A sustainable approach is critical for supporting the protection of biodiversity and ecosystem resilience. The biodiversity value of the heathlands, grasslands, woodlands and watercourses are of importance to the National Park. Maintaining and enhancing this network of habitats is important as it is vulnerable to neglect through lack of appropriate maintenance, changes in drainage and land use. This sustainable approach is essential to increase the range and extent of habitats and species and their resilience.

Strategic priorities and opportunities for optimising the biodiversity and ecosystem resilience benefits of GI in the Bannau Brycheiniog & Black Mountains sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space & Corridors: Working with a range of partners to identify landscape-scale projects to improve habitat condition, connectivity and diversity, and support net biodiversity gain; providing habitats along green corridors for pollinator insects; and promoting biosecurity good practice measures for controlling invasive plant species (e.g. Japanese Knotweed and Himalayan Balsam)
- Strategic Blue Space & Corridors: Managing abstraction to ensure adequate flow and active river processes; creating a joined-up approach to removing or modifying barriers to fish migration; and preventing deterioration in Water Framework Directive water body status with the aim of achieving good overall status for surface and ground waters

Within this context, local opportunities for GI to help in addressing biodiversity and ecosystem resilience needs within the Bannau Brycheiniog & Black Mountains GI Zone could include:

- Promoting benefits of high nature value farming.
- Expanding native woodlands and maintain forests, and to practice continuous forestry cover techniques.
- Restoring internationally recognised habitats, and restoring and enhancing habitat connectivity along river valleys.
- Developing monitoring of key habitats, soils and water, and to develop research partnerships.
- Implementing a living landscapes approach to landscape, habitat and wildlife management.

- Prioritising understanding of water and carbon resources management.
- Restoring or enhancing existing assets and habitats, providing management recommendation/support where land is not in public ownership. This should include improving biodiversity value for protected species
- Restoring or enhancing existing assets and habitats providing management recommendations or support where habitats have been degraded.
- Encouraging the diversification of habitats to include the creation, restoration and connectivity of flower-rich habitats to support and sustain pollinating insects.

**GI Needs & Opportunities for Strengthening Landscape Character & Distinctiveness**

The Bannau Brycheiniog Uplands is a diverse and distinctive landscape, where sweeping uplands contrast with green valleys, dramatic waterfalls, ancient woodland, archaeological sites, caves, forests, reservoirs and vibrant communities. There is a need to conserve and enhance this character.

Opportunities for GI to help in addressing landscape character and distinctiveness needs within the Bannau Brycheiniog & Black Mountains GI Zone could include:

- Researching, conserving and enhancing the historic environment and conserving archaeology.
- Implementing an area-based land management project.

**GI Needs & Opportunities for Increasing Climate Change Resilience**

The Bannau Brycheiniog Uplands play a significant role in water storage, quality and release, providing a natural defence against both drought and flood. As long as they are free from the effects of heavy grazing, upland peat bogs store carbon and combat atmospheric pollution and illegal fires. They capture atmospheric carbon which helps mitigate the effects of climate change. There is a need to manage the uplands appropriately to sustain these functions.

Strategic priorities and opportunities for optimising the climate change resilience and adaptation benefits of GI in the Bannau Brycheiniog & Black Mountains sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Working with a range of partners to implement sustainable farming practices for improving the ability of soil to store carbon, and identify landscape-scale habitat restoration projects, especially peatland restoration in the uplands, to maximise carbon sequestration in existing ecosystems
- Strategic Green Corridors: Providing a coherent and joined up network of regional green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians to support decarbonisation by reducing use of fossil fuel powered transport and carbon emissions.
- Strategic Blue Space & Corridors: Working with a range of partners as part of a catchment-based approach to identifying landscape-scale projects for implementing natural flood management measures such as afforestation, particularly in the uplands, to help to reduce surface water run-off and slow the flow, limiting flooding downstream.

Within this context, local opportunities for GI to help in addressing limate change resilience and adaptation needs within the Bannau Brycheiniog & Black Mountains GI Zone could include:

- Encouraging and supporting community-led initiatives that build awareness of and resilience to climate change, fossil fuel depletion and carbon emissions and assure the well-being of communities in the future.
- Implementing measures to limit further erosion, and reverse the current erosion of peat bog.

