Worcestershire Green Infrastructure Strategy

2023-2028

Find out more online:
www.worcestershire.gov.uk

worcestershire
county council

The following organisations are members of the **Worcestershire Green Infrastructure Partnership**:

- Bromsgrove District Council
- Environment Agency
- Forestry Commission
- Historic England
- Malvern Hills District Council
- Natural England
- Redditch Borough Council
- Sustrans
- Woodland Trust
- Worcester City Council
- Worcestershire Biological Records Centre
- Worcestershire County Council
- Worcestershire Wildlife Trust
- Wychavon District Council
- Wyre Forest District Council

Foreword

Ours is a special county. It is blessed with a diverse range of species and habitats, landscape character and topography, that together we recognise as uniquely Worcestershire. Whether it's the orchards of the Vale of Evesham, the rolling woodlands of the Wyre Forest, the serpentine rivers Severn and Avon or the iconic Malvern Hills, there's a lot to treasure in our countryside. Nestled within this rural context are Worcestershire's villages, towns and city: the focus for development, commerce, housing and entertainment.

Wherever we live we all benefit from the services the natural world provides, whether it's directly, through employment in land-based industries, the food we eat or the places we visit, or indirectly, through the air we breathe and the water we drink. It nourishes and inspires us, delivering a backdrop to our daily lives and the cultural and built heritage we collectively enjoy.

Sadly though, our natural world is under pressure like never before. The twin threats of climate change and biodiversity decline are undermining the Earth's capacity to deliver the essential, invariably free, services it provides. Increasing population pressure, land-use intensification and development are reducing the natural environment's ability to deliver functions such as flood control, pollution amelioration and pollination services and we are increasingly boxed into a world where costly, and often ineffectual or unsustainable, man-made solutions must be sought instead.

Taking bold steps to deliver meaningful Green Infrastructure offers a bridge to that divide, integrating the natural environment into our daily lives whilst delivering development which simultaneously allows and promotes natural processes. A Green Infrastructure approach can offer the recreational opportunities so beneficial to our health and well-being, enhance biodiversity and provide solutions that help alleviate the impacts we face from increasingly erratic weather patterns and the polluting side effects of our 21st century lifestyles.

This document sets out key principles and mechanisms by which we can make the most of Green Infrastructure in Worcestershire. It is a document of hope and one that must become a powerful tool in delivering a more sustainable future for our communities and county.

Steve Bloomfield
Chair, Worcestershire Green Infrastructure Partnership

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1. Introduction

Green Infrastructure Framework in Worcestershire

1.1 The Worcestershire Green Infrastructure Partnership (WGIP) is a cross-disciplinary partnership of statutory agencies, voluntary organisations, local district councils and the county council. The purpose of the Partnership is to optimise planning and delivery of green infrastructure (GI) in Worcestershire. The partners represent a diverse range of interests and sectors, encompassing the natural and historic environment, sustainability, recreation and transport.

1.2 One of the Partnership's roles is to publish the Worcestershire Green Infrastructure Strategy. The Strategy is a non-statutory county-wide guidance document which aims to:

- direct and drive the delivery of GI in Worcestershire; and
- inform relevant strategies and plans of partner organisations.

1.3 The evidence base for the Worcestershire Green Infrastructure Strategy comprises the following four documents[1].

- **GI Framework Document 1** establishes the GI concept and policy context for Worcestershire
- **GI Framework Document 2** establishes Environmental Character Areas based on natural environment datasets
- **GI Framework Document 3** explores the supply, potential need and capacity of strategic recreational assets
- **GI Framework Document 4** investigates the economic, health and climate change benefits of GI

1.4 The Strategy contains high-level priorities which should be explored in more detail at the local and site level.

1.5 More detail about the Worcestershire Green Infrastructure Partnership, the Worcestershire GI evidence base, and the local and national policy context for the GI Strategy can be found in **Appendix A**.

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1   GI Framework Documents can all be found at: **https://www.worcestershire.gov.uk/planning-policy-and-strategy/planning-green-infrastructure**

Structure of the Worcestershire Green Infrastructure Strategy

1.6   The Worcestershire Green Infrastructure Partnership has developed this strategy to drive forward the delivery of the GI agenda in the county. It sets out county-scale principles to inform plans and strategies being developed by partner organisations and to enable a coherent approach to delivery across a range of initiatives.

1.7   The Strategy consists of eight sections outlined in the table below:

Table 1: Structure of the Worcestershire Green Infrastructure Strategy

Document Section	Content
Section 1	Introduces GI concepts, with specific reference to Worcestershire.
Section 2	Sets out the vision and objectives of the Strategy.
Section 3	Outlines the context for GI in Worcestershire. More detailed evidence can be found in the GI Framework Documents section in **Appendix A**.
Section 4	Identifies and illustrates spatial priorities for green infrastructure in Worcestershire. The green infrastructure profiles which served in identifying the priorities are presented in **Appendix C**.
Section 5	Identifies key opportunities for delivery through working in partnership with developers, decision makers, land managers and other key partners. Detailed priorities for delivery are contained in **Appendix D**.
Section 6	Considers funding and viability, with more detail in the GI Framework Documents.
Section 7	Identifies how the strategy will be monitored.
Section 8	Outlines the next steps for the Worcestershire Green Infrastructure Partnership and its individual members.

What is Green Infrastructure?

1.8   Green Infrastructure is the planned and managed network of green spaces and natural elements[2] that intersperse, permeate and connect our cities, towns and villages. GI comprises biodiversity, the landscape, the historic environment, the water environment (also known as blue infrastructure), publicly accessible green spaces including Public Rights of Way, and formal and informal outdoor sport and recreation areas. Land used primarily for food, fuel or timber production can also contain GI features or be managed in a way that offers multi-functional GI benefits alongside these activities.

1.9   Urban, peri-urban and rural locations will have different pressures and demands on land use and different roles to play in the delivery of GI, but the provision of appropriate accessible and functional GI is of equal importance and relevance to all locations.

1.10   Traditionally the focus has been on the environmental benefits of green spaces, but the underlying principle of GI is that the same area of land can frequently offer multiple benefits. The Green Infrastructure approach therefore integrates consideration of provision and enhancement of natural capital assets with economic, health and social benefits to ensure that delivery against both environmental and socio-economic objectives is central to the planning, management and delivery of these spaces.

1.11   Green spaces and natural elements do not exist in isolation. Considering the connectivity between GI assets in an integrated way achieves benefits far greater than when individual components are considered separately. Connectivity between GI assets may be physical but may also exist in other ways, for example the views out of, into and between GI assets may affect how users perceive, value and use those assets. There are many advantages to be gained from a critical mass of GI that is clustered together and other benefits to be gained from pursuing different but integrated priorities across different sites.

What does good Green Infrastructure look like?

1.12   The national 'Green Infrastructure Framework – Principles and Standards for England', developed by Natural England, defines **'what' good GI looks like** through the following five descriptive principles[3]:

- **Multifunctional:** GI should deliver a range of functions and benefits for people, nature and places, and address specific issues to meet their needs. Multifunctionality (delivering multiple functions from the same area of GI) is especially important in areas where provision is poor quality or scarce.

- **Varied:** GI should comprise a variety of types and sizes of green and blue spaces, green routes and environmental features (as part of a network) that can provide a range of different functions, benefits and solutions to address specific issues and needs.

- **Connected:** GI should function and connect as a living network for people and nature at all scales, (e.g. within sites, and across regions/at national scale). It should enhance ecological networks and support ecosystem services, connecting provision of GI with those who need its benefits.

- **Accessible:** GI should create and maintain green liveable places that enable people to experience and connect with nature, and that offer everyone, wherever they live, access to good quality parks, green spaces, recreational, walking and cycling routes that are inclusive, safe, welcoming, well-managed and accessible for all.

- **Character:** GI should respond to an area's character so that it contributes to the conservation, enhancement and/or restoration of landscapes or, in degraded areas, creates new high-quality landscapes to which local people feel connected.

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2   Examples of natural elements include rivers, streams, wetlands, woodlands, grasslands, hedgerows, street trees and rock exposures.

3   Natural England Green Infrastructure Principles: **https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Principles/WhatPrinciples.aspx**

1.13 GI can be planned and delivered at different scales:

- **Strategic or county scale:** These are large-scale projects which provide functions and facilities which benefit more than one district or population within the county. An example of strategic green infrastructure would be the provision of a 100ha+ country park to attract visitors from the whole of the county, or a large-scale flood alleviation scheme to reduce the incidence of fluvial flooding (such as the Kidderminster flood alleviation scheme on the River Stour).

- **District scale:** These are green infrastructure schemes providing a range of functions at a district level which benefit the population of the district. An example is the green infrastructure corridor alongside the River Severn in Worcester, providing a range of functions including flood alleviation, off-road walking and cycling routes and enhanced biodiversity.

- **Neighbourhood or local scale:** These are small-scale green infrastructure enhancements which would typically be included within a development site. Examples could include off-road multi-user paths connecting with the local centre which also incorporate sustainable drainage provision through swales and balancing ponds.

1.14 Worcestershire has numerous GI assets which contribute to the unique character of the county. They deliver many different functions and varied benefits. Some of these assets, such as the Malvern Hills and the Wyre Forest, are nationally recognised. Others, such as the Droitwich Canal and Lickey Hills, are widely appreciated by local communities. This strategy is primarily concerned with large-scale green infrastructure, also known as 'strategic green infrastructure', but many of the principles will also apply to the provision of green infrastructure at district and neighbourhood scales.

1.15 Other types of GI assets offer physical connections between strategic, district or local-scale sites as well as often being linear green spaces in their own right. This includes the county's Public Rights of Way network and parts of the National Cycle Network. A number of long-distance trails traverse Worcestershire, including the Geopark Way, the Teme Valley Way and the Wychavon Way.

Why provide Green Infrastructure?

1.16 The national Green Infrastructure Framework defines **'why' we should provide GI** through the following five benefit principles[4]:

- **Nature-rich beautiful places:** GI supports nature to recover and thrive everywhere, in towns, cities and countryside, conserving and enhancing natural beauty, wildlife and habitats, geology and soils, and our cultural and personal connections with nature.

- **Active and healthy places:** Green neighbourhoods, green/blue spaces and green routes support active lifestyles, community cohesion and nature connections that benefit physical and mental health and wellbeing, and quality of life. GI also helps to mitigate health risks such as urban heat stress, noise pollution, flooding and poor air quality.

- **Thriving and prospering communities:** GI helps to create and support prospering communities that benefit everyone and adds value by creating high quality environments which are attractive to businesses and investors, create green jobs, support retail and high streets, and to help support the local economy and regeneration.

- **Understanding and managing the water environment:** GI reduces flood risk, improves water quality and natural filtration, helps maintain the natural water cycle and sustainable drainage at local and catchment scales, reducing pressures on the water environment and infrastructure, bringing amenity, biodiversity, economic and other benefits.

- **Resilient and climate positive places:** GI makes places more resilient and adaptive to climate change and helps to meet zero carbon and air quality targets. GI itself should be designed to adapt to climate change to ensure long term resilience.

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4 **https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Principles/WhyPrinciples.aspx**

How will investment in Green Infrastructure benefit Worcestershire?

1.17 Worcestershire's natural and historic environment helps to define our county. It provides a strong sense of place and attracts and retains people and businesses. GI contributes a vast and sometimes overlooked range of benefits to the economy and to local communities. Investing in multi-functional Green Infrastructure will:
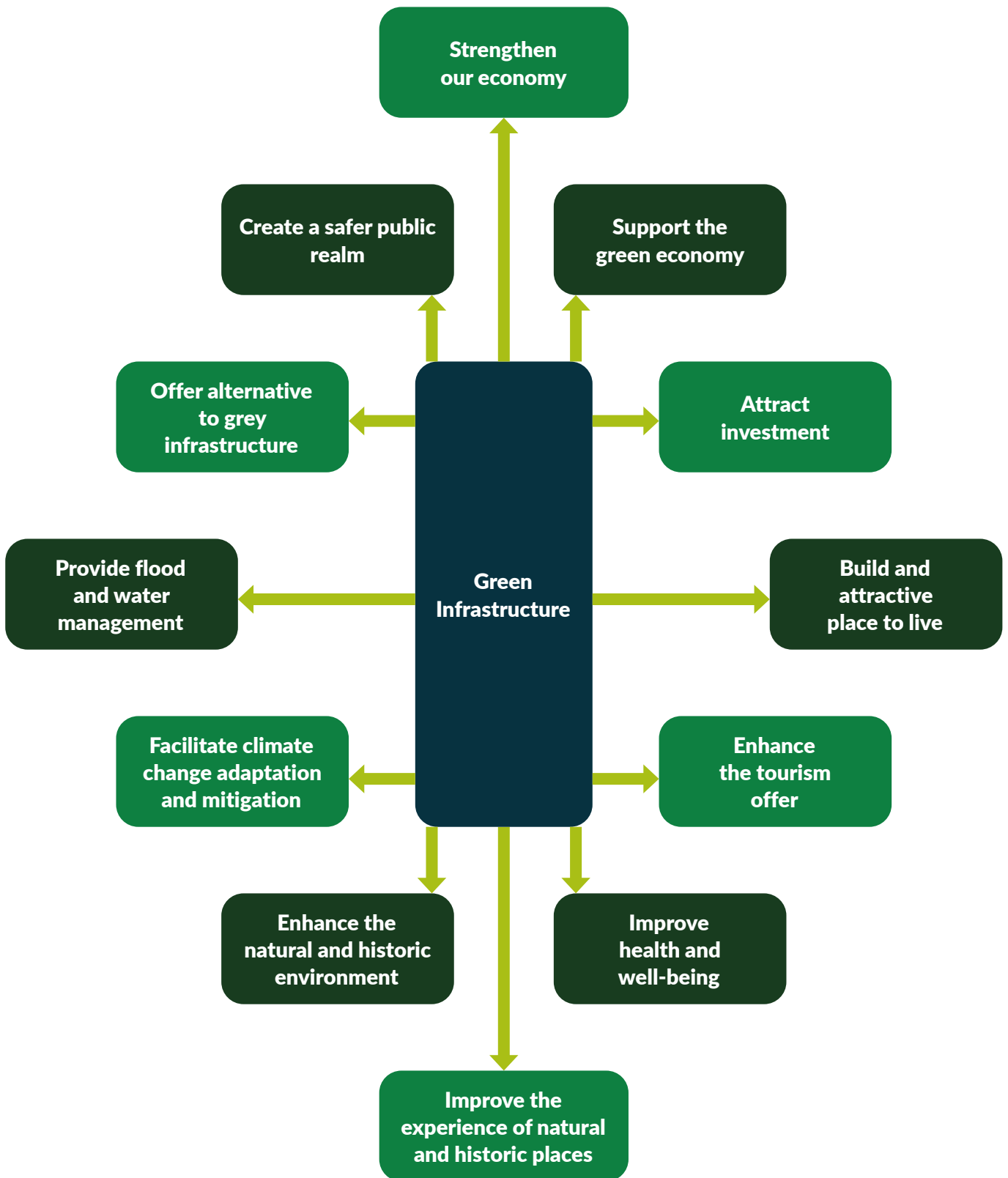
Figure 1. Benefits of multifunctional Green Infrastructure

- **Strengthen our economy:** The UK's stock of natural capital assets has been valued at £1.2 trillion, with £15 billion of this attributable to the tourism and recreation sectors[5] . Protecting natural areas can deliver economic returns that are 100 times greater than the cost of their protection and maintenance[6]. There were 21,600 full-time equivalent (FTE) employees in nature-based jobs in the UK in 2019[7].

- **Support the green economy:** Green Infrastructure can support the green economy through the provision of goods such as biofuels, which offer renewable energy opportunities. Technological innovation in this area will enable business growth, skills development and new employment opportunities. Worcestershire's Low Carbon and Environmental Goods and Services sector was worth £1.5bn to the Worcestershire economy in 2019/20, as indicated by the value of sales in the sector. These sales were generated by over 700 businesses that employed over 11,000 people in the sector in 2019/20[8].

- **Attract Investment:** The quality of the natural environment forms a key part of the Worcestershire 'offer' for businesses seeking to locate in the county, with many businesses citing quality of life potential as being a key factor in their choice of business location. In addition, the Worcestershire LEP energy strategy recognises that the natural environment of Worcestershire is a key USP that can support the inward investment proposition for the county[9]. There will also be future opportunities for receiving financial investment for natural capital enhancement through emerging markets around Biodiversity Net Gain, carbon etc.

- **Build on Worcestershire's reputation as an attractive place to live:** 65% of people report that being able to access nature and green space in their local area has always been important to them[10]. Being located within 500 metres of publicly accessible green or blue infrastructure adds £3,146 to the average property price. Having a view of green space was estimated to have added £9.6 billion to property prices in the UK over a 12-month period (2016).[11]

  The People and Nature[12] survey in 2020 found that the vast majority of adults (89 per cent) agreed or strongly agreed that green and natural spaces should be good places for mental health and wellbeing, with 30 per cent reporting visiting local green and natural spaces more than usual during the Covid pandemic. In the Worcestershire Viewpoint Survey 2021 access to nature and parks and open spaces were two of the top five things residents thought made somewhere a good place to live. In 2020, the official ONS data showed the rating for happiness in Worcestershire was slightly above the national average[13].

- **Support and enhance Worcestershire's tourism offer:** Tourism is one of the largest industries in Worcestershire, being worth approximately £990 million in 2019 (pre Covid level) with 6.7% of the population working directly in the visitor economy[14]. Many of Worcestershire's high quality green spaces attract visitors from outside the county. The Lickey and Clent Hills attract many visitors from the Birmingham and Black Country conurbation and the Malvern Hills, Cotswolds and Wyre Forest attract visitors from places further afield such as London, Bristol and Liverpool, particularly since the Covid pandemic. In 2021 a Visit Worcestershire Visitor Survey highlighted that 48% of visitors were interested in cycling and 97% in walking. 57% of people also indicated they would like to visit the Malvern Hills, with utilising canals and visiting other viewpoints and landscapes high on people's 'Worcestershire Wishlist'.

5   UK Natural Capital Accounts: 2021 (2021). Office for National Statistics.

6   Economics of Ecosystems and Biodiversity Study quoted in Natural Environment White Paper (p10)

7   **"Nature jobs" using environmental goods and services sector data - Office for National Statistics (ons.gov.uk)**

8   Midlands Low Carbon and Environmental Goods and Services (LCEGS) Sector Study. **https://www.wlep.co.uk/wp-content/uploads/LCEGS_Worcestershire_LEP_Report_Final.pdf**

9   Worcestershire LEP Energy Strategy **https://www.wlep.co.uk/wp-content/uploads/P3695-Worcestershire-Energy-Strategy-Strategy-with-glossary.pdf**

10 Why Access to Green Space Matters **https://cdn.ramblers.org.uk/media/files/ramblers-access-nature-11_0.pdf**

11 UK Natural Capital Accounts: 2020 (2020). Office for National Statistics.

12 **https://naturalengland.blog.gov.uk/2020/09/30/enhancing-englands-urban-green-spaces/**

13 **Personal well-being in the UK - Office for National Statistics (ons.gov.uk)**

14 Economic Impact of Tourism (2019). Worcestershire County Council.

- **Improve health and well-being:** Proximity to greenspace is generally associated with increased levels of physical activity, with associated benefits for both physical and mental health. Doing 30 minutes of moderate exercise on at least five days a week helps to prevent and manage over 20 chronic health conditions[15] yet 1 in 4 of us do fewer than 30 minutes of physical activity a week[16]. People and Nature survey data show that 49% of people who had visited natural spaces during the period April 2020 to March 2021 had spent that time in areas of urban greenspace such as a park[17]. Increased physical activity arising from better access to high-quality greenspace has the potential to save £2.1 billion a year in health costs in England[18].

- **Improve the community's experience of natural and historic places:** Integrating access to green spaces and historic places into the everyday lives of communities can help to develop a connection with the local area, increase community participation and reduce anti-social behaviour. Access points and routes should be designed to promote inclusivity for multiple user groups.

- **Enhance the natural and historic environment:** This can include creating and enhancing biodiversity, connecting wildlife corridors and networks, protecting and enhancing landscape character, and improving the quality of our rivers and streams as well as conserving and enhancing heritage assets such as historic landscapes and archaeology, and improving the setting of historic buildings and monuments.

- **Facilitate climate change adaptation and mitigation:** To maximise the capacity of our natural environment, towns and cities to cope with climate change, we need to establish an ecological network that is as robust and resilient as possible to current and predicted future conditions, and that can help to mitigate the impacts of extreme weather events, for example through shading, cooling and storm water storage. Green and blue infrastructure can help to cool urban environments and remove air pollution particulates, in addition to capturing and sequestering carbon when managed appropriately[19].

- **Provide flood alleviation and water management:** GI can play a key role in sustainable drainage solutions, drought mitigation, and in flood and water stress reduction. GI can provide opportunities for attenuation or infiltration that can help to recharge aquifers as well as maintaining levels in watercourses or other blue infrastructure features. GI can influence water quality through limiting diffuse pollution and controlling water levels in watercourses.

- **Offer a cost-effective alternative to investing in traditional (or grey) infrastructure:** GI can provide alternative solutions to providing drainage, managing blue infrastructure, promoting non-vehicular transport and contributing to sources of renewable energy.

- **Create a safer public realm:** Green Infrastructure features can be designed and placed to provide separation and distance between the highway and pedestrians, cyclists, horse riders and other vulnerable road users. This can make streets safer and encourage walking and cycling in particular as a means of sustainable transport. Research has shown that the use of street trees is effective as a traffic-calming measure[20]. Trees, hedgerows and other vegetation can also mitigate the negative impacts of fine particulate air pollution within urban areas.

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15   Start Active, Stay Active: A report on physical activity for health from the four home countries' Chief Medical Officers (2011).

16   Sport England Active Lives survey data **https://www.sportengland.org/research-and-data/research/inactive-people?section=research**

17   The People and Nature Survey for England. **https://www.gov.uk/government/collections/people-and-nature-survey-for-england#monthly-interim-indicators-year-1-(april-2020-%E2%80%93-march-2021)**

18   Improving access to greenspace: A new review for 2020 (2020). Public Health England.

19   UK Natural Capital Accounts: 2020 (2020). Office for National Statistics.

20   Trees in Hard Landscapes: A Guide for Delivery. Trees and Design Action Group **tdag_tihl.pdf**

Case Study: Delivery of multi-functional GI benefits in the proposed 8 Hills Regional Park

The National Trust is developing proposals for a c. 50 square mile '8 Hills' regional park in Bromsgrove District. Sitting on the edge of Birmingham's urban fringe, this is an area that is likely to need to accommodate development and increasing recreational pressures. The main aims of the 8 Hills project are to enhance Green Infrastructure, its biodiversity and connectivity, and increase people's access to nature for health and wellbeing. The concept does not seek to prevent development but work in partnership with landowners and stakeholders to establish a clear landscape framework that delivers for nature and recreation, encourages active travel and sustainable farming, whilst accommodating potential development.
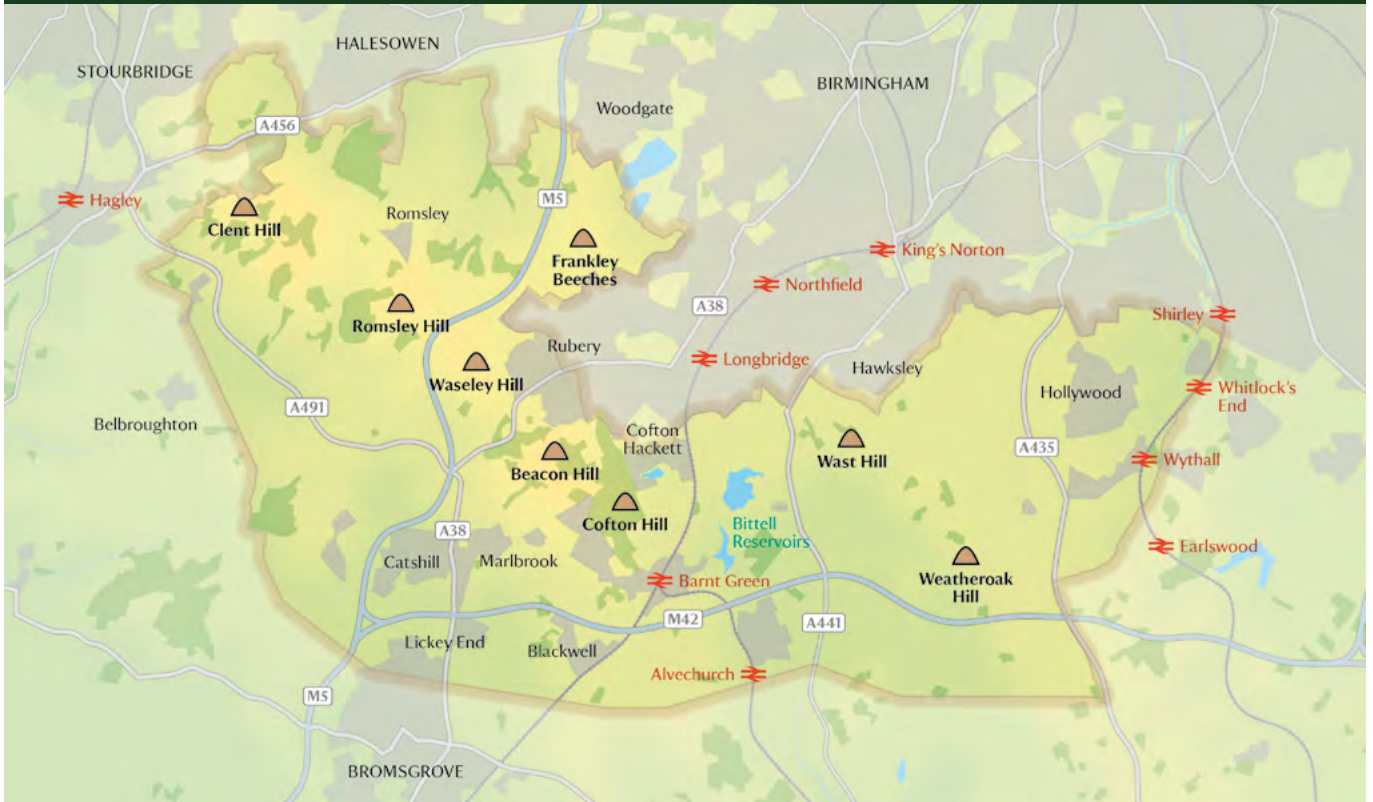
The proposed area for the regional park encompasses eight local hills, all distinct landmarks, hence the working title of the project

To increase people's access to greenspace and improve health and wellbeing, National Trust is developing a spatial framework that will identify opportunities for the creation of new access, seek to connect communities with their local green spaces and provide an improved network of active travel routes. New models of incentivising landowners and managers to provide increased access provision are being explored. This could include payments to land managers based on numbers of visitors using new routes and the potential for community acquisition of paths where appropriate and agreed to by the landowner. The aim is to minimise land taken away from agricultural production as well as managing the impact of visitor access on crops and stock. New access pilots are expected to start in 2024-5.

The financial model being developed will offer an innovative approach to financing green infrastructure, meaning that 8 Hills will provide significant support to the local green economy. A Payments for Ecosystem Services (PES) scheme will attract investment from businesses who benefit from the landscape's ecosystem services. Mechanisms being explored include development levies, Biodiversity Net Gain projects, Environmental, Social and Governance (ESG) contributions and direct trading between farms and businesses to ensure that the businesses who depend on the natural resources pay to help look after them and make them sustainable. Outcomes could include flood risk alleviation, air and water quality improvements, and habitat creation and restoration.

2. Vision and Objectives

Vision

2.1 The Worcestershire Green Infrastructure Partnership has developed the following vision for GI in the county:

Worcestershire's high quality natural and historic environment will fulfil a multi-functional role. It will underpin and enable sustainable growth of the economy, significantly improve our communities' experience of natural and historic places, deliver meaningful benefits to health and well-being and underpin and act as the foundation for the county's resilience to climate change.

2.2 The Green Infrastructure Strategy aims to deliver the GI Partnership's vision through the objectives specified below.

2.3 GI will be planned and managed to form a network of integrated spaces. GI will be delivered both as part of new development and through changes to the management and maintenance of existing areas. Future development in Worcestershire should ensure the sustainable delivery of GI.

2.4 The key to success will be working together. The GI approach requires joined-up, partnership working, which uses available resources to secure the greatest gains for both the environment and the sustainable economy. This is something we are good at in Worcestershire, but to succeed we need continued commitment to a shared direction.

2.5 To deliver this strategy, the Green Infrastructure Partnership will work with a wide range of stakeholders across the public and private sectors, within and outside the county, to seek alignment between the Green Infrastructure Strategy and the plans, strategies and delivery proposals of other stakeholders.

Objectives

2.6 The overarching **Strategic Objectives** of the **Green Infrastructure Strategy** are to:

- Establish a framework of principles and priorities for Green Infrastructure in Worcestershire to meet the multiple integrated needs of business, the environment and communities, and manage transition in response to the impacts of climate change.
- Embed the benefits of Green Infrastructure and the services the environment provides in supporting the successful growth of Worcestershire's economy and the health and well-being of its communities.
- Synthesise existing evidence to identify needs and opportunities to inform the future planning and management of Green Infrastructure in Worcestershire which complements wider networks beyond Worcestershire.
- Drive the implementation, delivery and long-term maintenance of high-quality Green Infrastructure in the county and ensure that measures are in place to deliver the vision.
- Assist Partners in aligning future delivery projects and their funding streams.

2.7 There is the potential to deliver green infrastructure through a wide range of activities including new development and effective land management practices. The development industry and planning system will have a key role to play, but other sectors also have the potential to make a significant contribution.

2.8 Key stakeholders and strategies relating to GI in the county include those set out in Figure 2.

Key Partners

Figure 2: Key Partners in the delivery of Green Infrastructure in Worcestershire

2.9 Please note that the above list of partners is indicative and focuses on only key workstreams and documents prepared by these organisations and groups. A more comprehensive list of relevant documents can be found in **Appendix E.**

3. Green Infrastructure Context

Green Infrastructure Framework for England

3.1   The 'Green Infrastructure Framework – Principles and Standards for England'[21] , launched in January 2023, has informed preparation of the Worcestershire Green Infrastructure Strategy. The national framework includes five 'Descriptive Principles' and five 'Benefit Principles', described in Section 1 above, and five 'Process Principles' described in Section 5 below. Together these principles outline what good GI looks like, why GI is so important, and how good GI should be planned and delivered.

Environmental Character in Worcestershire

3.2   The information in this section is derived from the evidence base set out in the Worcestershire Green Infrastructure Strategy Framework Documents, available on Worcestershire County Council's **Planning for Green Infrastructure** webpages.

3.3   The character of the environment in Worcestershire varies across the county. Lowland agricultural areas in the Vale of Evesham, for example, have a different character to the North Worcestershire Hills or the wooded landscapes of the Wyre Forest. The Worcestershire Green Infrastructure Partnership has considered the way in which landscape character, biodiversity including blue infrastructure, and historic environment contribute towards character across the county and has identified 30 distinctive Green Infrastructure Environmental Character Areas (ECA).

3.4   The quality of these areas has been assessed against each of the considerations (landscape character, biodiversity including blue infrastructure and historic environment) to arrive at a score for each ECA. Each ECA has been placed into one of three categories according to its score. See **GI Framework Document 2** for further explanation of this process. The categories are:

1.   Protect and enhance (greatest existing green infrastructure value)
2.   Protect and restore (medium existing green infrastructure value)
3.   Restore and create (lowest existing green infrastructure value)

3.5   These categories have been mapped to provide an indication of the quality of existing strategic GI in the county. The map can be seen in Figure 3.

3.6   The majority of the county is of high GI quality. This is particularly the case in the north and west, which are characterised by the Malvern Hills and Commons and the Teme Valley. Significant areas of high-quality GI also exist to the east in the Forest of Feckenham and on Bredon Hill.

3.7   There is a significant corridor of green infrastructure categorised as 'protect and restore' linking the principal residential areas of Redditch, Bromsgrove, Droitwich and Worcester and following the Severn Valley in the south of the county. The contribution of our blue infrastructure assets to strategic GI provision are visible, particularly the River Severn and River Teme corridors, and the Droitwich Canal and the Worcester and Birmingham Canal corridors. A further area of medium-quality green infrastructure also exists in and around the Vale of Evesham in the southeast of the county.

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21   **https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Home.aspx**

3.8 There are only four small areas in the 'restore and create' category. These are areas which have low scores for at least two of the three categories they were assessed against. They represent opportunities to restore degraded characteristics and to create new green infrastructure opportunities where none exist currently. However, it should be noted that in some cases areas have a low score only because the level of information is limited, and this may not necessarily reflect a low quality of GI.

3.9 The ECAs defined exclude all of the large urban settlements in the county, as data was not available for these areas in all or some of the categories. On the map they are shown as "Urban - Unsurveyed".
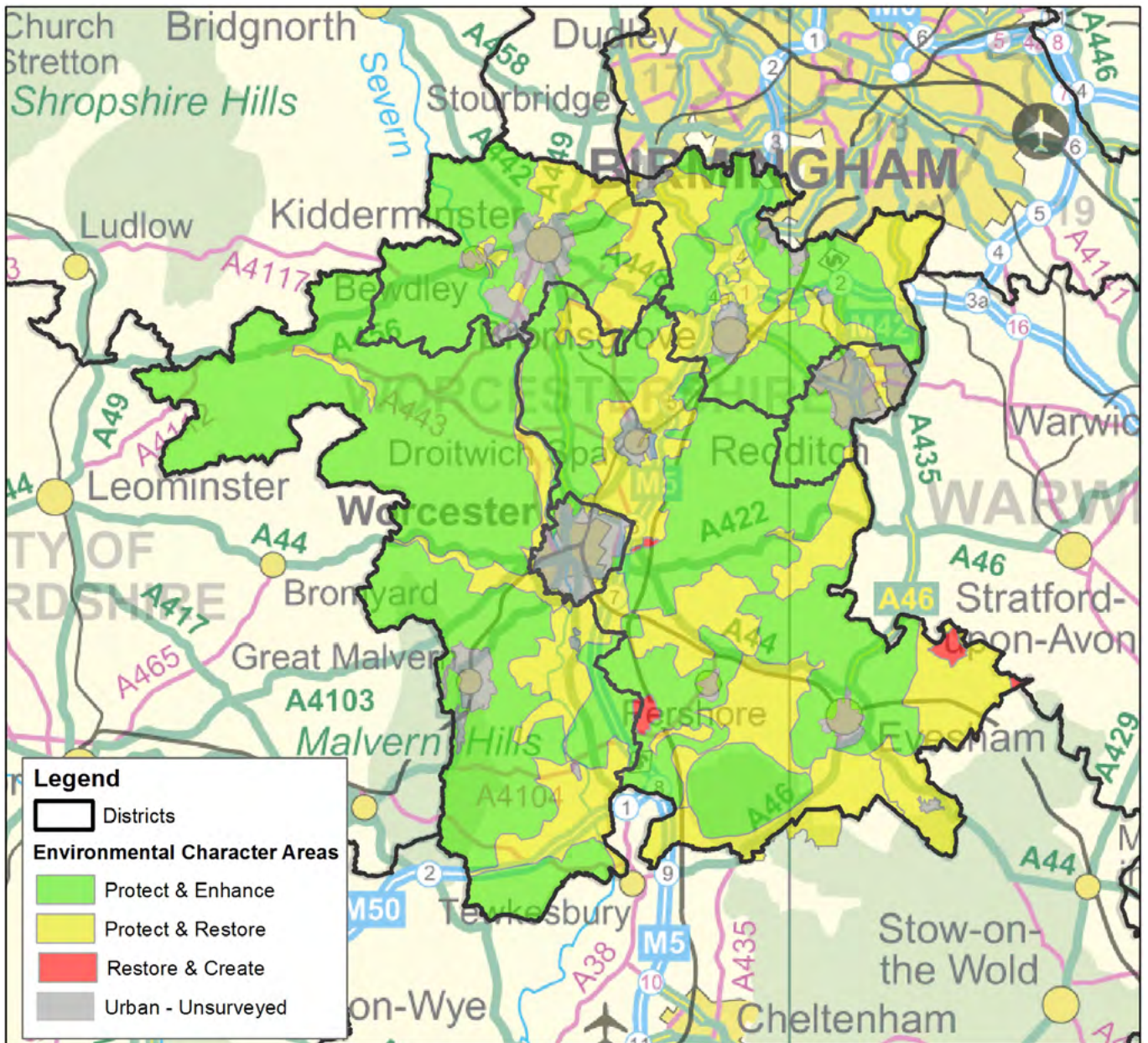
Figure 3. Green Infrastructure Environmental Character Areas

3.10 More detail regarding the landscape character, biodiversity and historic environment of the county is set out in the **GI Framework 2** evidence base document.

Socio-economic Analysis

3.11 The analysis of the socio-economic situation in Worcestershire in this strategy considers the economy and health & well-being at a high level, focusing on the indicators which are of most relevance to green infrastructure:

- **Economy:** employment deprivation measures the proportion of the working age population in an area involuntarily excluded from the labour market.

- **Health and well-being:** health deprivation measures the risk of premature death and the impairment of quality of life through poor physical or mental health.

- **Access to sites for informal recreation:** considers links between informal recreation opportunities and mental and physical well-being.