**GI Needs & Opportunities for Supporting Sustainable Economic Development**

The National Park designation should benefit the local economy and local communities in ways that are sustainable and which work to conserve and enhance the Park's special qualities. The need for sensitive land management by and for the local farming community must be a priority, as is the requirement to establish new links and roles with local communities to foster sustainable economic development.

Opportunities for GI to help in addressing sustainable economic development needs within the Bannau Brycheiniog & Black Mountains GI Zone could include:

- Providing public benefits in the countryside through farming, working with farmers to capitalise on the National Park's status and to support them in changes to farm practices.
- Researching and supporting options for local food/produce marketing, and to promote the use of local food to businesses and visitors.
- Identifying on-farm, sustainable energy projects.
- Supporting the local farming community, where possible through agri-environment grants (Glastir or its post-Brexit successor scheme), encouraging flexibility in land management, where appropriate maintaining the existing mixed farming systems, and conserving soils.

## Zone F: Eastern South Wales Valleys

This section explores opportunities for improving GI within Zone F: Eastern South Wales Valleys. The opportunities have been identified through analysis of existing studies, the ecosystem services described in **Appendix D2**, and stakeholder consultation workshops - see **Appendix C**. Where appropriate, these are aligned with the Gwent Green Grid Regional Green Infrastructure Strategy. This section should be read in conjunction with the Management Plan For Bannau Brycheiniog National Park 2023-2028

### GI Needs & Opportunities for Improving Health & Wellbeing

There is growing evidence that access to, and enjoyment of natural and semi-natural greenspaces enhances people's health and well-being, particularly in areas of social deprivation. Opportunities for outdoor access and recreation are one of the key purposes of the Bannau Brycheiniog National Park, so there is a need to provide these. The National Park contributes directly to the health and well-being of the nation, not only through its inspirational beauty, but also from the wide range of activities the unique landscape enables. There is a need to carefully manage activities for outdoor access and recreation to ensure that the Park's special qualities are preserved and enhanced.

Strategic priorities and opportunities for optimising the health and wellbeing benefits of GI in the Eastern South Wales Valleys sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Supporting responsible public access to urban green spaces and the wider countryside for outdoor recreation and urban food growing to maximise the health and well-being benefits of experiencing these areas, while managing impacts of recreation activity and landscape crime on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising; and working with partners to develop and enhance strategic sites such as country parks and nature reserves as "Discovery Gateways" (such as the Blaenavon World Heritage Centre).
- Strategic Green Corridors: Providing a coherent and joined up network of green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians by exploring opportunities for enhancing existing routes, and creating new ones where appropriate; and working with partners to identify opportunities to better connect active travel routes, walking trails, cycle networks, outdoor recreation destinations and access to urban community woodlands.
- Strategic Blue Space & Corridors: Supporting responsible public access to watercourses/waterbodies for outdoor recreation to maximise the health and well-being benefits of experiencing water environments, while managing impacts of recreation activity on natural and cultural heritage assets by engaging with outdoor activity providers and a public programme of awareness raising

Within this context, local opportunities for GI to help in addressing health and well-being needs within the Eastern South Wales Valleys GI Zone could include:

- Implementing a variety of education, information and interpretation strategies, and to deliver an environmental education programme.
- Enhancing the visitor experience of wildlife, farming, landscape and environment.
- Increasing awareness of and provision for people with disabilities and easier access requirements through the implementation of the Rights of Way Improvement Plan.
- Providing access information in a variety of formats, including communicating information on safety and ecosystems. Develop a coordinated approach for providing information and interpretation to visitors and residents.
- Increasing access by linking promoted routes and public transport.

- Increasing the health and well-being benefit to excluded groups. Develop innovative ways of engaging and interacting with visitors and residents including those excluded by actual or perceived barriers.
- Developing and maintaining access on Wildlife Trust-owned reserves.
- Increasing the ease of use of the Public Rights of Way network (management plan targets 65% or above easy to use).
- Supporting the development of allotments, where appropriate.
- Exploring opportunities to improve provision of pedestrian paths, rights of way and further circular walking routes to connect existing National and regional trails, sites of interest and settlements via accessible green space. There are potential opportunities for numerous shorter trails to links into existing settlements although provision in the area is already good.
- Providing PRoW improvements and enhancements and ongoing maintenance, including improving or maintaining signage and access, and maintaining or upgrading interpretation as appropriate.
- Improving accessibility, including permissive paths to privately owned woodlands, and to habitats of conservation interest or heritage sites near to PRoW access
- Improving access for horse riding where appropriate, to include bridleways and multi-use paths.