3.12 This analysis has identified the linkages between socio-economic factors and green infrastructure. Its findings, however, need to be treated with caution; elements such as the quality of the natural environment, distinctiveness of places or accessibility of natural open spaces can potentially help to attract investment and improve the health of residents, but the natural environment is only one of many factors which influence people's lifestyle decisions and behaviour.

3.13 The socio-economic performance of Worcestershire is generally good. Notwithstanding this, some particularly highly- and poorly performing areas can be identified, as illustrated in Figure 4. It is important to note that most of the areas indicated as 'poor' in Figure 4 still perform relatively well on a national scale. The comparisons are therefore only relevant when used to identify patterns at a county-scale.

3.14 Generally, areas of poorer health are found where there are lower employment levels. Most areas that are more deprived in relation to employment and health are in urban areas of the county with rural areas much more likely to be less deprived in relation to employment and health.
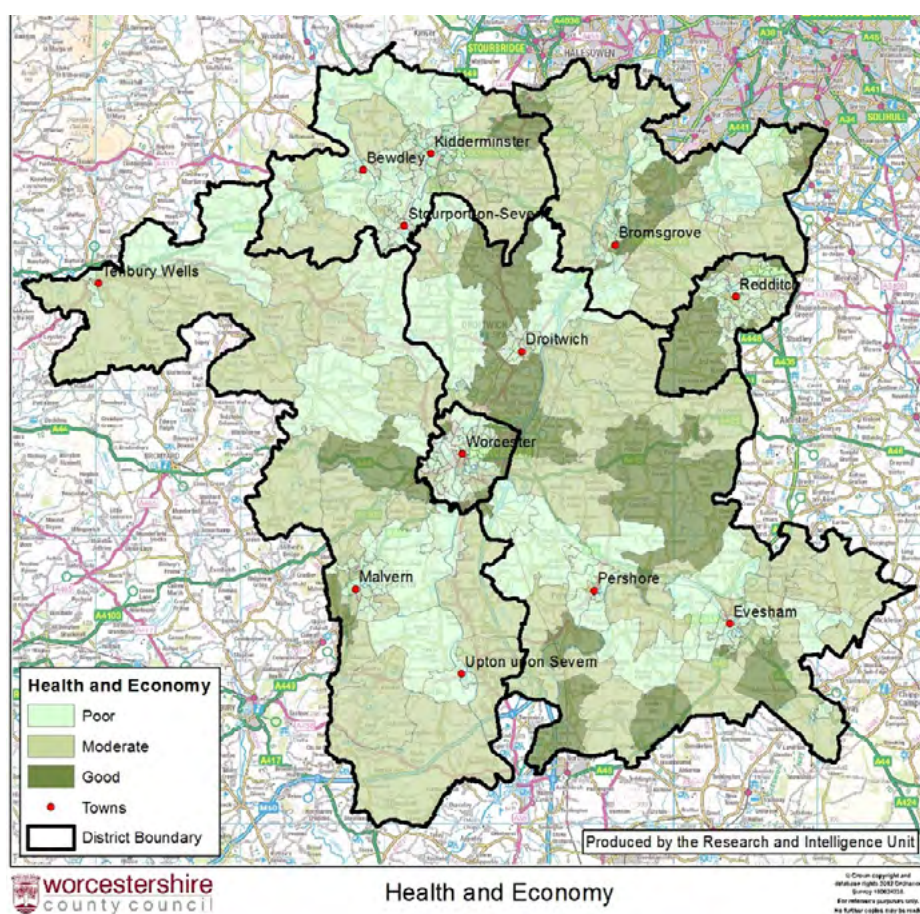
Figure 4. Socio-economic profile of Worcestershire (map produced April 2022) - Analysis of Green Infrastructure indicators

3.15 The analysis also considered the provision of strategic recreation assets in the county, the current level of demand for facilities and anticipated future demand based on predicted population growth in the county and in neighbouring counties.

3.16 The majority of the existing facilities are currently experiencing a high level of demand and are unlikely to be able to absorb an increase in visitor numbers without having a detrimental impact on the habitats, visitor experience or the quality of the site. To overcome this, one or more new country parks or similar facilities will be required in the county, to accommodate the informal recreational needs arising from predicted population growth.

3.17 We have identified a series of broad areas of search for a new facility which will need further investigation to determine the most suitable location for a new facility.

3.18 More detail of the health and economic indicators and capacity of recreation assets is set out in **GI Framework Documents 4 and 3** respectively.

Climate Change

3.19 Worcestershire's CO_2 emissions and Air Quality Management Areas are concentrated along the main transport routes, as well as in and around the main urban centres. Since 2005 overall carbon emissions per person have decreased by 31.7%[22].

3.20 The predicted long-term climatic trends in the UK are for warmer, wetter weather and it is expected that Worcestershire will experience significant changes in weather conditions in the future. UK summer temperatures in 2022 were 0.9°C above the 1991-2020 seasonal average and the annual mean temperature in 2021 was 0.1°C above the average for the same period, and 1°C above the average for 1961-1990[23]. The decade from 2011 to 2020 was on average 9% wetter than the period 1961-1990[24]. Climate change is likely to have a detrimental impact on Worcestershire's habitats, species and residents. Worcestershire has suffered from extreme weather events including flooding, drought, heatwaves and storms and the risk of these events is likely to increase.

Blue Infrastructure

3.21 Worcestershire is affected by fluvial flooding (from main rivers and watercourses), rising groundwater, and pluvial flooding (from surface run-off). Whilst pluvial flooding can occur anywhere in the county, the areas particularly prone to fluvial flooding are located in proximity to main rivers and watercourses and include the following:

- River Teme and main tributaries such as the Kyre Brook (e.g. Tenbury Wells)
- River Severn (e.g. Worcester, Bewdley, Upton-on-Severn, Kempsey)
- River Avon (e.g. Evesham).

22   Corporate Environmental Report 2021, Worcestershire County Council. **https://www.worcestershire.gov.uk/sites/default/files/2023-02/WCC%20Corporate%20Environmental%20Report%202021.pdf**

23   **https://www.ons.gov.uk/economy/environmentalaccounts/articles/climatechangeinsightsuk/august2022#current-state-of-the-climate-in-the-uk**

24   **https://climate-change.data.gov.uk/climate-weather**

3.22 Groundwater availability from aquifers is significantly restricted in parts of Worcestershire, largely as a result of existing high levels of abstraction. For example, no new abstraction licenses are currently available for aquifers at Kidderminster, Stourport and Bromsgrove as existing levels of licensed abstraction exceed the predicted long-term rate of recharge.[25]

3.23 In addition, Worcestershire suffers from significant water quality issues with contamination from chemicals and sediments impacting most of our rivers and streams. The main sources of pollution are the run-off of pesticides and fertilisers from agricultural land, wastewater discharges and sewer overflows, and domestic and transport-origin pollutants such as fats, oils and tyre particulates.

3.24 The Water Framework Directive (WFD) sets an overall target that all surface waterbodies and groundwater bodies should achieve good ecological status by 2027, whilst aiming to achieve 'good' by 2021. Exceptions to this deadline are where it is impossible for individual elements to achieve 'good' status due to technical infeasibility, disproportionate costs or natural conditions preventing timely improvement. Detailed objectives relating to a particular water body can be viewed on the Catchment Data Explorer[26]. Currently, most of Worcestershire's watercourses have a 'moderate' or 'poor' ecological status classification and most are at risk of not meeting the 'good' status target[27].

3.25 The impacts relating to reduced or altered water supply, poor water quality and flooding are likely to become more prevalent as a result of extreme weather events linked to climate change.

3.26 There are multiple interactions between blue and green infrastructure which are explored more fully in the **GI Framework Document 4** evidence base.

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25   Worcestershire Middle Severn Abstraction Licensing Strategy (2022). Environment Agency **Worcestershire-Middle-Severn-abstraction-licensing-strategy.pdf (publishing.service.gov.uk)**

26   **https://environment.data.gov.uk/catchment-planning/**

27   **https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3075** Draft River Basin Management Plan: maps (accessed 24/03/2022)

4. Spatial Priorities for Green Infrastructure in Worcestershire

4.1 This section outlines the spatial priorities for GI in Worcestershire. The quality of the natural and historic environment and the socio-economic status has been considered to identify high-level priorities to inform the Partnership's approach to green infrastructure in different areas of the county. This is intended to be a high-level approach that balances environmental and socio-economic considerations.

4.2 The following broad categories have been identified. More information on the methodology can be found in **GI Framework Document 2**.

Classification	Environmental quality	Socio-economic status	Overall approach
Premium	High	High	Protect and enhance environmental quality / maintain socio-economic status
Good a)	High	Medium	Protect and enhance environmental quality / support socio-economic enhancements
Good b)	Medium	High	Restore environmental quality / maintain socio-economic status
Average a)	High	Low	Protect and enhance environmental quality / invest in socio-economic enhancements
Average b)	Medium	Medium	Restore environmental quality / support socio economic enhancements
Average c)	Medium	Low	Restore environmental quality / invest in socio-economic enhancements
Other a)	Low	Any	Low environmental quality – Further investigation required
Other b)	?	?	Urban unsurveyed – Further investigation required.

Table 2: Broad categories and overall approach to GI

4.3 Figure 5 sets out these categories across the county and identifies opportunity areas for informal recreation sites.

4.4 The spatial priorities presented in Figure 5 are intended to guide the work of the Partnership. When considering specific proposals, the spatial priorities should be considered in conjunction with the strategic priorities for each ECA, as identified in Appendix D and the more detailed assessment of green infrastructure priorities in **GI Framework Document 2**. It is also important to remember that although the priorities provide a starting point, individual site considerations will be key in choosing an appropriate approach. More details about how to do this are set out in Section 5 below.

Worcestershire Green Infrastructure Strategy
Overall spatial approach

1. Teme Valley & Wyre Forest
2. Severn Valley North
3. North Worcestershire Hills
4. Forest of Feckenham & Feckenham Wetlands
5. Lenches Ridge
6. Bredon
7. Severn Valley South
8. Bushley
9. Malvern Chase & Commons
10. Hagley Hinterland
11. Hollywood & Wythall
12. Bromsgrove - Redditch Corridor
13. Mid - Worcestershire Corridor
14. East Wychavon
15. Bow Brook South
16. Evesham Valley
17. Broadway & Cotswold Corridor
18. Carrant Brook Corridor
19. Longdon Hinterland
20. Kempsey Plain
21. River Teme Corridor
22. Severn Meadows Corridor
23. Eardiston
24. Bewdley Fringe
25. Birchen Coppice
26. Birlingham
27. Crowle
28. Defford
29. Bickmarsh
30. Long Marston

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Ordnance Survey 100024230.

PREMIUM
Protect and enhance environmental quality / maintain socio-economic status

GOOD
Protect and enhance environmental quality / support socio-economic enhancements

Restore environmental quality / maintain socio-economic status

AVERAGE
Protect and enhance environmental quality / invest in socio-economic enhancements

Restore environmental quality / support socio-economic enhancements

Restore environmental quality / invest in socio-economic enhancements

Further investigation required / Urban unsurveyed

Further investigation required / Low Environmental Quality
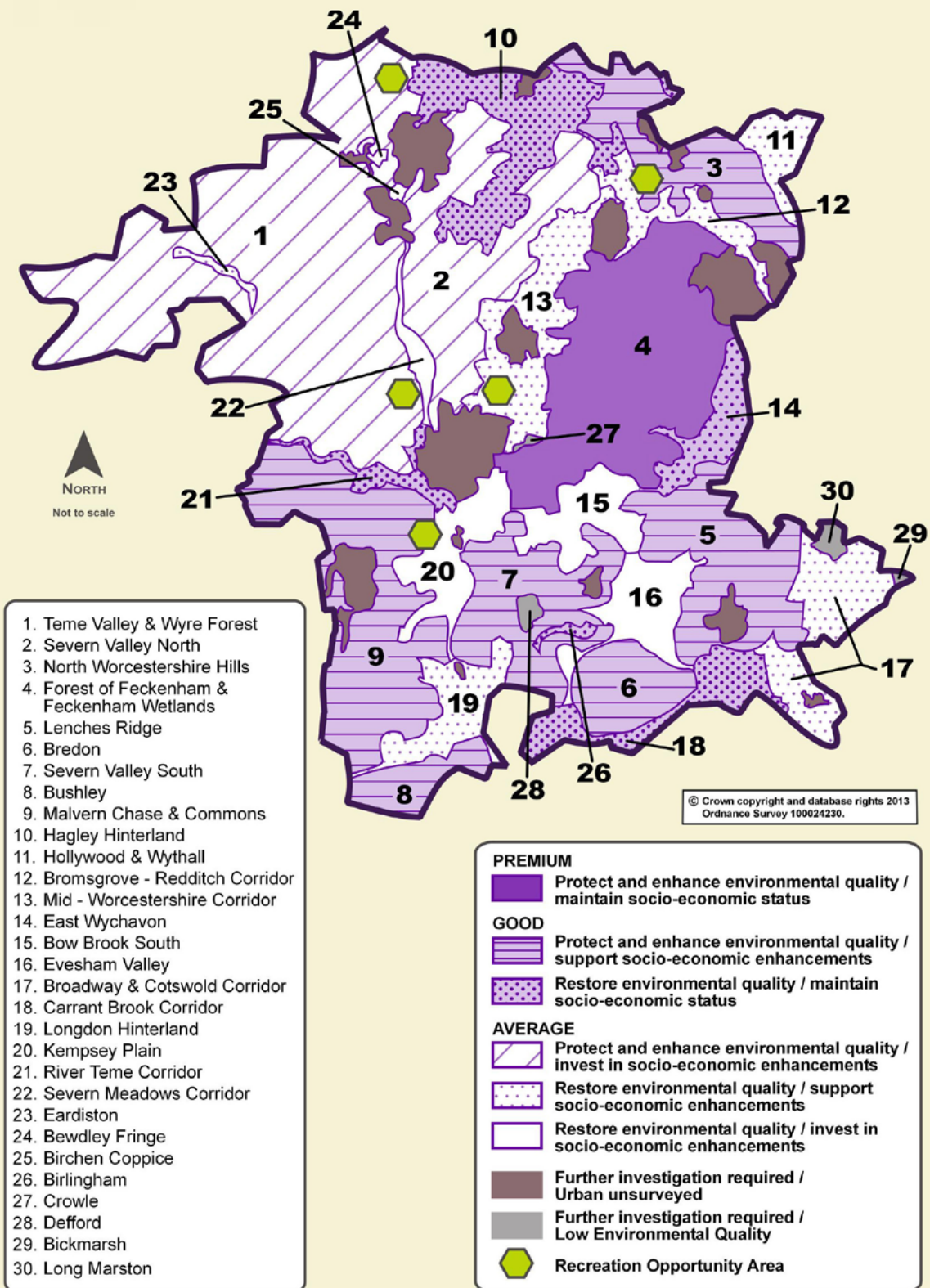
Recreation Opportunity Area

Figure 5. Spatial priorities for green infrastructure in Worcestershire

5. Delivering Good Green Infrastructure

Process of delivering good GI

5.1 The national Green Infrastructure Framework defines a set of five key 'process' principles[28] which describe **'how' to deliver good GI**:

- **Partnership and vision:** Work in partnership and collaborate with stakeholders from the outset to co-plan, develop and deliver a vision for GI in the area. Engage a diverse and inclusive range of people and organisations including citizens, local authorities, developers, communities, land owners, green space managers, environmental, health, climate, transport and business representatives.

- **Evidence:** Use scientific evidence and good land use practices when planning and enhancing green and blue infrastructure. Understand the evidence for the benefits of current GI assets, and data on environmental, social and economic challenges and needs in the area.

- **Plan strategically:** Plan strategically and secure GI as a key asset in local strategy and policy. at all scales. Fully integrate and mainstream GI into environmental, social, health and economic policy. Create and maintain sustainable places for current and future populations, and address inequalities in GI provision.

- **Design:** Understand an area's landscape/townscape, natural, historic and cultural character to create well-designed, beautiful and distinctive places.

- **Managed, valued, monitored and evaluated:** Plan good governance, funding, management, monitoring and evaluation of green infrastructure as a key asset from the outset and secure it for the long-term. Make the business case for GI. Engage communities in stewardship where appropriate. Celebrate success and raise awareness of GI benefits.

Cross-cutting principles

5.2 The delivery of green infrastructure also encompasses the following cross-cutting principles:

Sustainable development

5.3 Many of the key delivery mechanisms identified in this strategy relate to land-uses which are controlled to varying degrees by the planning system. According to the National Planning Policy Framework (NPPF), achieving sustainable development requires the planning system to secure net gains across three interdependent and mutually supportive overarching objectives: economic, social and environmental[29]. Adopted and emerging county and district local plans are also seeking to drive forward the delivery of sustainable development.

5.4 GI has a clear role to play in this regard and closely reflects the principles of sustainable development identified in the NPPF. The delivery of environmental net gains through the provision of GI should therefore be an important consideration when assessing the extent to which proposals for housing, employment, mineral working and infrastructure projects constitute sustainable development.

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28 Department for Levelling Up, Housing and Communities (2023). National Planning Policy Framework. **https://www.gov.uk/government/publications/national-planning-policy-framework--2**

29 Ministry of Housing, Communities and Local Government (2021) National Planning Policy Framework

Multi-functionality

5.5 Multi-functionality underpins the GI approach. It seeks to ensure that areas of land can deliver multiple functions through good design, management and layout. For example, a new route for walking and cycling can be aligned to a wildlife corridor connecting fragmented habitats. Sustainable Drainage Systems (SuDS) can contribute to biodiversity and landscape enhancement and offer opportunities for informal recreation[30]. The key priorities for each of the environmental aspects of green infrastructure are set out below. In combination these interventions can also deliver multiple socio-economic benefits.

Biodiversity:

Enhance existing areas of biodiversity interest. Use native, non-invasive species in planting schemes. Restore functional habitat networks. Secure long-term biodiversity net gain.

Climate Change:

Contribute to climate change adaptation and resilience through urban cooling, water storage, water filtering, flood management and carbon capture and sequestration.

Landscape:

Reflect the distinctive character of Worcestershire's landscape. Promote and enhance key features of local landscape character. Strengthen key views into and out of areas.

Green Infrastructure: a multifunctional natural environment

Access and Recreation:

Enhance opportunities for outdoor sport and recreation. Provide shared use routes which meet the needs of pedestrians, cyclists, horse riders, disabled and other vulnerable users. Connect areas of community use and interest. Provide informal open space.

Historic Environment:

Conserve below-ground archaeology, historic designed landscapes and remnant archaeology through design and use of open space. Utilise historic access routes and protect & promote historic assets and their settings.

Blue Infrastructure:

Secure and enhance the quality of the water environment. Use SuDS to contribute to on-site biodiversity enhancements and water storage. Use Natural Flood Management to mitigate and alleviate flood events.
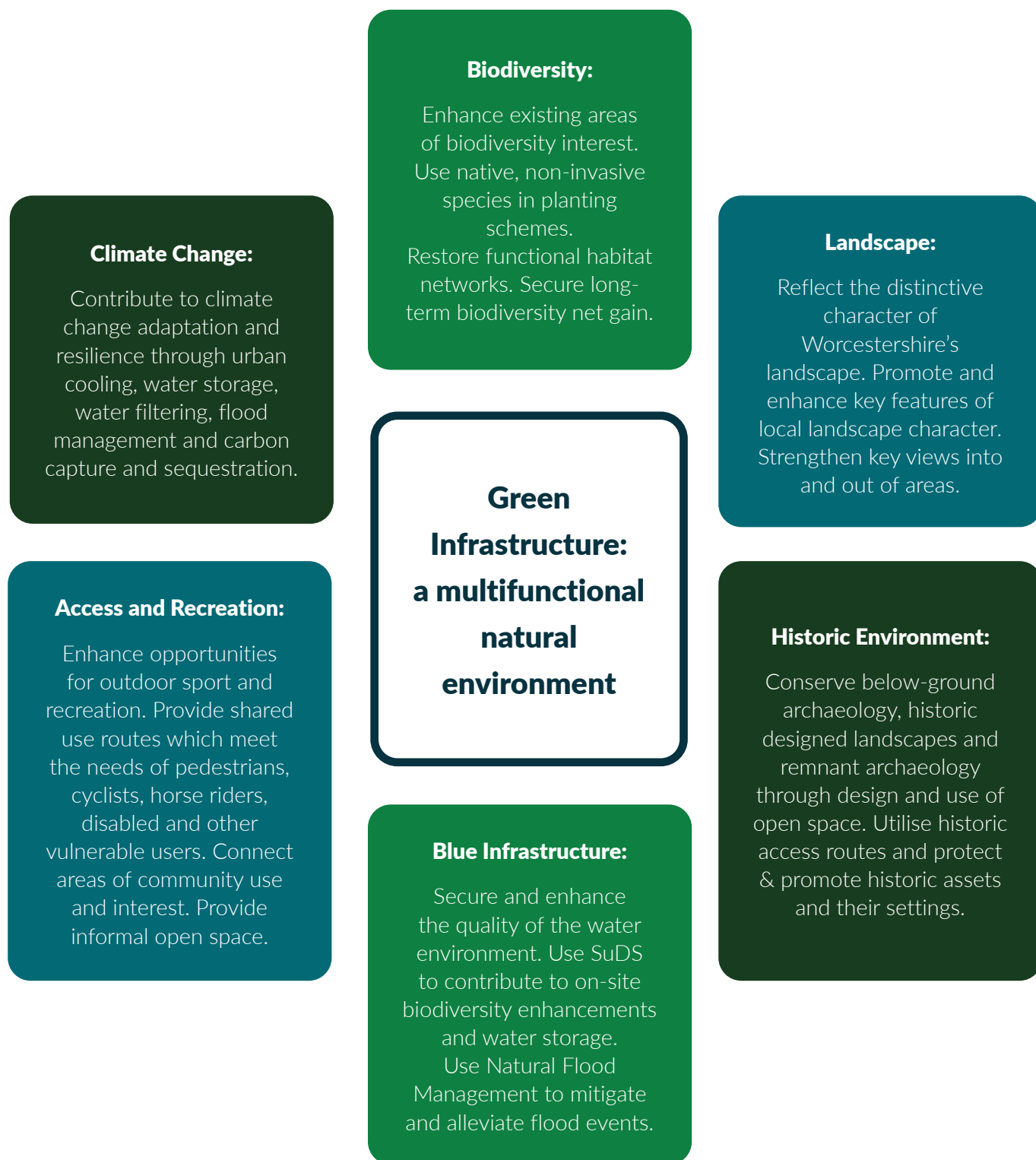
Figure 6. Elements of multi-functional green infrastructure

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30   Sustainable Drainage Design & Evaluation Guide (2018). McCloy Consulting & Robert Bray Associates.

Key delivery opportunities

5.6 The main opportunities to deliver green infrastructure in the county will be from integrating green infrastructure priorities and principles into other plans, proposals and decision-making processes. These include:

    A. **New development** such as housing and employment, including brownfield or re-development
    B. **Land management** initiatives such as agri-environment schemes and carbon sequestration projects
    C. **Minerals extraction and restoration**
    D. **Infrastructure developments** such as transport, renewable energy and water-related projects
    E. **Retrofitting** green infrastructure into existing development

5.7 This is not an exhaustive list. Other opportunities will arise during the lifetime of the strategy. However, this strategy focuses on these five key opportunities and sets out:

- The rationale for delivering green infrastructure through each of these opportunities
- The principles that should be applied and the priorities to take into account
- The mechanisms that exist to assist with delivery.

A: Delivering Green Infrastructure through new development

Why deliver Green Infrastructure through new development?

5.8 Integrating green infrastructure into new development delivers a range of benefits for the developer, future residents and occupants of the site and the wider community. Good quality green infrastructure will contribute to the value and desirability of a development. It can provide spaces for relaxation and opportunities for healthier lifestyles, contribute to community cohesion, and make the settlement comfortable and liveable through cooling and shading which offset the impacts of climate change. Green infrastructure can also contribute to water storage and management to ameliorate the impact of flooding, and incorporate renewable energy use and passive solar gain through building orientation and design. Even modest developments can contribute towards and benefit from the provision of green infrastructure at a local scale. However, the opportunities arising from larger sites, such as linking biodiversity corridors or provision of a country park, can contribute to strategic green infrastructure which brings wider benefits to the county and beyond. Figure 7 illustrates some of these benefits.

5.9 The planning of new green infrastructure as part of development should always take an evidence-based approach. This includes identifying and understanding the range of benefits provided by all existing GI assets in the area and the type and level of use those assets experience (e.g. the footfall they attract). It is important to ensure that existing green and blue spaces are not negatively affected by the increase in demand for GI that new development will generate. The evidence base for GI should be informed by community consultation. GI need and demand in a locality may also be identified in, for example, adopted Neighbourhood Plans.

5.10 The design of new GI assets should seek to connect to, complement and reduce any pressures on existing green and blue spaces associated with the type or level of use they currently experience. New development should seek to preserve and enhance connections between new, on-site GI and existing, off-site GI through, for example, restoring or enhancing the local Public Rights of Way network.

5.11 Green infrastructure should also be an intrinsic part of the design of redevelopment schemes delivered on brownfield sites, as this provides an opportunity to bring benefits to both new residents and occupants plus the existing adjacent communities through the provision of new multi-functional greenspace and new multi-user paths.

BENEFITS OF INTEGRATING GI INTO NEW DEVELOPMENT

Delivery of Biodiversity Net Gain

Investing in quality Green Infrastructure including the creation or enhancement of natural habitats to deliver biodiversity outcomes can contribute to the on-site delivery of mandatory Biodiversity Net Gain as required by the Environment Act 2021.

Higher Returns on Properties

The value of cultural services provided by publicly accessible green and blue spaces capitalised into property prices was calculated as £2,813.80 in 2016, or 1.19% of the average UK property price. In Worcestershire these figures were £3,085.30 and 1.53% respectively.

Office for National Statistics **www.ons.gov.uk/economy/environmentalaccounts/articles/ valuinggreenspacesinurbanareas/ahedonicpriceapproachusingmachinelearningtechniques**

Health and Well-being

There is now a sizable body of research demonstrating that access to nature and green spaces near to where people live and work has significant benefits for physical and mental health and well-being.

A rapid scoping review of health and wellbeing evidence for the Framework of Green Infrastructure Standards (2020). Natural England. **http://publications.naturalengland.org.uk/publication/4799558023643136**

Climate Resilience

Well-designed green infrastructure can contribute to making new development more resilient to the impacts of climate change. This could include natural open spaces with the ability to absorb water and provide flood storage or the positioning of vegetation, particularly trees and woodland, to offer shading and cooling.

UK Green Building Council **https://www.ukgbc.org/ukgbc-work/the-value-of-urban-nature-based-solutions**

Town and Country Planning Association **https://tcpa.org.uk/wp-content/uploads/2021/11/gcg_cc-adaptation_final.pdf**

Increase occupancy rates and rents

Case Study: Investment in green infrastructure which included planting of over 1800 new trees created a setting for stimulating business growth at the Riverside Park Industrial Estate in Middlesborough. It resulted in: 38% occupancy growth, £1m of investment, 28 new businesses starting up and 60 new jobs being created.

https://www.gensler.com/uploads/document/220/file/Open_Space_03_08_2011.pdf

Figure 7. Reasons to integrate green infrastructure into new development

Business parks and industrial development

5.12 Quality green infrastructure, including areas of natural habitats, pedestrian routes and cycle routes, can contribute to the attractiveness of business park and industrial development, encouraging inward investment. Sustainable transport routes also make these developments more desirable, as they improve accessibility. Sustainable drainage, rainwater collection and use of on-site wastewater cleaning can reduce maintenance costs and reduce flood risk on site, meaning that business operations are more resilient to the increasing risk of extreme weather events.

5.13 In many cases green infrastructure can be used as a more cost-effective alternative to traditional 'grey' infrastructure. Sustainable drainage, for example, can be used as an alternative to traditional methods of disposing of storm water. Biomass energy generation[31] could also be used as an alternative to traditional centralised energy supplies. Additional sustainable design features, such as green roofs, can also be incorporated into developments.

5.14 The long-term management and sustainability of GI should be considered when incorporating these features into a development. Where the long-term management of the business park or industrial development would typically be undertaken by a management company, it would normally be possible to integrate GI maintenance with standard arrangements.

Local case study: Kanes Foods, a leading UK supplier of fresh chilled vegetables based in the Vale of Evesham, constructed a new sustainable salad factory in 2012 covered with what was at the time Europe's largest green roof. The curved roof supports a range of grasses and wildflower species. The roof maximises the thermal efficiency of the building whilst providing a habitat for wildlife which blends almost seamlessly into the contours of the surrounding Cotswold Hills.

31 Biomass energy generation in relation to GI means utilising the green waste produced as a result of maintenance of green infrastructure to generate energy and heat. Large sites may be able to accommodate sustainably managed woodland for biomass.

Residential development

5.15 GI provision in residential developments can be varied and can include informal greenspace, footpaths, bridleways, cycleways, SuDS, natural habitats, areas for outdoor sport and street trees. Passive building design features, such as green roofs and living walls, can contribute to GI provision. GI can also include gardens: these are the responsibility of individual owners but can contribute to ecological networks if managed appropriately.

5.16 Well-planned multi-user paths, which are also suited to the needs of disabled and other vulnerable users, contribute to the attractiveness of residential development and contribute to healthier lifestyles, particularly where routes are well linked to wider walking, riding or cycling networks. They provide alternatives to using motorised transport and support a reduction in localised car journeys, contributing to a lower community carbon footprint. These routes should link to community assets and local centres, for example by seeking to provide safe walking and cycling routes between home and school. If off-road, these networks can link corridors of biodiversity importance and form a part of facilities such as SuDS corridors. Access to local green spaces is particularly important to those with young families, for whom safe places to play and get close to nature are especially valued[32]. There is potential to incorporate natural habitats into the provision of both sustainable transport routes and informal recreation spaces.

5.17 The quantum of green infrastructure within any new development needs to be sufficient to meet the needs of the new community, deliver multi-functionality, fulfil the sustainable development objectives of the NPPF, and support delivery of any biodiversity net gain obligation. In Worcestershire, the Wyre Forest District Local Plan, adopted April 2022, requires 40% GI, excluding private gardens, for greenfield development sites exceeding 1ha, and 20% on sites between 0.2-1ha. The South Worcestershire Development Plan Review has also consulted on the same quantum requirement.

5.18 Sustainable drainage systems (SuDS) play an important role in the management of surface water run-off in developments. More sustainable than conventional drainage systems, they can mitigate adverse effects of stormwater run-off on the environment whilst providing opportunities for biodiversity enhancement and recreational corridors.

5.19 The Flood and Water Management Act 2010 gave Worcestershire County Council Lead Local Flood Authority (LLFA) status, with responsibility for flood risk management from surface water, groundwater and ordinary watercourses. The Council has produced a Local Flood Risk Management Strategy for Worcestershire[33], which recognises and supports the use of a green infrastructure approach to deliver natural flood risk management. Natural Flood Management (NFM) aims to reduce flood risk by increasing the ability of a catchment to retain water for longer through the placing of natural physical barriers and enhancing attenuation and infiltration. GI features such as surface water attenuation ponds can contribute to reducing flood risk to developed areas.

5.20 Good GI provision within development can also extend to consideration of design elements such as lighting. Artificial lighting can ensure that natural spaces are safer and more user friendly for people but can have significant negative impacts on wildlife, for example interrupting the flight lines and foraging activity of bats. Careful consideration of the interface between artificial lighting and GI features following best practice guidance, such as that published by the Bat Conservation Trust[34], can help to ensure that impacts on wildlife are minimised. This approach can also contribute to reducing the energy use associated with artificial lighting within a development.

32   Ipsos Mori survey **https://www.groundwork.org.uk**

33   **https://www.worcestershire.gov.uk/flooding/plans-policies-and-strategies**

34   Guidance Note 08/18 Bats and artificial lighting in the UK. Bat Conservation Trust. **https://cdn.bats.org.uk/uploads/pdf/Resources/ ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?v=1542109349**

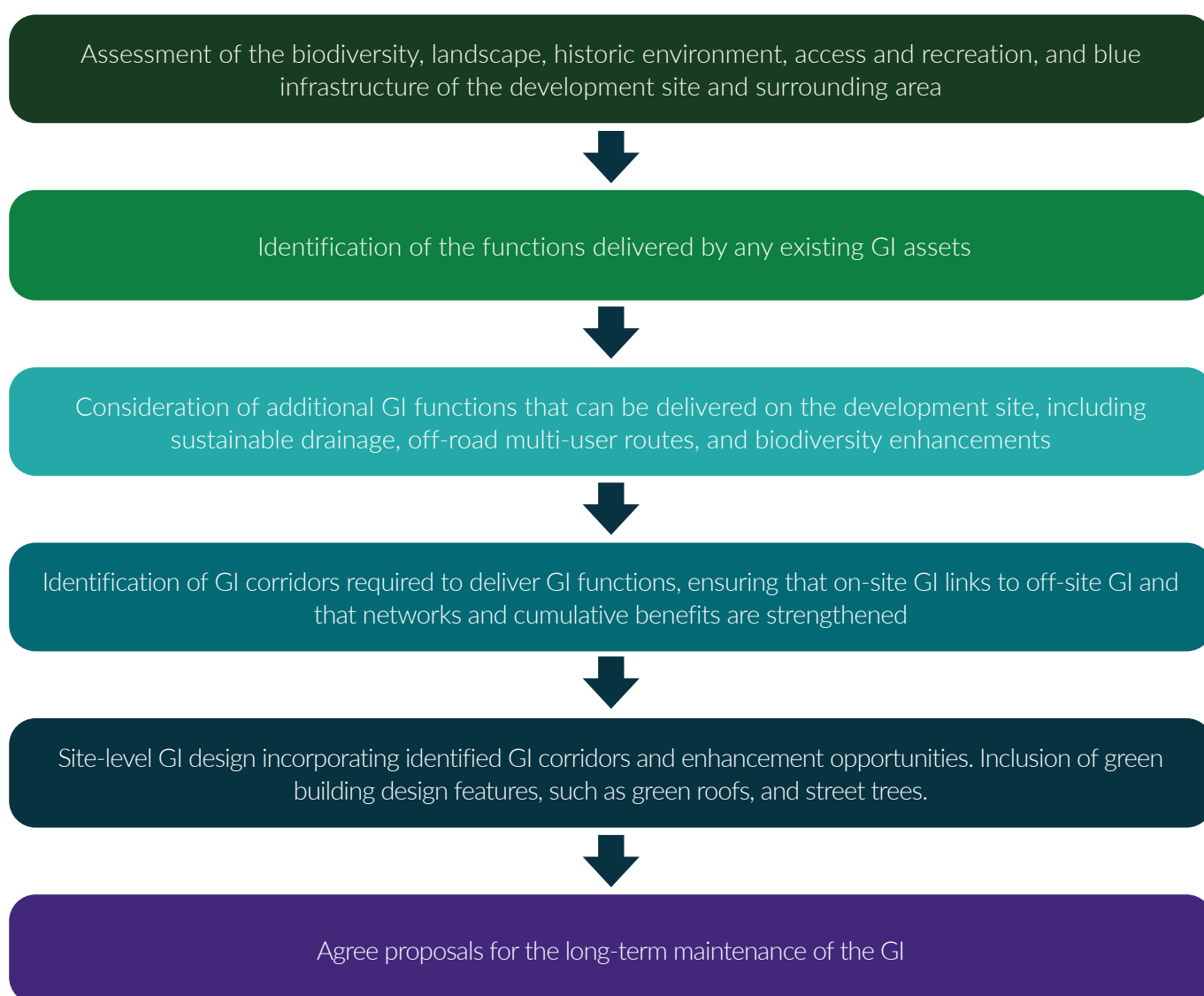Local case study: At Bewdley School architects Robert Bray Associates designed an innovative SuDS scheme to manage roof and surface water runoff that included permeable paving, vegetated swales, a rain garden and a wetland. The features are connected to feed a waterwheel, a tipping bucket and a Torricelli tube, enabling the SuDS to be used for educational purposes. **Bewdley School: Robert Bray Associates**

What principles should be followed?

5.21 Figure 5 gives an indication of the high-level approach that should be taken to green infrastructure in each Environmental Character Area. A profile for each area is given in **Appendix C**, with detail about the priorities outlined in **Appendix D**. Additional guidance can be found in the Green Infrastructure Framework Documents 2, 3 and 4 which provide the evidence base for this Green Infrastructure Strategy.

5.22 The key to planning and managing green infrastructure in new development is to consider the site in its context and be guided by the five 'Process' principles of how to deliver good GI set out in paragraph 5.1. This includes considering the features of the site and how they link to the networks of habitats, Public Rights of Way, sustainable transport routes and water courses that surround it. The setting of the proposed development in the local landscape, and how the development can seek to enhance local landscape character and views into or out of existing GI assets should be considered. Figure 8 outlines the steps to follow when considering how to integrate green infrastructure within new development.

Assessment of the biodiversity, landscape, historic environment, access and recreation, and blue infrastructure of the development site and surrounding area

↓

Identification of the functions delivered by any existing GI assets

↓

Consideration of additional GI functions that can be delivered on the development site, including sustainable drainage, off-road multi-user routes, and biodiversity enhancements

↓

Identification of GI corridors required to deliver GI functions, ensuring that on-site GI links to off-site GI and that networks and cumulative benefits are strengthened

↓

Site-level GI design incorporating identified GI corridors and enhancement opportunities. Inclusion of green building design features, such as green roofs, and street trees.