**GI Needs & Opportunities for Enhancing Biodiversity & Increasing Ecosystem Resilience**

A sustainable approach is critical for supporting the protection of biodiversity and ecosystem resilience. The biodiversity value of the heathlands, grasslands, woodlands and watercourses are of importance to the National Park. Maintaining and enhancing this network of habitats is important as it is vulnerable to neglect through lack of appropriate maintenance, changes in drainage and land use. This sustainable approach is essential to increase the range and extent of habitats and species and their resilience.

Strategic priorities and opportunities for optimising the biodiversity and ecosystem resilience benefits of GI in the Eastern South Wales Valleys sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space & Corridors: Working with a range of partners, including commoners and landowners, to identify landscape-scale projects to improve habitat condition, connectivity and diversity (such as the Blorenge SSSI), and support net biodiversity gain; providing habitats along green spaces and corridors for pollinator insects; and promoting biosecurity good practice measures for controlling invasive plant species (e.g. Japanese Knotweed and Himalayan Balsam)
- Strategic Blue Space & Corridors: Managing abstraction to ensure adequate flow and active river processes; preventing deterioration in Water Framework Directive water body status with the aim of achieving good overall status for surface and ground waters; developing a nutrient management plan; and developing river restoration plans and natural flood management plans for restoring rivers back to good ecological condition and to build resilience against future changes.

Within this context, local opportunities for GI to help in addressing biodiversity and ecosystem resilience needs within the Eastern South Wales Valleys GI Zone could include:

- Promoting benefits of high nature value farming.
- Expanding native woodlands and maintain forests, and to practice continuous forestry cover techniques.
- Restoring internationally recognised habitats, and restoring and enhancing habitat connectivity along river valleys.
- Developing monitoring of key habitats, soils and water, and to develop research partnerships.
- Implementing a living landscapes approach to landscape, habitat and wildlife management.
- Prioritising understanding of water and carbon resources management.
- Restoring or enhancing existing assets and habitats, providing management recommendation/support where land is not in public ownership. This should include improving biodiversity value for protected species
- Restoring or enhancing existing assets and habitats providing management recommendations or support where habitats have been degraded.
- Encouraging the diversification of habitats to include the creation, restoration and connectivity of flower-rich habitats to support and sustain pollinating insects.

**GI Needs & Opportunities for Strengthening Landscape Character & Distinctiveness**

The Bannau Brycheiniog Uplands is a diverse and distinctive landscape, where sweeping uplands contrast with green valleys, dramatic waterfalls, ancient woodland, archaeological sites, caves, forests, reservoirs and vibrant communities. There is a need to conserve and enhance this character.

Opportunities for GI to help in addressing landscape character and distinctiveness needs within the Eastern South Wales Valleys GI Zone could include:

- Researching, conserving and enhancing the historic environment and conserving archaeology.
- Implementing an area-based land management project.

**GI Needs & Opportunities for Increasing Climate Change Resilience**

The Brecon Beacons Uplands play a significant role in water storage, quality and release, providing a natural defence against both drought and flood. As long as they are free from the effects of heavy grazing, upland peat bogs store carbon and combat atmospheric pollution and illegal fires. They capture atmospheric carbon which helps mitigate the effects of climate change. There is a need to manage the uplands appropriately to sustain these functions.

Strategic priorities and opportunities for optimising the climate change resilience and adaptation benefits of GI in the Eastern South Wales Valleys sub-area identified in the Gwent Green Grid Regional GI Strategy include:

- Strategic Green Space: Working with a range of partners to develop landscape-scale habitat restoration projects (such as peatland restoration in the uplands) to maximise carbon sequestration in existing ecosystems
- Strategic Green Corridors: Providing a coherent and joined up network of green corridors providing high quality, traffic-free active travel routes for cyclists, walkers and equestrians to support decarbonisation by reducing use of fossil fuel powered transport and carbon emissions.
- Strategic Blue Space & Corridors: Working with a range of partners as part of a catchment-based approach to identifying landscape-scale projects for implementing natural flood management measures to reduce surface water run-off and slow the flow, limiting flooding downstream.