↓

Agree proposals for the long-term maintenance of the GI

Figure 8. Principles to follow when integrating green infrastructure within new development

5.23   The Worcestershire GI Partnership has established the principle of preparing Green Infrastructure Concept Plans for major development sites, working in partnership with local planning authorities and developers. These should contain an assessment of the GI assets and identify a set of GI principles and priorities for the site.

5.24   The Building with Nature Standards Framework[35] is the UK's first evidence-based benchmark for good industry practice for the delivery of high-quality green infrastructure. The standards are applicable to development of different types and scales. As well as allowing benchmarking of plans and policies and guiding the design and construction phases of the development itself, the standards provide an assessment tool to grant the Building with Nature Award within an accreditation system. Twelve overarching principles are set out that should be applied when seeking to achieve the standards.

Green Infrastructure Concept Plans

The Worcestershire Green Infrastructure Partnership has established the principle of early preparation of GI Concept Plans for major development sites or areas of strategic growth. A GI Concept Plan provides a framework for the master planning of multifunctional green infrastructure, setting out a statement of aims and objectives for green infrastructure that the GI Partnership would expect to inform the development design process.

The GI Concept Plans typically include commentary on: local landscape character, its history, function and physical make-up; the current structure and broad character of the proposed growth area/development site and surrounding settlements, including the form of the historic environment and how settlements interact with the surrounding countryside; local access and recreation provision including walking and cycling networks; a view about the type, scale and provision of green infrastructure within early development proposals and, where relevant, beyond the site boundaries; the physical capacity of the site, and the implications for the built form and development density on the provision of green infrastructure i.e., SuDS, sustainable transport provision and access to open space to support the new and existing communities.

Legend

▨	Main green infrastructure corridors	▨	Important features off-site
▨	Secondary green infrastructure linkages	➤	Linkages with wider setting
▨	Area of potential historic environment interest	➤	Views in and out

Example of a GI Concept Plan map

For a development proposed for north-east Worcestershire, a GI Concept Plan identified the site's existing GI assets. The multifunctional value of each asset was prioritised and the key opportunities to protect, enhance and link assets through the development scheme were set out. The developers' approved landscape masterplan allocated 37.4% of the site (47.62ha) for green infrastructure, providing a network of green spaces incorporating existing GI features such as hedgerows and field patterns, copses, woodland and a stream.

35   **https://www.buildingwithnature.org.uk**

What mechanisms exist to assist in delivery now and in the future?

5.25 Clear local planning policies are fundamental to achieving GI provision of sufficient quality and quantity within new development. Good GI policies should also seek the inclusion of green building design features, such as those that will assist with temperature regulation and mitigation of predicted climate change impacts. Local policy should also reflect the principles of sustainable development identified in national planning policy. Appropriately trained development management officers at local authorities and well-informed developers and consultants will also be key to success.

5.26 There are approximately 50 strategic development sites in Worcestershire, mapped in Figure 9 below. Integrating GI into the development of these sites offers significant opportunities for GI delivery in the county. Smaller sites also offer the opportunity to include green infrastructure, potentially integrated with other on-site features such as the requirements for formal play areas, SuDS, and features such as street trees.

STRATEGIC DEVELOPMENT SITES

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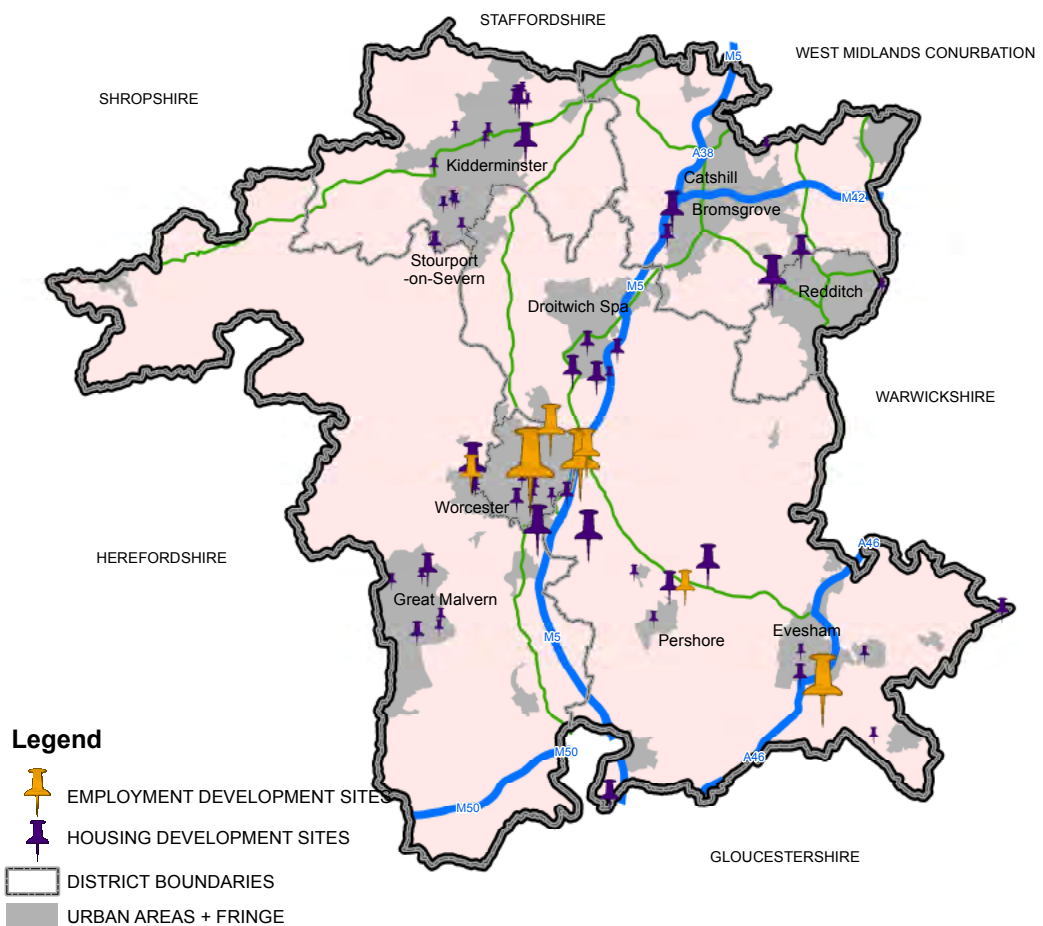
Figure 9: Map of strategic development sites in Worcestershire

5.27   The long-term management, maintenance and monitoring of GI is important to ensure that assets maintain their role and function, particularly where they replace traditional grey infrastructure. Without appropriate management, functions can become lost or impaired over time. For development sites, GI management plans and funding should form a part of proposals for the site development and these arrangements should be secured alongside planning permission. Options for the local community to engage with long-term management of new GI assets should be considered at an early stage.

5.28   New legal provisions within the Environment Act 2021 provide an opportunity for the delivery of habitat creation or enhancement as part of mandatory Biodiversity Net Gain (BNG) to contribute to the provision of green infrastructure on development sites and to secure funding for the long-term management of features.

5.29   Design Codes/Design Guides present an opportunity for ensuring that GI features are integrated into multiple aspects of the development design. Figure 10 is taken from the National Design Guide[36] and shows the ten characteristics of well-designed places. Many of these are of clear and direct relevance to GI, for example in creating developments that are accessible and easy to move around, where nature is enhanced and optimised and where the design creates resilience. Local Design Guides should reflect this overarching framework whilst setting out clear priorities for enhancing local character and identity through provision of green infrastructure.

Context - enhances the surroundings.

Identity - attractive and distinctive.

Built form - a coherent pattern of development.

Movement - accessible and easy to move around.

Nature - enhanced and optimised.

Public spaces - safe, social and inclusive.

Uses - mixed and integrated.

Homes and buildings - functional, healthy and sustainable.

Resources - efficient and resilient.

Lifespan - made to last.

Figure 10. The ten characteristics of well-designed places. Taken from the National Design Guide.

36   National Design Guide (2021). MHCLG. **https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/962113/National_design_guide.pdf**

B Delivering Green Infrastructure through land management

Why deliver Green Infrastructure through land management?

5.30 Although GI is frequently seen as the preserve of urban areas and new development, there is also a need for GI in rural areas. Worcestershire is a largely rural county, with a prevalence of land-based industries. Over 80% of the county is classed as high-quality agricultural land, with agriculture, horticulture and forestry being prominent business sectors. Other places are managed for informal recreation, with approximately 20 such sites at a strategic scale and many more at the district or neighbourhood scale. Many tourist attractions in the county also involve 'paid-for' access to GI. There are 14 Local Nature Reserves, 115 Sites of Special Scientific Interest and 2 Special Areas of Conservation in the county which are managed primarily for biodiversity interest.

5.31 Although the primary purpose for rural land management may be focused on just one of the components of GI, many of these assets are in fact multi-functional and there is significant scope to integrate multifunctional GI in a way which is complementary and beneficial to the primary land-use.

5.32 Changes to land management practices offer opportunities to include a number of green infrastructure principles, including[37]:

- Reduction in water abstraction from water courses for agricultural use through the development of water storage reservoirs. Well-designed reservoirs can also enhance biodiversity, and contribute to landscape and the historic environment;

- Enhancements to water quality by reducing agricultural run-off and/or reducing the use of agricultural chemicals such as fertilisers;

- Management of flood risk using natural flood management principles to increase flood resilience throughout catchments;

- Provision of informal recreational opportunities, including creation of shared use routes meeting the needs of pedestrians, cyclists, horse riders, disabled users and other vulnerable users;

- Biodiversity enhancements through management or creation of woodland as assets for renewable energy;

- Enabling appropriate access to blue infrastructure assets for recreation, for example river and stream corridors and canal corridors;

- Optimising land management to maximise soil carbon capture, sequestration and storage or, where appropriate, changing habitat type to one with higher carbon capture and sequestration potential;

- Management or creation of new woodland for recreation, health, water benefits, timber and biodiversity;

- Enhancement and preservation of areas of historic interest and importance such as historic landscape patterns of hedges or the settings of historic buildings;

- Biodiversity enhancements, such as planting and maintaining hedgerows and managing new woodland areas, can attract funding from sources such as agri-environment schemes;

- Locally-grown food can attract a price premium and become a tourist attraction (such as the British Asparagus Festival or Pershore Plum Festival), which contributes to the local economy.

- Renewable energy generation from biomass can be an incentive in appropriate circumstances for the management of habitats such as woodland, meadow and reedbed[38].

- Supporting nature recovery by the adoption of an Integrated Pest Management approach, reducing or eliminating the use of harmful pesticides.

37   A wider analysis of the benefits and drawbacks to farm business, land management and rural economy is provided in the GI Framework 4 evidence base, which explores the economic and social benefits of GI in Worcestershire.

38   In some cases site management requirements would not be compatible with increased biomass removal for renewable energy generation. We must be careful to ensure that economic opportunity does not outweigh nature conservation value and that sites of high nature conservation value do not become over- 'managed' to the detriment of their biodiversity.

BENEFITS OF INTEGRATING GI INTO LAND MANAGEMENT

Environmental Land Management Schemes

The new Environmental Land Management Schemes will enable farmers and other land managers to enter into agreements and receive payments for delivering benefits including for water quality, habitats, species and soil protection. The scheme began piloting in 2021 and is due to launch in full by 2024.

https://www.gov.uk/government/publications/environmental-land-management-schemes-overview/environmental-land-management-scheme-overview

Payments for Ecosystem Services (PES)

Payments for ecosystem services (PES) is a term used to describe a range of schemes through which the beneficiaries, or users, of ecosystem services provide payment to the stewards, or providers of those services

Case Study: United Utilities, working with farm tenants in conjunction with partners such as the RSPB, Natural England and the Forestry Commission, undertook the Sustainable Catchment Management Programme (SCaMP) across 20,000ha land in the Peak District and Bowland areas, 13,000ha of which is designated as a SSSI. £10.5 million was invested in moorland restoration, woodland planting, farm infrastructure and protecting watercourses. Undertaking the SCaMP improvements allowed farmers to access additional agri-environment revenue income via grants administered by Natural England and the Forestry Commission.

Payments for Ecosystems Services: A Best Practice Guide (2013). Defra. https://www.gov.uk/government/publications/payments-for-ecosystem-services-pes-best-practice-guide

Health and Wellbeing benefits

Many sites providing green infrastructure offer the opportunity for informal recreation, through the inclusion of multi-user paths or provision for activities such as mountain biking or bird watching. Neighbourhood-scale green infrastructure can be important in enabling people to take regular, informal exercise or participate in sport. A two-year Government-funded £5.77 million project ran between 2021-2023 to pilot the embedding of green social prescribing into community-based healthcare to tackle physical and mental ill health.

https://www.england.nhs.uk/personalisedcare/social-prescribing/green-social-prescribing
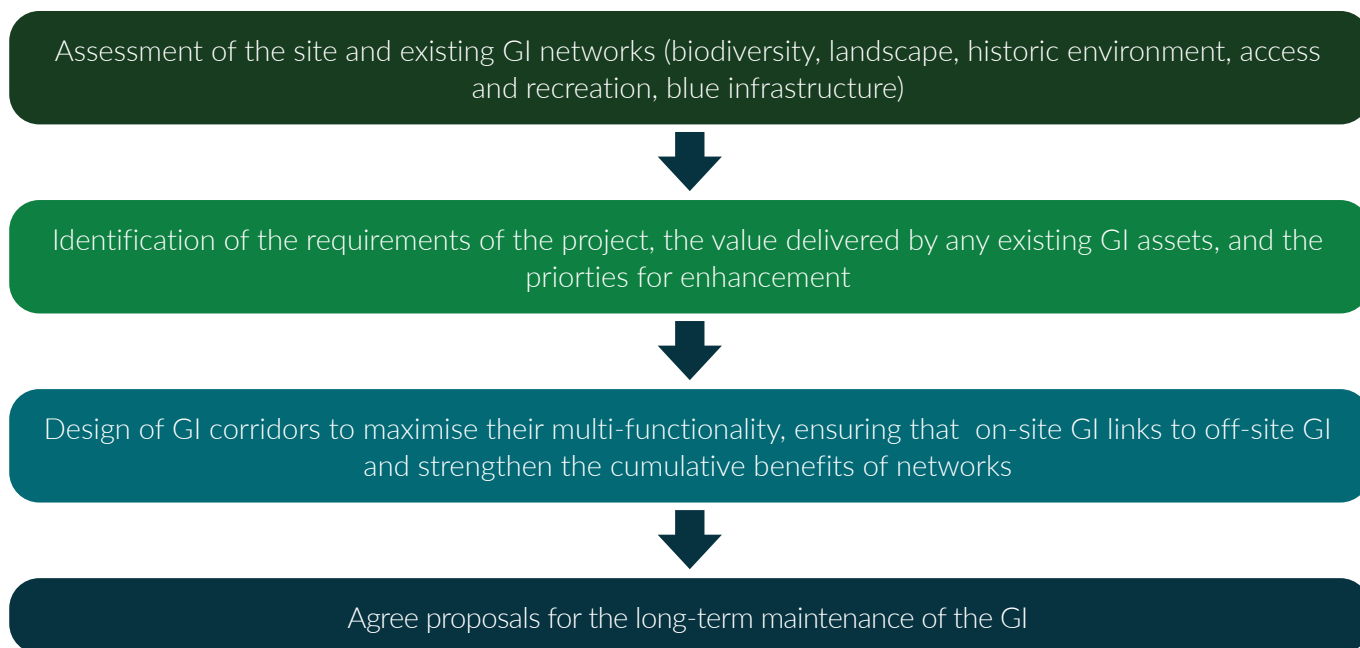
Wider recreational benefits

The Humber Nature Partnership has identified several locations where economic investment will lead to sustainable increases in visitor numbers and associated visitor spend. The wider Humber Estuary contains several nationally and internationally important sites for nature conservation, which attract tourists looking for walking, birdwatching and other wildlife and nature-related activities.

http://humbernature.co.uk/admin/resources/investing-in-natural-capital.pdf

Figure 11. Reasons to integrate delivery of green infrastructure into land management

What principles should be followed?

5.33 Figure 5 gives an indication of the high-level approach that should be taken to green infrastructure in each Environmental Character Area. A profile of each area is given in **Appendix C**, with detail about the priorities outlined in **Appendix D**. Additional guidance can be found in the Green Infrastructure Framework Documents 2, 3 and 4, which provide the evidence base for this Green Infrastructure Strategy.

5.34 The key to planning and managing green infrastructure features within land management is to consider the site in its context and be guided by the five 'Process' principles of how to deliver good GI set out in paragraph 5.1. This includes considering the features of the site and the networks of habitats, Public Rights of Way, sustainable transport routes and water courses that surround it. The setting of the site within the local landscape, and how land management can seek to enhance local landscape character and views into or out of existing GI assets should be considered. Figure 12 outlines the steps to follow when considering how to integrate green infrastructure within land management.

> Assessment of the site and existing GI networks (biodiversity, landscape, historic environment, access and recreation, blue infrastructure)
>
> ⬇
>
> Identification of the requirements of the project, the value delivered by any existing GI assets, and the priorties for enhancement
>
> ⬇
>
> Design of GI corridors to maximise their multi-functionality, ensuring that on-site GI links to off-site GI and strengthen the cumulative benefits of networks
>
> ⬇
>
> Agree proposals for the long-term maintenance of the GI

Figure 12. Principles to follow when integrating green infrastructure into land management

What mechanisms exist to assist in delivery now and in the future?

5.35 The mechanisms for delivery of green infrastructure in relation to land management include:

- Routine land management practices.
- Agri-environmental schemes which provide payments to farmers for environmentally sensitive or environmentally enhancing land management.
- Flood risk mitigation works.
- Participation in a carbon off-set market.
- Priorities for public access outlined in the Rights of Way Improvement Plan for Worcestershire[39].
- Participation in a Biodiversity Net Gain off-set market.
- Eco-Schools scheme supports pupils and supporters (school staff, admin and community members) to improve green infrastructure within their school grounds, promoting biodiversity and creating wildlife habitats, while providing rich learning opportunities.

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39 'The Rights of Way Improvement Plan is part of the Worcestershire Local Transport Plan **https://www.worcestershire.gov.uk/council-services/travel-and-highways/transport-strategy-and-planning/local-transport-plan'**

C Delivering Green Infrastructure through minerals extraction and restoration

Why deliver Green Infrastructure through minerals extraction and restoration?

5.36 Minerals development can potentially have a long-term impact on the character of an area due to the location of sites on greenfield land, the significance of the landscape and habitat change involved, and the carbon footprint of extraction and processing operations. However, sites must be restored to high environmental standards at the earliest opportunity, and the land must be restored to an appropriate after-use. This could involve restoring the land to its previous (usually agricultural) use but there is often significant opportunity to integrate GI into restoration schemes, including habitat creation and enhancement, climate change mitigation, and elements of public access for recreation. Many of the principles of multi-functionality outlined in **Section 3** will apply to restored mineral sites.

5.37 The scale and type of activity that is unique to minerals development may provide opportunity for county-level or sub-regional level green infrastructure assets to be created. The phased nature of many minerals operations also presents potential for the creation of temporary and ephemeral habitats whilst extraction is continuing.

5.38 The mineral industry has a long history of restoring sites in ways which include biodiversity gain. For example, by 2020 Mineral Products Association (MPA) members nationally had created over 83km2 of priority habitat through the restoration of sites[40]. The MPA has worked in partnership with conservation groups such as the RSPB and the Wildlife Trusts on the restoration and subsequent management of restored workings, to create a growing network of nature reserves (the MPA's National Nature Park[41]).

5.39 Minerals sites are also important to the UK's uniquely diverse geological heritage because they afford opportunities to study and enjoy geology that would only otherwise be possible at major outcrops and around our coastline. Since 1949, 500 SSSIs (22% of all geological SSSIs) have been designated nationally as a result of exposure left by quarrying[42].

Local case study: This sand and gravel working at Beckford was restored once extraction ceased in the late 1980s. Part of the site was designated as a geological Site of Special Scientific Interest for the geology that had been exposed during quarrying. Huntsmans Quarries won a national award for the restoration scheme. The area is now managed as a community nature reserve **www.beckfordnature.org.uk**.

40   **https://www.mineralproducts.org/Campaigns/Quarries-and-Nature/50-Years-of-Net-Gain.aspx**

41   **https://mineralproducts.org/Campaigns/Quarries-and-Nature/MPAs-National-Nature-Park.aspx**

42   Minerals Products Association (2012) "The mineral products industry's contribution to the UK"

BENEFITS OF INTEGRATING GI INTO MINERALS DEVELOPMENT

Cost-effective mitigation during extraction

The often-phased nature of minerals extraction over large sites and extended timescales, and the availability of earth moving and shaping equipment, means that delivery of green infrastructure features can begin at the earliest stages of mineral working. Habitats can be created temporarily or seasonally, including ponds or nesting banks for birds or invertebrates. The Worcestershire Minerals Local Plan supports this approach, with delivery of GI throughout the whole lifetime of a development encouraged in the policy on green infrastructure.

https://afterminerals.com/advice-category/habitat-advice/

https://www.worcestershire.gov.uk/minerals

Reduced reliance on inert fill

With increased recycling and re-use of waste, inert fill to raise land levels following extraction is becoming increasingly scarce. It is also no longer acceptable in areas of flood risk or where it could impact on groundwater. The landfill of waste is also discouraged through the Worcestershire Waste Core Strategy.

The creation of many GI assets, including wetlands, facilitate restoration through use of overburden and other material found on site, without the need to import fill. This not only reduces reliance on outside industry but also minimises the regulatory burden through reducing environmental permitting requirements.

Cost-effective restoration

Wet woodland is a common component of aggregate sites and almost always succeeds rapidly during the operational period. For example, restored sand and gravel sites can provide the moist ground conditions for wet willow woodland which can be promoted by natural regeneration of a surrounding habitat or through planting. Natural regeneration is therefore an effective and a low-cost alternative that requires minimum effort. In addition, natural hydrological systems are generally more sustainable and cost-effective solutions than artificial water control systems.

Figure 13. Reasons to integrate delivery of green infrastructure into minerals development

5.40 By taking a green infrastructure approach and integrating restoration scheme objectives with the delivery of outcomes for a wider network of sites, environmental aspects are more likely to be successful. By taking an integrated green infrastructure approach it can be possible to deliver multiple benefits, for example biodiversity gains can be incorporated into agricultural or recreational restoration schemes.

What principles should be followed?

5.41 Figure 5 indicates the high-level approach that should be taken to green infrastructure in each Environmental Character Area. A profile for each area is given in **Appendix C**, with detail about the priorities outlined in **Appendix D**. Additional guidance can be found in the Green Infrastructure Framework Documents 2, 3 and 4, which provide the evidence base for this Green Infrastructure Strategy.

5.42 The key to planning and managing green infrastructure in minerals extraction and restoration is to consider the site in its context and be guided by the five 'Process' principles of how to deliver good GI set out in paragraph 5.1. This includes considering the features of the site and the networks of habitats, Public Rights of Way, sustainable transport routes and water courses that surround it. The setting of the site within the local landscape, and how restoration can seek to enhance local landscape character and views into or out of existing GI assets should be considered. Figure 14 outlines the steps to follow when considering how to integrate green infrastructure into mineral extraction and restoration.
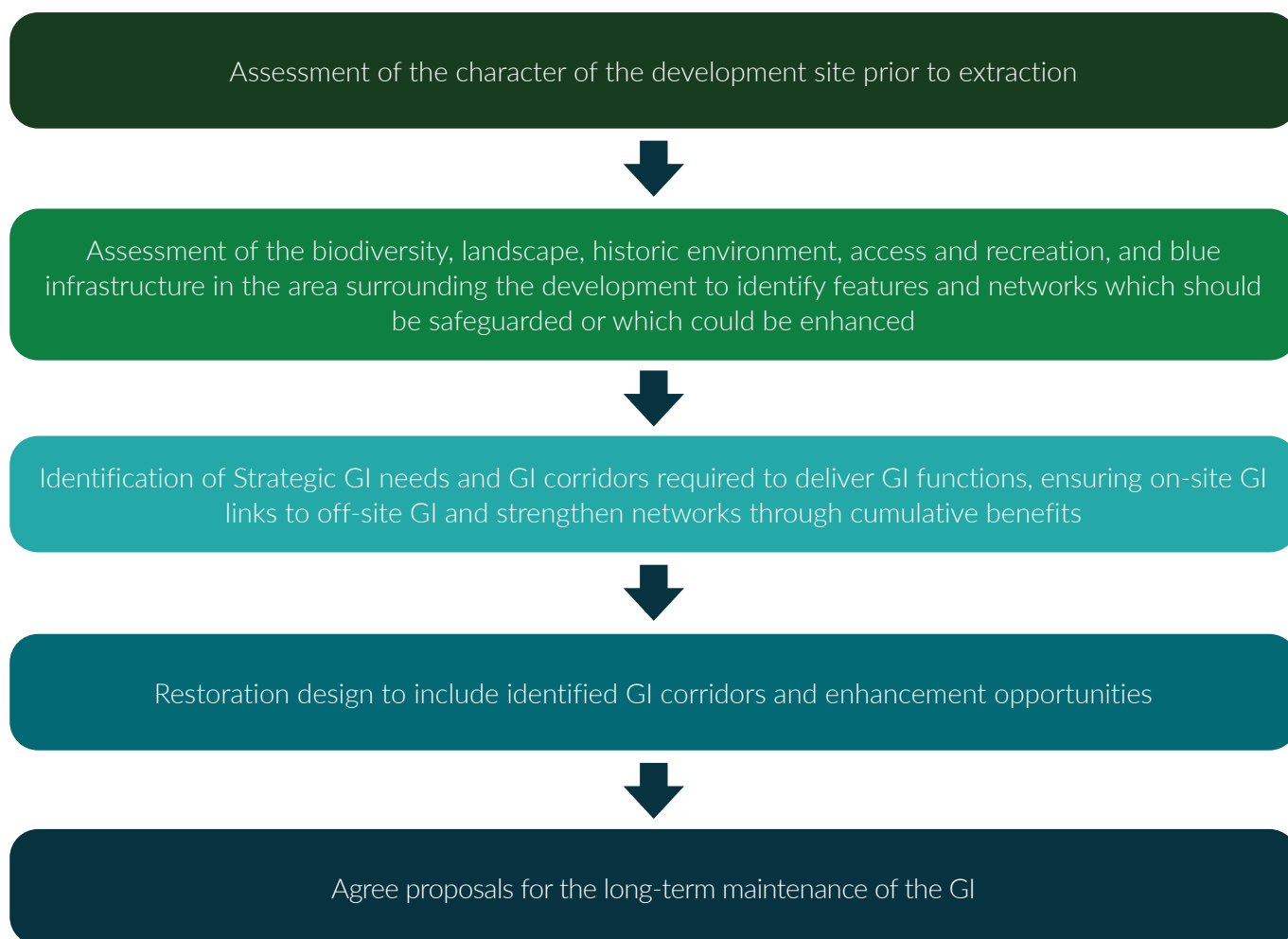
Assessment of the character of the development site prior to extraction

⬇

Assessment of the biodiversity, landscape, historic environment, access and recreation, and blue infrastructure in the area surrounding the development to identify features and networks which should be safeguarded or which could be enhanced

⬇

Identification of Strategic GI needs and GI corridors required to deliver GI functions, ensuring on-site GI links to off-site GI and strengthen networks through cumulative benefits

⬇

Restoration design to include identified GI corridors and enhancement opportunities

⬇

Agree proposals for the long-term maintenance of the GI

Figure 14. Principles to follow when integrating green infrastructure into minerals development

What mechanisms exist to assist in delivery now and in the future?

5.43 Modern planning permissions for mineral workings require a detailed restoration and aftercare scheme. The new legal requirement to deliver Biodiversity Net Gain through planning also provides an opportunity to contribute to the provision of green infrastructure and to secure funding for the long-term management of features.

5.44 Many operators are sympathetic to environmental enhancement, which is supported by the Mineral Products Association. There is likely to be significant potential to incorporate wider green infrastructure concepts within a greater range of restoration schemes.

5.45 The Worcestershire Minerals Local Plan[43] (MLP) (adopted July 2022) has a green infrastructure approach embedded throughout the plan to guide mineral extraction and restoration. Green infrastructure priorities are set out in policies for each of the strategic corridors identified in the MLP. If this opportunity is to be fully embraced, then a partnership approach to delivery is needed, involving discussions between the County Council (as the mineral planning authority), the mineral operator, the Parish or Town Council, the local community, and other relevant members of the Worcestershire Green Infrastructure Partnership.

D. Delivering Green Infrastructure through infrastructure development

Why deliver Green Infrastructure through infrastructure development?

5.46 The term 'infrastructure' means the basic facilities, services and installations needed for a functioning community or society, including transport, waste management, emergency services, communications, water supply, wastewater, flood risk, minerals and energy (including heat), education, health, sport and recreation facilities, community and cultural infrastructure and other local facilities.

5.47 Green infrastructure mechanisms can be used both in addition to traditional grey infrastructure approaches and as an alternative. Figure 15 illustrates alternative approaches and contributions which green infrastructure can offer.

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43 **https://www.worcestershire.gov.uk/minerals**

BENEFITS OF INTEGRATING GI INTO INFRASTRUCTURE DEVELOPMENTS

Air quality management

Government estimates that fine particulate pollution and NO2 emissions will cost the NHS and social care system £1.6 billion between 2017 and 2025. The use of green infrastructure in urban areas or as part of the strategic transport network can reduce the concentrations of pollutants to which people living and working nearby are exposed. A review of the recent scientific literature on the links between green infrastructure and air quality concluded that good barrier design and careful selection of plants can enhance air pollution mitigation.

https://www.gov.uk/government/publications/air-pollution-applying-all-our-health

Effects of Vegetation on Urban Air Pollution (2018). Air Quality Expert Group.

Barwise, Y and Kumar, P. njp Climate and Atmospheric Science (2020)3:12.

Screening and buffering

Green infrastructure can contribute to acoustic or visual screening of development. As well as tree and shrub planting alongside a noise source, sound insulation can also be enhanced through the use of green walls and green roofs to reduce noise transfer inside a building. Well-designed buffering of a development will include consideration of how onsite green spaces and green features can link into the local ecological network, connect priority habitats and provide enhancements for wildlife both within and beyond the development boundary.

https://livingroofs.org/noise-sound-insulation/
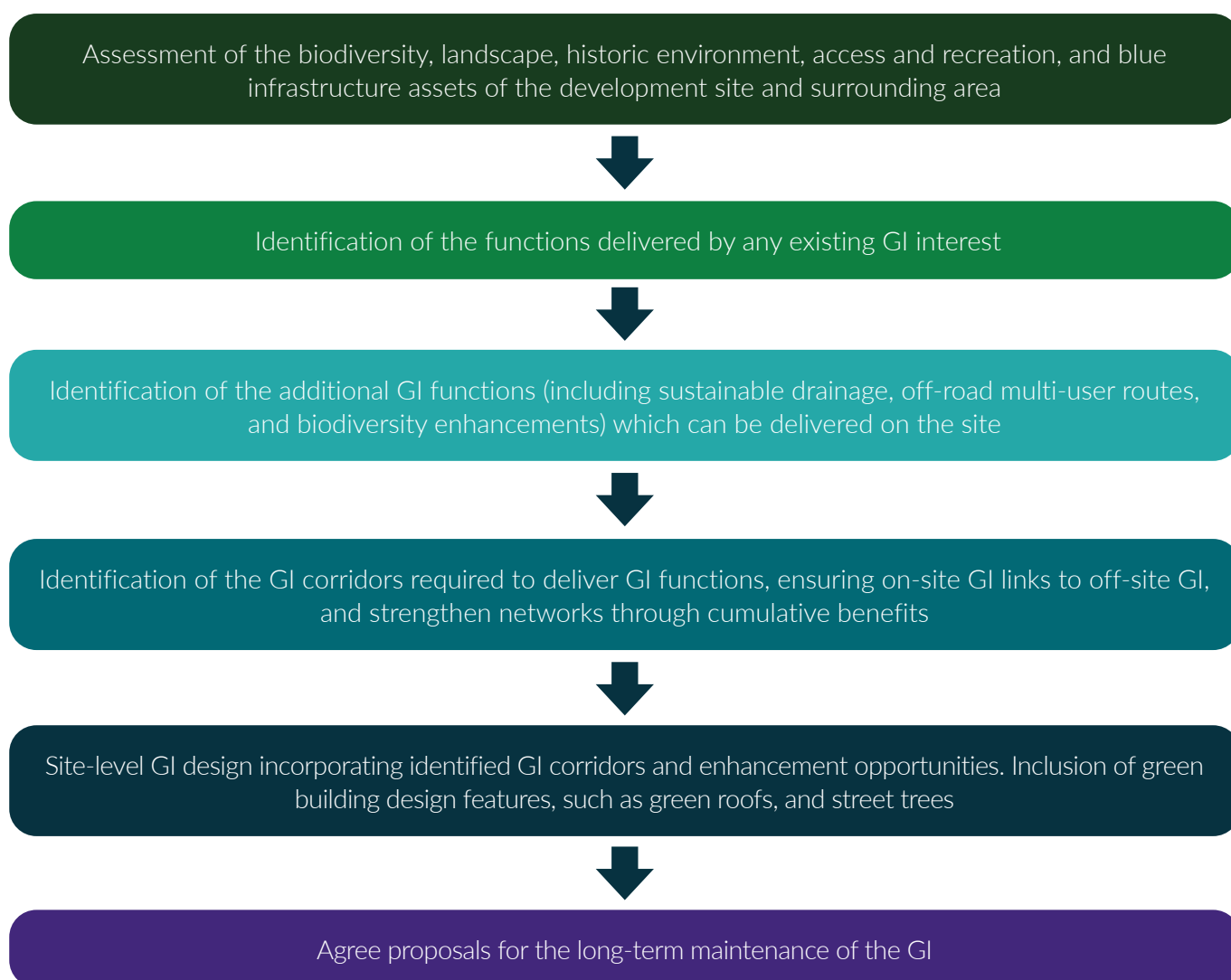
Surface water management

Green infrastructure can be used alongside or as an alternative to traditional engineered surface water drainage systems to support the protection of critical infrastructure from flooding. The use of SuDS to manage surface water within the development can deliver a cost saving as well as providing wildlife habitat, amenity value for people attending or working on the site and opportunities for education. Natural Flood Management (NFM) interventions can be located upstream of a development to reduce or slow the flow of water in times of flood events. Both SuDS and NFM can be designed to reduce the need for the chemical treatment of water before it enters a watercourse or the supply chain.

https://www.worcestershire.gov.uk/flooding/plans-policies-and-strategies

Figure 15. Reasons to integrate green infrastructure into infrastructure developments

What principles should be followed?

5.48 Figure 5 indicates the high-level approach that should be taken to green infrastructure in each Environmental Character Area. A profile for each area is given in **Appendix C**, with detail about the priorities outlined in **Appendix D**. Additional guidance can be found in the Green Infrastructure Framework Documents 2, 3 and 4, which provide the evidence base for this Green Infrastructure Strategy.

5.49 The key to planning and managing green infrastructure in infrastructure development is to consider the site in its context and be guided by the five 'Process' principles of how to deliver good GI set out in paragraph 5.1. This includes considering the features of the site and the networks of habitats, Public Rights of Way, sustainable transport routes and water courses that surround it. The setting of the site within the local landscape, and how the development can seek to enhance local landscape character and views into or out of existing GI assets should be considered. Figure 16 outlines the steps to follow when considering how to integrate green infrastructure within infrastructure development.

Assessment of the biodiversity, landscape, historic environment, access and recreation, and blue infrastructure assets of the development site and surrounding area

↓

Identification of the functions delivered by any existing GI interest

↓

Identification of the additional GI functions (including sustainable drainage, off-road multi-user routes, and biodiversity enhancements) which can be delivered on the site

↓

Identification of the GI corridors required to deliver GI functions, ensuring on-site GI links to off-site GI, and strengthen networks through cumulative benefits

↓

Site-level GI design incorporating identified GI corridors and enhancement opportunities. Inclusion of green building design features, such as green roofs, and street trees

↓

Agree proposals for the long-term maintenance of the GI

Figure 16: Principles to follow when integrating green infrastructure into infrastructure developments

5.50 The Worcestershire GI Partnership has established the principle of preparing Green Infrastructure Concept Plans for major development sites, working in partnership with the appropriate local planning authority and the developer and/or their agents. These should contain an assessment of the GI assets and identify a set of GI principles and priorities for the site.

5.51 The Building with Nature Standards Framework[44] is the UK's first evidence-based benchmark for good industry practice for the delivery of high-quality green infrastructure. The standards are applicable to development of different types and scales. As well as allowing benchmarking of plans and policies and guiding the design and construction phases of the development itself, the standards provide an assessment tool to grant the Building with Nature Award within an accreditation system. Twelve overarching principles are set out that should be applied when seeking to achieve the standards.

What mechanisms exist to assist in delivery now and in the future?

5.52 Clear local planning policies are fundamental to achieving GI provision of sufficient quality and quantity within new development. Good GI policies should also seek the inclusion of green building design features, such as those that will assist with temperature regulation and mitigation of predicted climate change impacts. Local policy should also reflect the principles of sustainable development identified in national planning policy. Appropriately trained development management officers at local authorities and well-informed developers and consultants will also be key to success.