Within this context, local opportunities for GI to help in addressing climate change resilience and adaptation needs within the Eastern South Wales Valleys GI Zone could include:

- Encouraging and supporting community-led initiatives that build awareness of and resilience to climate change, fossil fuel depletion and carbon emissions and assure the well-being of communities in the future.
- Implementing measures to limit further erosion, and reverse the current erosion of peat bog.

**GI Needs & Opportunities for Supporting Sustainable Economic Development**

The National Park designation should benefit the local economy and local communities in ways that are sustainable and which work to conserve and enhance the Park's special qualities. The need for sensitive land management by and for the local farming community must be a priority, as is the requirement to establish new links and roles with local communities to foster sustainable economic development.

Opportunities for GI to help in addressing sustainable economic development needs within the Eastern South Wales Valleys GI Zone could include:

- Providing public benefits in the countryside through farming, working with farmers to capitalise on the National Park's status and to support them in changes to farm practices.
- Researching and supporting options for local food/produce marketing, and to promote the use of local food to businesses and visitors.
- Identifying on-farm, sustainable energy projects.
- Supporting the local farming community, where possible through agri-environment grants (Glastir or its post-Brexit successor scheme), encouraging flexibility in land management, where appropriate maintaining the existing mixed farming systems, and conserving soils.

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# Planning Policy Wales 12 Extract - Chapter 6: Distinctive & Natural Places Green Infrastructure Policy

## 6.2 Green Infrastructure

6.2.1 Green infrastructure is the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places. Component elements of green infrastructure can function at different scales and some components, such as trees and woodland, are often universally present and function at all levels. At the landscape scale green infrastructure can comprise entire ecosystems such as wetlands, waterways, peatlands and mountain ranges or be connected networks of mosaic habitats, including grasslands. At a local scale, it might comprise parks, fields, ponds, natural green spaces, public rights of way, allotments, cemeteries and gardens or may be designed or managed features such as sustainable drainage systems. At smaller scales, individual urban interventions such as street trees, hedgerows, roadside verges, and green roofs/walls can all contribute to green infrastructure networks.

6.2.2 The Environment (Wales) Act 2016, provides a context for the delivery of multi-functional green infrastructure. Its protection and provision can make a significant contribution to the sustainable management of natural resources, and in particular to protecting, maintaining and enhancing biodiversity and the resilience of ecosystems in terms of the diversity within and connections between ecosystems and the extent and condition of these ecosystems, so that they are better able to resist, recover from and adapt to pressures. This means that the development of green infrastructure is an important way for local authorities to deliver their Section 6 duty[114].

6.2.3 Green infrastructure is capable of providing several functions at the same time and as a result offers multiple benefits, for social, economic and cultural as well as environmental resilience. The components of green infrastructure, by improving the resilience of ecosystems, can result in positive benefits to well-being including flood management, water purification, improved air quality, reduced noise pollution and local climate moderation, climate change mitigation and food production. These benefits are important in urban environments where they can facilitate health and well-being related benefits of open space, clean air and improved tranquility, for example, as well as creating a sense of place and improved social cohesion. In addition, green infrastructure has a role in protecting local distinctiveness, providing economic benefits and social and community opportunities.

### Taking a proactive approach to Green Infrastructure

6.2.4 Green infrastructure plays a fundamental role in shaping places and our sense of well-being, and is intrinsic to the quality of the spaces we live, work and play in. The planning system must maximise its contribution to the protection and provision of green infrastructure assets and networks as part of meeting society's wider social and economic objectives and the needs of local communities. Taking a proactive and spatial approach, which links to wider activity being taken by local authorities to protect and provide green infrastructure, will help provide clarity around the contribution which the planning system can make. This means considering how it complements existing and future maintenance and management regimes within urban areas and contributes towards wider land management activities in rural areas to aid nature recovery, and its underpinning natural resources[115]. This will require effective joint working and collaboration across various sectors and activities, including administrative boundaries. Establishing arrangements to promote collaboration across local authority borders will be necessary, especially where the provision of off-site compensatory land to address biodiversity loss and provide enhancement will have the greatest benefit for biodiversity and resilient ecological networks.