5.53 Companies and organisations within the private or public sector who are responsible for infrastructure delivery and operation are increasingly setting strong environmental and climate adaptation standards for performance and governance. Some of these standards are driven by a legislative and regulatory framework, and some are based on broader corporate social responsibility principles. Green infrastructure, with its links to biodiversity protection, sustainability, and climate resilience and adaptation, should be a key component in achieving and demonstrating these high standards.

5.54 The legal requirement to deliver Biodiversity Net Gain through planning provides an opportunity to contribute to the provision of green infrastructure on the infrastructure development site and to secure funding for the long-term management of features.

5.55 Some major infrastructure development will fall within the scope of Nationally Significant Infrastructure Projects (NSIP), which are subject to separate planning laws. There will be a Biodiversity Net Gain requirement for NSIPs and a biodiversity gain statement (or statements) for NSIPs will be published by Government.

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44   **https://www.buildingwithnature.org.uk/**

E: Delivering Green Infrastructure through Retrofitting

Why deliver Green Infrastructure through retrofitting?

5.56   Retrofitting green infrastructure means designing and integrating GI features into existing development. Sometimes this involves removing an existing 'grey' infrastructure feature and replacing it with a 'green' solution.

BENEFITS OF RETROFITTING GI INTO DEVELOPMENT

Improving the public realm

Green infrastructure can be retrofitted to individual buildings to enhance the passive cooling effect or to mitigate ground-level ozone pollution. GI features that will contribute to this include living walls, green roofs and tree and shrub planting in outdoor spaces.

Case study: The refurbishment of Birmingham New Street Station included the installation of a 300m^2 living wall.

UK Green Building Council: **https://www.ukgbc.org**

Promoting health and wellbeing

Green infrastructure can be used in urban areas to create safer spaces for pedestrians and cyclists by increasing tree cover and green space, which supports and encourages active, healthy travel choices.

Cities Alive: Rethinking green infrastructure (2014). ARUP

Sustainable water management

Green solutions to flood attenuation, such as naturally vegetated soakaways or a complex of ponds, can provide savings on the cost of maintaining or replacing traditional hard 'grey' infrastructure. Green roofs, rain gardens and other SuDS features can all be retrofitted to manage storm water and surface water run-off.

Case study: Moorlands Junior School in Sale achieved a 20% reduction in rainwater volume entering the public sewer via the installation of raingardens, infiltration trenches and permeable paving.

Susdrain: www.susdrain.org/case-studies/pdfs/025_18_04_30_susdrain_suds_awards_moorlands_junior_school_suds_sale_light.pdf
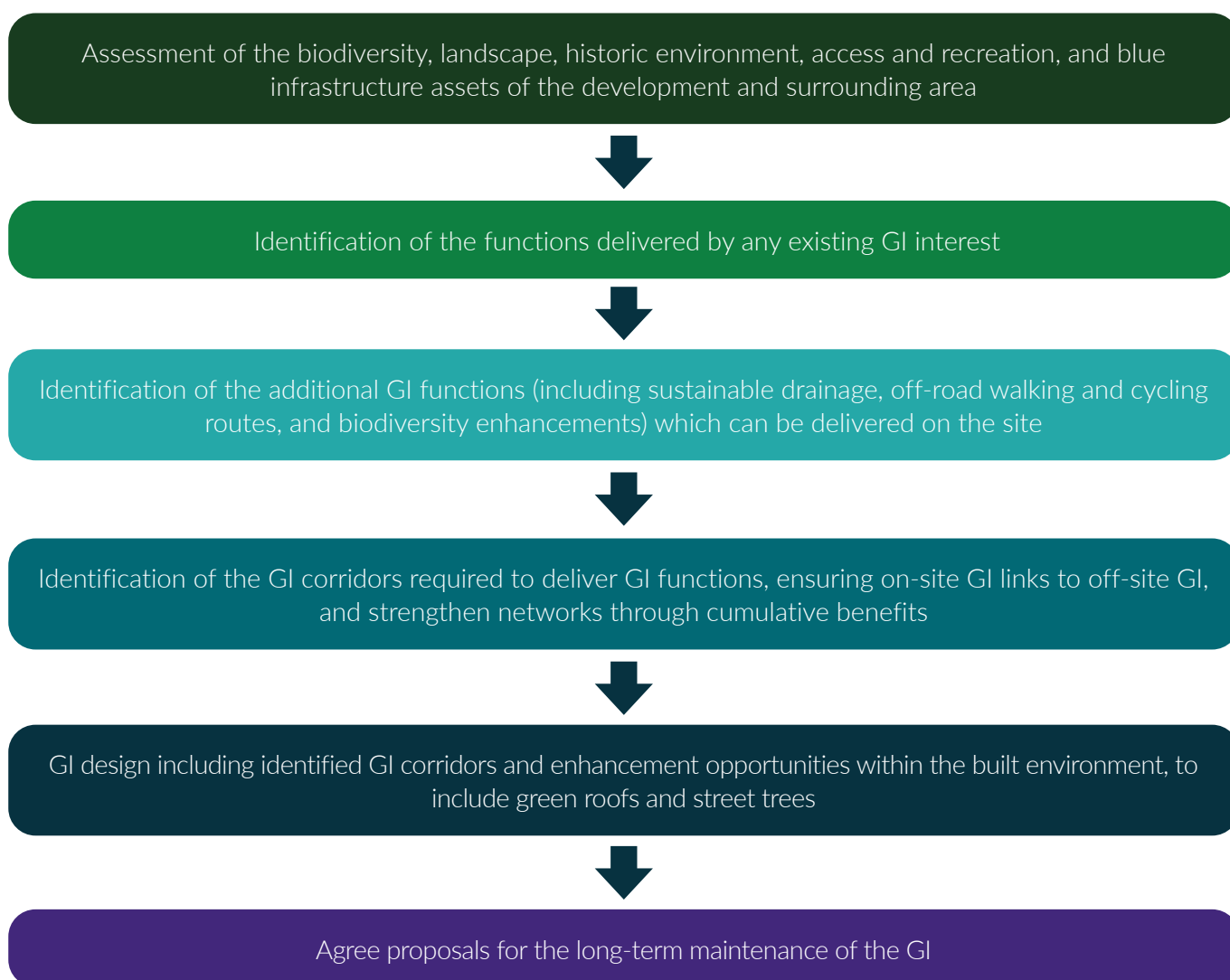
Climate Resilience

Well-designed green infrastructure refits can contribute to making a development more resilient to the impacts of climate change. This could include the replacement of impervious sealed surfaces, the installation of SuDS or increasing urban tree cover. Green Infrastructure can also play an important role in measures that reduce energy consumption or support a community to make more sustainable travel choices and lower CO^2 emissions.

Town and Country Planning Association: https://tcpa.org.uk/wp-content/uploads/2022/03/Factsheet-3.pdf

Figure 17. Reasons to retrofit green infrastructure into developments

What principles should be followed?

5.57 Figure 5 gives an indication of the high-level approach that should be taken to green infrastructure in each Environmental Character Area. A profile for each area is given in **Appendix C**, with detail about the priorities outlined in **Appendix D**. Additional guidance can be found in the Green Infrastructure Framework Documents 2, 3 and 4 which provide the evidence base for this Green Infrastructure Strategy.

5.58 The key to delivering good green infrastructure through retrofitting is to consider the site in its context and be guided by the five 'Process' principles of how to deliver good GI set out in paragraph 5.1. This includes considering the features of the site and the networks of habitats, Public Rights of Way, sustainable transport routes and water courses that surround it. The setting of the site within the local landscape, and how retrofitting can seek to enhance local landscape character and views into or out of existing GI assets should be considered. Figure 18 outlines the steps to follow when considering how to retrofit green infrastructure.

5.59 The Building with Nature Standards Framework is applicable to projects which are retrofitting GI into development.

Assessment of the biodiversity, landscape, historic environment, access and recreation, and blue infrastructure assets of the development and surrounding area

Identification of the functions delivered by any existing GI interest

Identification of the additional GI functions (including sustainable drainage, off-road walking and cycling routes, and biodiversity enhancements) which can be delivered on the site

Identification of the GI corridors required to deliver GI functions, ensuring on-site GI links to off-site GI, and strengthen networks through cumulative benefits

GI design including identified GI corridors and enhancement opportunities within the built environment, to include green roofs and street trees

Agree proposals for the long-term maintenance of the GI

Figure 18: Principles to follow when retrofitting green infrastructure into developments

What mechanisms exist to assist in delivery now and in the future?

5.60   A key driver for the retrofitting of GI will be instances where an intervention is required to solve an identified problem. Examples could relate to flood risk management, water quality objectives, urban air quality targets, high rates of crime or anti-social behaviour or unacceptable accident statistics. There may be opportunities to create, enhance or re-establish connections through the development, especially those that were lost or degraded during the original construction. Examples include habitat networks to support nature recovery, or multi-user paths to improve the local Public Rights of Way network. There may also be a statutory duty on the relevant public body to address the problem, which can prompt consideration of a GI retrofit solution.

5.61   Urban regeneration projects should actively seek to improve or deliver green infrastructure as part of the wider design by considering 'green' solutions in preference to traditional grey infrastructure.

5.62   Some sources of charitable or grant funding may be applicable to the retrofitting of GI. For example, between 2019 and 2023 the Natural Networks[45] project, delivered by Worcestershire County Council and Worcestershire Wildlife Trust, offered grants for biodiversity enhancements to accessible green spaces, and the delivery of wider multi-functional benefits was promoted.

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45   https://www.worcestershire.gov.uk/naturalnetworks

6. Funding and Viability

6.1   Opportunities to develop green infrastructure will arise from a wide range of situations, from changes in land management to development proposals. This diversity leads to a range of funding mechanisms. Some proposals will need capital funding, to establish a green infrastructure asset, and subsequently revenue funding, to secure its long-term management. A new SuDS installation, for example, will require capital investment to initially create the scheme as part of development proposals, as well as revenue funding for its long-term maintenance and management to secure its functionality.

6.2   Funding for green infrastructure schemes will be dependent on the type of scheme, its origins and functions. For example, capital investment in green infrastructure arising from a new development will be funded primarily from that development but may need to look at different ways of using revenue funding to secure long-term maintenance.

6.3   The table below outlines some of the principal sources of capital and revenue funding for green infrastructure for schemes within Worcestershire. This is not an exhaustive list, as other funding schemes may be available in particular circumstances or in specific areas.

Table 3. Funding mechanisms

Funding or delivery mechanism	Types of GI supported	Details	Type of funding
Community Infrastructure Levy (CIL)[46] [47]	New development	The money can be used to fund a wide range of infrastructure that is needed because of new development and provides wider benefits. This includes flood defences, parks, and green spaces.	Capital and revenue
Section 106 agreements	New development	Funding must be intrinsically linked to the development.	Capital and revenue
Biodiversity Net Gain (BNG)	New development	Money contributed by developers to meet planning conditions for delivering BNG.	Capital and revenue
Agri-environment funding	Land management	Agri-environment funding can be secured by landowners and managers for changes to the management of land which benefit the natural environment. The new Environmental Land Management schemes are currently being piloted with plans for full implementation by 2024.	Capital and revenue

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46   CIL has been adopted by the three South Worcestershire councils: Malvern Hills, Wychavon and Worcester City

47   The Levelling Up and Regeneration Act 2023 contains provisions for changes to the Community Infrastructure Levy, therefore its relevance to green infrastructure delivery in Worcestershire may change.

Funding or delivery mechanism	Types of GI supported	Details	Type of funding
Woodland creation and management funding	Land management relating to trees and woodland	A variety of funding streams relating to the planning and delivery of tree, hedgerow and woodland planting, and the sustainable management of trees, hedgerows and woodland. Includes Forestry Commission grant schemes, Local Authority Treescapes Fund, Urban Tree Challenge Fund, emerging woodland carbon credit schemes.	Capital and revenue
Farming in Protected Landscapes (FiPL)	Habitat creation and restoration, access, public engagement	A Defra grant programme applicable within protected landscapes (AONBs, National Parks and the Broads) for nature recovery, climate change mitigation, access and education and landscape character enhancement.	Capital
The National Lottery Community Fund	Community use within new or existing development / minerals/ infrastructure infrastructure / retrofitting	A variety of funding streams applicable to community projects including acquisition and establishment of public open space.	Capital and revenue
The National Lottery Heritage Fund	Community use within new or existing development / minerals/ infrastructure infrastructure / retrofitting	A variety of funding streams to be used to conserve and enhance heritage assets including nature reserves and parkland.	Capital and revenue
Hypothecated taxes	New development	A tax levied for a specific purpose. Taxes can be levied on new development and reserved for green infrastructure. This model has been successfully applied on both small- and large- scale development sites.	Revenue
Endowments	New development / minerals / infrastructure	Site endowments may be successfully used to create a long-term income for the management of land. It may be appropriate to dedicate these to a specific charitable trust which can use the income to manage the land. There are also charitable companies which specialise in using endowments to manage land.	Revenue

Funding or delivery mechanism	Types of GI supported	Details	Type of funding
Management company	New development / minerals	Land ownership is retained by the developers, but responsibility for the management is transferred to a management company with agreed standards and a management plan.	Revenue
Community Development Trust	New development / retrofitting	A Trust established with the purpose of providing benefit to the local community, including through the long-term regeneration or management of land.	Revenue
Local authority	New development / minerals/ infrastructure	A traditional method of securing GI on development sites with the long-term management transferred to the relevant local authority.	Revenue
Natural Networks (and successor programmes)	Community use within new or existing development / retrofitting	Worcestershire-based fund providing grants to enhance the biodiversity value of greenspaces that have community/public access.	Capital

Viability

6.4   The capital and revenue costs of green infrastructure are determined by the requirements of any individual scheme. Nationally, several sources of information can inform the assessment of GI costs, including:

- standard costs given by e.g., Spon's Price Books
- standard costs from agri-environment schemes
- farm contractor charges guides
- previous experience and organisational knowledge of the costs of schemes and their long-term maintenance.

6.5   Any viability assessment of GI needs to be carried out with consideration to both the relevant policy requirements and the functions which are seeking to be delivered. Investing in green infrastructure can be a more cost- effective and viable alternative to investment in traditional grey infrastructure. The assessment also needs to take into account all the multi-functional characteristics of green infrastructure, to ensure functions are not costed twice.

6.6   Green infrastructure costs should be considered critical to delivering sustainable development in the meaning of the NPPF. Accordingly, they must be embedded and assessed as a part of site viability to determine if the site can support both the initial capital costs and the longer-term management costs to ensure that functionality is maintained.

6.7   GI provision should be considered strategically to ensure that new green infrastructure assets genuinely meet local need. For example, a settlement receiving multiple small developments over time risks not receiving the larger-scale green spaces or places for play needed by the cumulative increase in population, although the developments individually may comply with local GI policies. This highlights the importance of an evidence-based approach to GI delivery that considers the site in its full context.

7. Monitoring the Success of the Green Infrastructure Strategy

7.1   The success of the Worcestershire Green Infrastructure Strategy will be monitored through the following indicators:

1. Incorporation of green infrastructure principles into strategic approaches to the natural environment, climate change resilience and adaptation, economy, health and wellbeing. Key indicator/target: Inclusion of GI principles in other key new, revised or updated local plans and strategies, e.g. those published by Local Planning Authorities, LNP, LEP, Health and Wellbeing Board.

2. Adopted Local Plans that include green infrastructure policies based on the GI strategy and framework documents. Key indicator/target: GI policies in all adopted Local Plans.

3. Number of successful funding bids for green infrastructure projects by members of the Green Infrastructure Partnership. Key indicator/target: 2 successful bids for green infrastructure projects by Partnership members

4. Number of Green Infrastructure Concept Plans produced during the lifetime of this Strategy document by the Worcestershire GI Partnership. Key indicator/target: 5 Green Infrastructure Concept Plans prepared for strategic development sites in Worcestershire

5. Number of Green Infrastructure Concept Plans produced by the GI Partnership which are subsequently reflected in development master plan proposals. Key indicator/target: All Green Infrastructure Concept Plans produced are reflected in subsequent development proposals

6. By 2024 begin data collection for a spatially mapped baseline of land management initiatives that support delivery of green infrastructure in Worcestershire, to include land dedicated to biodiversity offsetting (arising from mandatory BNG), carbon sequestration, ELMS and Natural Flood Management. Key indicator/target: Framework and protocols for data collection and mapping agreed and data collection underway

7.2   Performance against these indicators will be reported to the Local Nature Partnership.

8. Next Steps

8.1   Following the endorsement of the revised Worcestershire Green Infrastructure Strategy by the Worcestershire Green Infrastructure Partnership, partners will then take steps to implement the strategy in their organisations and through their own structures.

Worcestershire level

8.2   The Strategy has benefited from the recognition and support of the Worcestershire Local Nature Partnership (LNP). The Worcestershire LNP is a partnership of organisations working together to provide leadership on environmental issues and working with partners in other sectors (such as business and enterprise, landowners, health, and tourism), to ensure the future prosperity and health of our environment. The LNP will be an effective delivery mechanism for the Strategy in the future.

8.3   The revised Strategy will be endorsed by Worcestershire County Council. A similar process may be followed by other partner organisations with similar decision-making structures.

8.4   The evidence base for the Worcestershire Green Infrastructure Strategy should be kept updated. Priorities include a review of Framework Document 4, mapping of GI provision and assessment of GI need within urban areas, and the preparation of a new Framework document to explore viability and costing of GI.

8.5   Worcestershire County Council is the provisional Responsible Authority for the preparation of a Local Nature Recovery Strategy (LNRS) for the county. The LNRS should make clear links with the Green Infrastructure Strategy. The planning and delivery of green infrastructure should also seek to align with the aims and objectives of other relevant strategic-level landscape-scale management plans, for example the Nature Recovery Plans published by the Malvern Hills National Landscape and the Cotswolds National Landscape.

District level

8.6   The Worcestershire Green Infrastructure Strategy is a strategic document and an important first step in the planning and delivery of GI in the county. The aim of the WGIP is for the strategic priorities to be reflected in adopted/emerging Local Plans across the county.

8.7   It is recommended that local councils develop further work based on the vision and priorities established in this Strategy, to support strategic prioritisation and delivery of GI at a finer scale.

8.8   Historically, the district councils have worked closely with the Worcestershire GI Partnership and used the GI evidence base to inform the GI policies in their adopted/emerging Local Plans. District Councils should continue to use the Strategy and further local analysis to inform their Local Plans. The incorporation of GI priorities in other planning guidance, such as SPDs and design guides, is also encouraged.

8.9   The Strategy should be used to inform future economic development decisions at the district level. Other district functions such as sports and leisure or parks and countryside services should have regard to the principles and priorities identified in the Strategy.