### Green Infrastructure Assessments

6.2.5 Planning authorities must, as part of adopting a strategic and proactive approach to green infrastructure, biodiversity and ecosystems resilience, produce up to date inventories and maps of existing green infrastructure and ecological assets and networks. Local authorities may already be undertaking such assessments and/or preparing such information to underpin local authority wide green infrastructure strategies and where this is the case planning authorities should both contribute to this process and use the inventories and mapping to underpin a spatial approach in their development plans. Green Infrastructure Assessments provide key evidence to support the preparation of development plans and where authorities are not already actively undertaking assessments, they should be undertaken as part of development plan preparation. Such Green Infrastructure Assessments should use existing datasets, and the best available information, to develop an integrated map-based evidence resource for biodiversity, ecosystem resilience and ecosystem service provision. Doing so will facilitate a proactive approach and enable contributions towards the well-being goals to be maximised.

6.2.6 Green Infrastructure Assessments should also draw from the evidence base provided by NRW's Area Statements and Nature Network Maps, Well-being Assessments and locally and regionally collected green infrastructure data and mapping already underpinning local authority approaches to green infrastructure. Its outcomes should be integrated into development plans to ensure the early and co-ordinated consideration of opportunities to inform the development, design and land related strategies of the development plan. The Green Infrastructure Assessment and outcomes should also be given early consideration in development proposals, and inform the design and implementation of projects.

6.2.7 Considering how significant benefits can be delivered through green infrastructure will be a key aim of the assessment and will require collaboration with other stakeholders, including those across administrative boundaries. Planning authorities should develop a multi-functional, coherent and spatial framework of green infrastructure to improve the overall well-being and health of communities and the environment. The assessment should be used to develop a robust approach to maintaining and enhancing biodiversity, increasing ecosystem resilience and the multiple benefits obtained from nature, and should identify key strategic opportunities where the protection, retention, restoration, creation and connection of green features and functions would deliver the most significant benefits. Outputs from the green infrastructure assessment must address:

[114] Section 6 of the Environment Act 2016.

[115] Future Wales Policy 9.

- The identifying of landscape, biodiversity, geodiversity, and historic and cultural features in which green infrastructure plays a part, which are already being safeguarded as part of multi-functioning urban and rural landscapes;
- The nature emergency identifying and demonstrating how a net benefit for biodiversity will be secured and the attributes of ecosystem resilience enhanced, making the links to other land management activity, such as local nature recovery plans, and identifying land which may be required for the protection, retention and restoration and recovery of nature (and in providing a net benefit for biodiversity). This includes recognising the value of designated sites, and natural resources such as peatlands, as part of resilient ecological networks. In urban areas, the protection and provision of green infrastructure should be considered alongside the needs of wider maintenance regimes and any role development may have in making an effective contribution. The assessments may assist in identifying how the impact of INNS and the risk of introducing or spreading INNS will be managed;
- The reduction of pollution, as far as possible, by identifying green infrastructure/nature based solutions which form part of, or complement, wider activity at a catchment scale to address pollution and improve the restoration of riverine and other habitats;
- The climate emergency by ensuring the multi-functional benefits provided by trees and woodlands are identified; for example, by increasing tree canopy cover in urban areas to ensure shading against increased temperatures, and by requiring effective natural flood management and sustainable drainage schemes. Such measures may also help maintain good air quality and appropriate soundscapes;
- The health and well-being of communities by ensuring they have accessible natural green spaces of various sizes and scales within reasonable walking and cycling distances; and
- How the planning system should secure the implementation and management of green infrastructure, recognising its dynamic nature, over the long term.

6.2.8 The need for ecosystems, habitats and species to adapt to climate change and other pressures should be considered as part of the Green Infrastructure Assessment. This must include identifying ways to avoid or reverse the fragmentation of habitats, and to improve habitat connectivity where appropriate, through the promotion of wildlife corridors, protection of riverine corridors and identifying opportunities for land rehabilitation, reducing pollution, landscape management and habitat restoration, creation and nature recovery. The role of development as part of a spatial approach will be two fold. Planning authorities firstly must ensure that development avoids and then minimises impact on biodiversity and ecosystems and secondly that it provides opportunities for enhancement within areas identified as important for the ability of species to adapt and/or to move to more suitable habitats.

6.2.9 Planning authorities must encourage the appropriate management of features of the landscape which are of major importance for wild flora and fauna in order to complement and improve the ecological coherence of the National Site Network, formally known as the Natura 2000 network[116] well as SSSIs and other statutory and non-statutory designated sites. The features concerned are those which, because of their linear and continuous structure or their function as 'stepping stones' or 'wildlife corridors', are essential for migration, dispersal or genetic exchange. The protection and creation of networks of statutory and non-statutory sites and of the landscape features which provide links from one habitat to another can make an important contribution to developing resilient ecological networks and securing a net benefit for biodiversity and in doing so improve the quality of the local place and its ability to adapt to climate change.

6.2.10 Green Infrastructure Assessments 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. This will ensure development management decisions are informed by appropriate spatial information about the potential effects of development on biodiversity and green infrastructure functions and help identify where different types of green infrastructure benefits/ ecosystems services can be secured. Planning authorities should use the best available data to establish and monitor a set of key indicators and incorporate these indicators into both their Annual Monitoring Reports (AMRs) and, where appropriate, into the appropriate Section 6 Plan and Report. Such indicators will be place-specific and may 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 conditions and obligations would usefully feed into this process in addition to any agreed management plan for the site. 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.

### Integrating Green Infrastructure and Development

6.2.11 The quality of the built environment should be enhanced by integrating green infrastructure into development through appropriate site selection and use of creative design. With careful planning and design, informed by an appropriate level of assessment, green infrastructure can embed the benefits of biodiversity and ecosystem services into new development and places, help to overcome the potential for conflicting objectives, and contribute to health and well-being outcomes.

6.2.12 A green infrastructure statement should be submitted with all planning applications. This will be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal. In the case of minor development this will be a short description and should not be an onerous requirement for applicants. The green infrastructure statement will be an effective way of demonstrating positive multi-functional outcomes which are appropriate to the site in question and must be used for demonstrating how the step-wise approach (Paragraph 6.4.15) has been applied.

6.2.13 There are multiple ways of incorporating green infrastructure, depending on the needs and opportunities a site presents, and the green infrastructure assessment should be referred to, as appropriate, in order to ascertain local priorities. Landscaping, green roofs, grass verges, sustainable drainage and gardens are examples of individual design measures that can have wider cumulative benefits, particularly in relation to biodiversity and

[116] Section 41 of The Conservation of Habitats and Species Regulations 2017 www.legislation.gov.uk/uksi/2017/1012/contents/made

the resilience of ecosystems as well as in securing the other desired environmental qualities of places. Wider landscape measures, such as the creation of species rich meadows, woodlands and the improvement of linkages between areas of biodiversity value should be considered for larger scale development. In most cases the green infrastructure statement should highlight any baseline data considered and surveys and assessments undertaken, including but not limited to, habitats and species surveys, arboricultural surveys and assessments, sustainable drainage statements, landscape and ecological management plans, open space assessments and green space provision and active travel links.

6.2.14 Development proposals should be informed by the priorities identified in green infrastructure assessments and locally based planning guidance. The Building with Nature standards represent good practice and are an effective prompt for developers to improve the quality of their schemes and demonstrate the sustainable management of natural resources. Using these standards in a way which is proportionate to the nature and scale of the development proposed will be a useful way of ensuring appropriate consideration in circumstances where there is an absence of a green infrastructure assessment and planned approach or relevant local or Supplementary Planning Guidance. The standards are underpinned by an accreditation system and whenever possible, accreditation under these standards should be pursued.

# Monmouthshire Wellbeing Plan Extract - Objective 3


# Monmouthshire Public Service Board Well-being Plan

MON MOUTH SHIRE



## Well-being Objective - Protect and enhance the resilience of our natural environment whilst mitigating and adapting to the impact of climate change

### Discover - Situation analysis

The Well-being Assessment highlighted the key challenges and issues for Monmouthshire, those that are directly impacted by this objectives are:

- Limited public transport, particularly in rural areas, makes it harder for people to access jobs, services and facilities. This could be exacerbated by rising fuel prices but there are also future opportunities for investment in public transport through the City Deal and advances in technology such as automated vehicles.
- Air pollution causes significant problems for people's health and is a major contributor to premature deaths in Wales. In Monmouthshire, the greatest problems are caused by vehicle emissions and this is particularly apparent in Usk and Chepstow.
- Water pollution is a concern, from a number of sources, including changing agricultural practices
- Reducing levels of physical activity along with dietary changes are leading to growing levels of obesity. This is likely to lead to an increase in long-term conditions associated with it such as type 2 diabetes
- Development, climate change and pollution all present risks to the natural and built environment. These are central to our well-being and need to be protected and preserved for future generations.
- Climate change is likely to increase the risk of flooding, as well as many other risks, so mitigating climate change and building resilience will be crucial for communities

### Define - Response analysis

Natural resources, such as air, land, water, wildlife, plants and soil, provide our most basic needs, including food, energy and security. Our ecosystems need to be in good condition and resilient in order to keep us healthy, contribute to the physical and psychological well-being and provide vital contributions to the economy through tourism, agriculture, forestry and more. Because these natural resources are key to so many aspects of well-being, they can't be considered in isolation.

The challenges facing our natural environment are many – climate change, development and changing land management practices are all potential threats to our natural resources and ecosystems. This has resulted in a consequent decline in biodiversity which is a threat to how ecosystems function. Tackling these challenges demands integrated and joined up solutions which are developed and delivered by the public, private and voluntary sectors working together. We need to look at adapting to climate change and well as reducing our contribution to it. The Environment (Wales) Act, with subsequent area plans, works alongside the Well-being of Future Generations Act to address these issues.

The public sector in Wales has huge potential to use its collective purchasing power to support the local economy by specifying and buying food, energy, goods and services locally. Procurement can also have significant global impacts and thought needs to be given to being globally responsible. With Brexit on the horizon, there may be potential for public services to have more flexibility in their purchasing decisions, creating regional jobs and business growth

whilst reducing transport and pollution. Brexit also adds uncertainty for a number of sectors, including agriculture which is an important sector in Monmouthshire.

Monmouthshire has great potential to generate renewable energy locally. Several renewable energy community interest companies already exist in the county and developing more localised business models for renewable energy and heat generation, storage and distribution will increase energy resilience as well as reducing carbon emissions.

In order for air pollution to be within safe limits for all Monmouthshire residents, transport sources have the potential to be addressed by developing the infrastructure needed for alternative vehicle use, such as electric vehicle charging, which during 2017 has just started being developed in Monmouthshire, and the forthcoming trial in the county of the Rasa hydrogen-powered vehicle. Alongside this, developing public transport solutions is essential to address rural isolation and access to jobs and services.

Promoting active travel (walking and cycling) in both rural and urban areas, and using opportunities offered by the Active Travel Act will help to reduce air pollution but will also have significant health benefits for all ages. Careful planning and design, including using a Green Infrastructure approach, is needed to develop safe, healthy and vibrant communities which have good access to safe and accessible routes and green spaces.

In order to build species and ecosystem resilience in the face of the likely trend of hotter, drier summers and warmer, wetter winters, or other pressures on our natural environment, landscape-scale biodiversity action is needed. Habitats need to be well connected in order to be resilient. Successful partnerships already exist, such as the Wye and Usk Foundation and the Living Levels project, and these partnerships need to be supported and replicated. Acting at a landscape scale also has the potential to provide significant natural flood risk management, and reducing the risk of flooding has economic, social and health benefits.

In all of these areas, working with young people who will be the decision makers of the future is essential. Through schools, youth work and community groups, young people need to understand what sustainable development is, know why it is important, be inspired to make a difference and empowered to become innovative, creative, caring citizens of the future.

## Well-being goals contributed to

| | | | | | | |
|---|---|---|---|---|---|---|
| Prosperous Wales (1) | Resilient Wales (2) | Healthier Wales (3) | More equal Wales (4) | Wales of cohesive communities (5) | Vibrant culture & thriving Welsh language (6) | Globally responsible Wales (7) |

As well as being key to environmental well-being, a Resilient environment is essential to the local economy, to physical and mental health and building Cohesive Communities. To be Globally Responsible, we need to work together to reduce the carbon and pollution we emit by tackling sustainable transport and our energy use and generation. Key to this objective is working with children and young people to help them understand their role in looking after our environment, reducing our environmental impact and recognising the importance of "thinking globally and acting locally".

## Delivering the Solution

| The PSB will focus on: | Objective links | Goals | Impact |
|---|---|---|---|
| Improving the resilience of ecosystems by working at a larger scale (landscape) to manage biodiversity and maximise benefits such as natural flood risk management |  | 1, 2, 3 | Long |
| Ensuring design and planning policy supports strong, vibrant and healthy communities that are good for people and the environment. |  | 1, 2, 3, 5, 7 | Long |
| Enabling renewable energy schemes, especially community-owned schemes, and developing new solutions including storage, smart energy, heat and local supply. |  | 1, 5, 7 | Short |
| Enabling active travel and sustainable transport to improve air quality and give other health benefits. |  | 1, 5, 6, 7 | Med |
| Working with children and young people to improve their awareness, understanding and action for sustainable development and make them responsible global citizens of the future. |  | 1, 2, 3, 4, 5, 6, 7 | Long |

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# Sources of Advice

## Sources of Advice

**Monmouthshire County Council**
Development Management Department
County Hall, Rhadyr,
Usk, NP15 1GA
01633 644831
planning@monmouthshire.gov.uk

**Monmouthshire County Council**
Monlife
County Hall, Rhadyr,
Usk, NP15 1GA
01633 644850
countryside@monmouthshire.gov.uk
rightsofway@monmouthshire.gov.uk
greenInfrastructure@monmouthshire.gov.uk

**Monmouthshire County Council**
**Highways Department**
County Hall, Rhadyr,
Usk, NP15 1GA
01633 644644
highways@monmouthshire.gov.uk

**Bannau Brycheiniog National Park Authority**
Plas y Ffynnon, Cambrian Way Brecon,
Powys, LD3 7HP
01874 624437
strategy@beacons-npa.gov.uk
Management Plan (2023-2028) available from: https://future.bannau.wales/introducing-the-management-plan/

**Wye Valley National Landscape** AONB **Unit**
Hadnock Road,
Monmouth, NP25 3NG
01600 713977
aonb.officer@wyevalleyaonb.org.uk
Management Plan (2021-2026) available from: https://www.wyevalleyaonb.org.uk/wp-content/uploads/Wye-Valley-AONB-Management-Plan-2021-26-finalised.pdf

**Natural Resources Wales**
Ty Cambria, 29 Newport Road,
Cardiff, CF24 0TP
0300 065 3000
enquiries@naturalresourceswales.gov.uk

**Cadw**
Welsh Government, Ty Afon,
Coed Bedwas Road, Caerphilly, CF83 8WT
0300 0256000
Cadw@gov.wales

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# Biodiversity & Ecosystem Resilience Forward Plan Objectives

## Objectives

| | |
|---|---|
| **Objective 1: Embed biodiversity throughout decision making at all levels** | •Corporate Policy, Well-being Policy and Planning, Strategic Plans e.g. RLDP, Consents, Operational decisions, |
| **Objective 2: Provide nature-based opportunities to raise awareness, support health and well-being and encourage action for nature** | •Environmental Education, Health & Wellbeing activities in nature, providing interpretation and guidance, supporting local groups and citizens to act for nature. |
| **Objective 3: Undertake land management for biodiversity and promote ecosystem resilience** | •Management of Council estate for nature recovery. |
| **Objective 4: Influence land management to improve ecosystem resilience** | •Supporting other landowners and stakeholders to make positive changes e.g. Regenerative Farming and Natural Flood Management. |
| **Objective 5: Tackle key pressures on species and habitats** | •Addressing drivers through project and procedure e.g. Delivering net benefit through Development Management, Invasive non-native species control, impacts of lighting. |
| **Objective 6: Support landscape scale projects and partnerships to maximise delivery** | •Collaboration, co-design and co-production through Catchment Partnerships, landscape partnerships, project partnerships. |
| **Objective 7: Use improved evidence, understanding and monitoring to inform action** | •Nature Networks, undertaking and encouraging others to undertake monitoring and biological recording. |
| **Objective 8: Monitor the effectiveness of the plan and review** | •Undertake statutory reporting and assess the need to update the plan. |

Prepared by


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