Site level

8.10   The Worcestershire GI Partnership has been developing GI Concept Plans and Statements for strategic development sites in Worcestershire. Whilst District Councils are encouraged to be involved in this process, they can also produce guidelines for developing other specific sites and proactively engage with developers. This will help to ensure co-ordination of the wider Strategy delivery and will help to realise a site's green infrastructure potential.

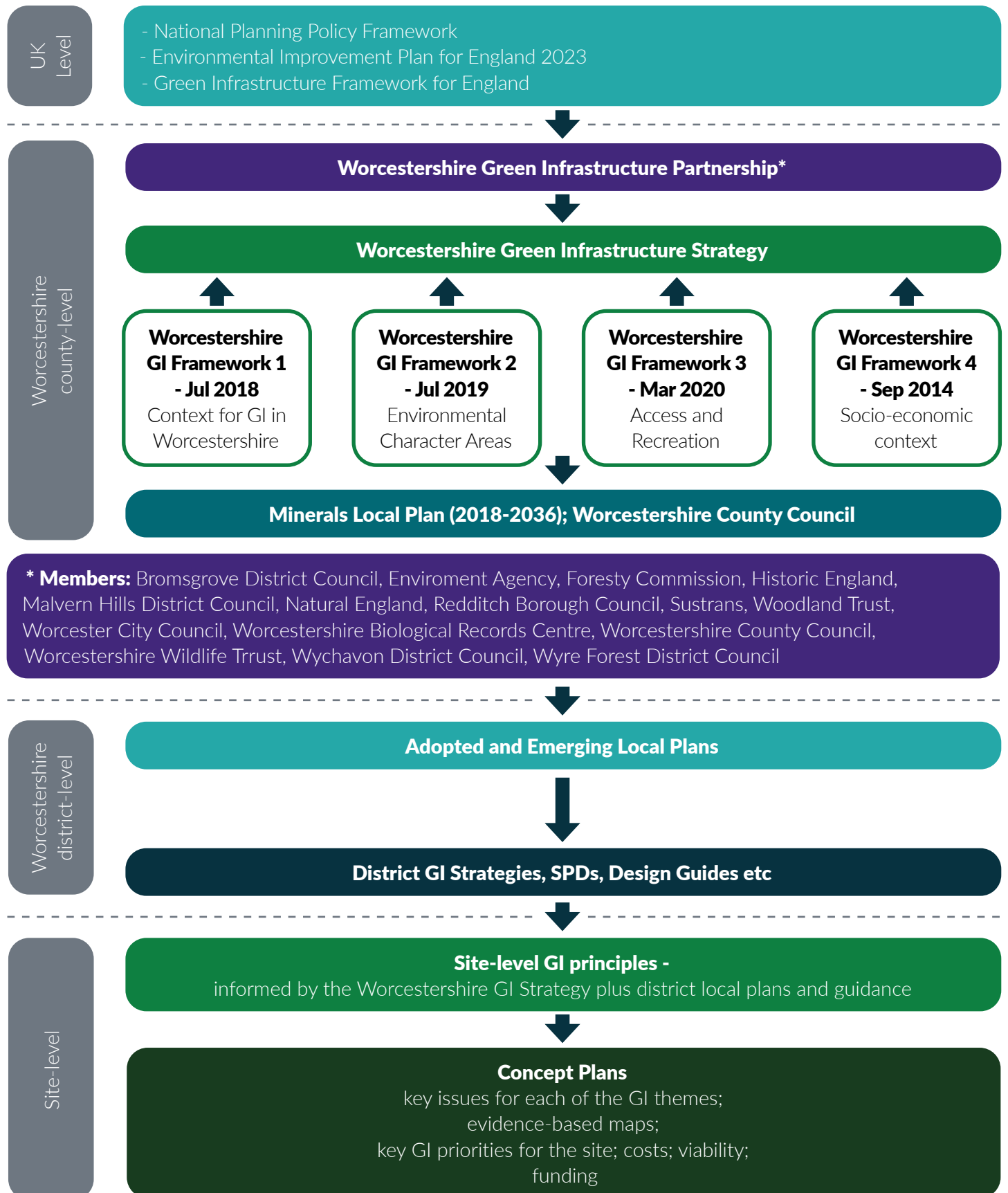# Appendix A: Worcestershire Green Infrastructure Framework

- National Planning Policy Framework
- Environmental Improvement Plan for England 2023
- Green Infrastructure Framework for England

Worcestershire Green Infrastructure Partnership*

Worcestershire Green Infrastructure Strategy

Worcestershire county-level

| **Worcestershire GI Framework 1 - Jul 2018** Context for GI in Worcestershire | **Worcestershire GI Framework 2 - Jul 2019** Environmental Character Areas | **Worcestershire GI Framework 3 - Mar 2020** Access and Recreation | **Worcestershire GI Framework 4 - Sep 2014** Socio-economic context |

Minerals Local Plan (2018-2036); Worcestershire County Council

* Members: Bromsgrove District Council, Enviroment Agency, Foresty Commission, Historic England, Malvern Hills District Council, Natural England, Redditch Borough Council, Sustrans, Woodland Trust, Worcester City Council, Worcestershire Biological Records Centre, Worcestershire County Council, Worcestershire Wildlife Trrust, Wychavon District Council, Wyre Forest District Council

Worcestershire district-level

Adopted and Emerging Local Plans

District GI Strategies, SPDs, Design Guides etc

Site-level

Site-level GI principles - informed by the Worcestershire GI Strategy plus district local plans and guidance

Concept Plans key issues for each of the GI themes; evidence-based maps; key GI priorities for the site; costs; viability; funding

Figure A1: Worcestershire Green Infrastructure Framework – structures

GI Partnership

A.1   In 2008, organisations including Worcestershire County Council, the six district councils, Worcestershire Wildlife Trust and Natural England came together to form a cross-sectoral partnership to optimise planning and delivery of GI. The Worcestershire GI Partnership has subsequently expanded to cover the remaining Defra statutory agencies and a number of other voluntary organisations. The partners represent a diverse range of interests including the natural and historic environment, planning policy and development, sustainability, recreation and transport.

A.2   One of the Partnership's roles is to publish a Worcestershire Green Infrastructure Strategy. The Strategy is a non-statutory county-wide guidance document which aims to:

- direct and drive the delivery of GI in Worcestershire; and
- inform relevant strategies and plans of partner organisations.

Green Infrastructure: Strategy and Evidence Base

A.3   The Worcestershire Green Infrastructure Strategy establishes a vision and priorities for Green Infrastructure provision in the county.

A.4   The Strategy is informed by four GI 'Framework Documents', which form a detailed GI evidence base. This evidence base is periodically reviewed and updated. Readers should ensure they are referring to the most up-to-date version.

- **GI Framework Document 1** (first published in November 2008 and updated in July 2018): provides an introduction to the concept of Green Infrastructure (GI) and identifies the need for the strategic planning of GI and the policy drivers that support GI planning at different spatial scales.
- **GI Framework Document 2** (first published in July 2012 and updated in July 2019): provides an introduction to the landscape, biodiversity and historic environment datasets and develops the concept of GI Environmental Character Areas based on the quality and quantity of these natural environment assets.
- **GI Framework Document 3** (first published in May 2013 and updated in March 2020): identifies the location, extent, and functionality of strategic recreational assets in Worcestershire. It also explores the potential need for new recreational assets and identifies areas of search and potential funding mechanisms for new facilities.
- **GI Framework Document 4** (published September 2014 and due to be updated): explores how multifunctional green infrastructure solutions can provide economic and health benefits, as well as contributing to climate change mitigation and adaptation.

A.5   The Framework Documents can all be found on Worcestershire County Council's **Planning for Green Infrastructure** webpages.

GI Policy Context

National Policy

A.6 The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied. Policies encourage the creation, protection, enhancement and management of networks of biodiversity and green infrastructure.

A.7 The Environmental Improvement Plan for England 2023 builds on the vision of the 25-Year Environment Plan (25YEP) 2018. It sets goals and targets that will contribute to restoring nature, reducing environmental pollution, and increasing the prosperity of the country.

A.8 The Green Infrastructure Framework for England was a commitment within Government's 25YEP to support the greening of towns and cities and connections with the surrounding landscape.

Local Plans

A.9 **Bromsgrove District Plan** (adopted 2017): Policy BDP24 requires development to adopt a holistic approach to deliver the multiple benefits and vital services of GI, including improving connectivity and enhancing the quality of GI.

A.10 **South Worcestershire Development Plan** (adopted 2016; under review): Policy SWDP 5 sets GI targets at 40% for greenfield sites exceeding 1ha gross and 20% for sites less than 1ha but more than 0.2ha for housing and mixed-use proposals. This excludes private gardens. It is proposed to strengthen the policy on GI under the revised plan.

A.11 **Borough of Redditch Local Plan No.4** (adopted 2017): Policy 11 confirms the importance of a multifunctional GI network to the people, wildlife and character of the borough.

A.12 **Wyre Forest District Local Plan** (adopted 2022): Policy SP.28 sets GI targets at 40% for greenfield sites exceeding 1ha gross and 20% for sites less than 1ha but more than 0.2ha for housing and employment (including mixed-use) proposals. This excludes private gardens. Brownfield developments are expected to include proposals for GI features such as SuDS, green roofs and green walls and that these should be integrated into the wider GI network.

Appendix B: Strategic Green Infrastructure Assets

B.1   Green Infrastructure can be considered at different spatial scales, from small local sites at a neighbourhood scale through to larger strategic sites which are considered on a county or sub-regional scale.

B.2   Figure B1 and Table B1 detail the strategic GI assets in Worcestershire.
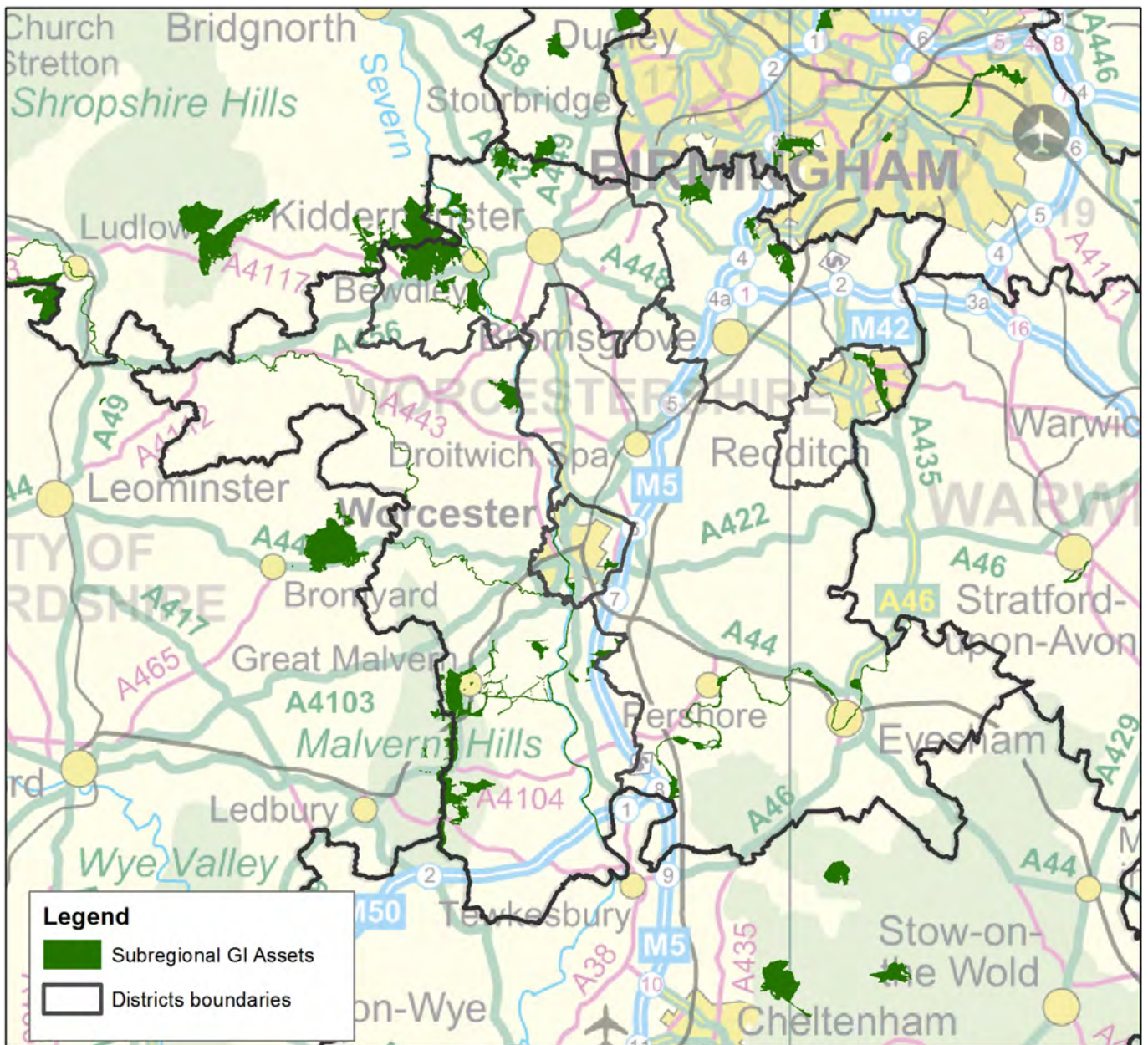
Figure B1: Strategic Green Infrastructure Assets in Worcestershire

Table B1: Strategic Green Infrastructure Assets in Worcestershire

Site name	District
Wyre Forest (incl Earnwood, Maxfields, Eyemore Copses, Woodlands for People and Section 16 land)	Wyre Forest
The Malvern Hills (incl Malvern Common, North Hill, Sugar Loaf Hill and Worcestershire Beacon, Castlemorton Common, Coombe Green, Hollybed, Shadybank Commons)	Malvern Hills
River Avon	Wychavon
River Severn	Malvern Hills and Worcester City
River Teme	Malvern Hills
River Stour	Wyre Forest
Staffordshire and Worcestershire Canal	Wyre Forest
Worcester and Birmingham Canal	Bromsgrove and Worcester City
Droitwich Canals	Wychavon
Arrow Valley Country Park	Redditch
Lickey Hills	Bromsgrove
Clent Hills	Bromsgrove
Ribbesford Wood also known as Arley Wood	Wyre Forest
Shrawley Wood	Malvern Hills
Arley Birch and Coldridge Wood	Wyre Forest
Kempsey Common	Malvern Hills
Waseley Hills Country Park	Bromsgrove
Worcester Woods Country Park	Worcester City
Riverside Meadows (Stourport-on-Severn)	Wyre Forest
Bewdley Riverside Corridor	Wyre Forest

Appendix C: Green Infrastructure Profiles

Green Infrastructure Profiles

Teme Valley and Wyre Forest

Name	Description
Strategic GI Approach	Protect and enhance environmental quality / invest in socio-economic enhancements.
Overarching principles – Environment	Enhance stream and river corridors. Protect ancient countryside character. Protect and enhance the ancient woodland habitats of the Wyre Forest. Enhance and expand acid grassland habitats.
Overarching principles – Socio-Economic	Enhance economic wealth and address health inequalities. Main economic issues: below average household income. Main health issues: respiratory, heart diseases and mental health.

Severn Valley North

Name	Description
Strategic GI Approach	Protect and enhance environmental quality / invest in socio-economic enhancements.
Overarching principles – Environment	Restoration of the Severn floodplain.
Overarching principles – Socio-Economic	Enhance economic wealth and address health inequalities. Main economic issues: below average household income. Main health issues: heart diseases.

North Worcestershire Hills

Name	Description
Strategic GI Approach	Protect and enhance environmental quality / support socio-economic enhancements.
Overarching principles – Environment	Maintain wooded character, linking and buffering existing sites.
Overarching principles – Socio-Economic	Primary focus on supporting overall health of residents with particular focus on prevention of heart diseases, obesity and respiratory conditions in the area adjacent to Redditch. Support employment creation across the area.

Forest of Feckenham and Feckenham Wetlands

Name	Description
Strategic GI Approach	Protect and enhance environmental quality / maintain socio-economic status.
Overarching principles – Environment	Protect the traditional field patterns, boundaries and small woodlands. Enhance stream corridors.
Overarching principles – Socio-Economic	Maintain the current economic performance Some improvements and prevention of health issues around heart diseases, obesity and respiratory conditions.

Lenches Ridge

Name	Description
Strategic GI Approach	Protect and enhance environmental quality / support socio-economic enhancements.
Overarching principles – Environment	Enhance the functionality and habitats of the Avon floodplain.
Overarching principles – Socio-Economic	Support both health and economic wealth. Aim to increase household income and decrease unemployment, and address health deprivation, concentrating on heart diseases, obesity and mental health.

Bredon

Name	Description
Strategic GI Approach	Protect and enhance environmental quality / support socio-economic enhancements.
Overarching principles – Environment	Protect and enhance Bredon Hill National Nature Reserve and enhance links between areas of biodiversity interest through links and buffering.
Overarching principles – Socio-Economic	Primary focus on enhancements to support overall health of residents. Support for employment creation.

Severn Valley South

Name	Description
Strategic GI Approach	Protect and enhance environmental quality / support socio-economic enhancements.
Overarching principles – Environment	Protect and enhance the Severn Valley floodplain and its functionality.
Overarching principles – Socio-Economic	Increase economic wealth and address health inequalities. Economic enhancements including employment creation, household income improvements and overall economic deprivation reduction in areas beyond the M5 corridor. Health improvements for heart diseases, respiratory diseases and obesity. Address overall health deprivation.

Bushley

Name	Description
Strategic GI Approach	Protect and enhance environmental quality / support socio-economic enhancements.
Overarching principles – Environment	Maintain wooded character, linking and buffering existing sites.
Overarching principles – Socio-Economic	Primary focus on enhancements to support overall health of residents. Support improvements to household income.

Malvern Chase and Commons

Name	Description
Strategic GI Approach	Protect and enhance environmental quality / support socio-economic enhancements.
Overarching principles – Environment	Protect and enhance acid and neutral grassland habitats and wooded landscape of orchards, woodlands and scrub.
Overarching principles – Socio-Economic	Support the tackling of and prevention of obesity, respiratory and heart disease beyond the area between the A44 and A4103. Support improvements to household income.

Hagley Hinterland

Name	Description
Strategic GI Approach	Restore environmental quality / maintain socio-economic status.
Overarching principles – Environment	Maintain and restore habitat connectivity. Protect and restore acid grassland and wooded habitats.
Overarching principles – Socio-Economic	Maintain both health and economic wealth. The main economic issues are low household incomes for most of this area and unemployment and economic-related deprivation to the north of Kidderminster. The health issues include above-average obesity, heart and respiratory diseases.

Hollywood and Wythall

Name	Description
Strategic GI Approach	Restore environmental quality / support socio-economic enhancements.
Overarching principles – Environment	Protect and restore historic pattern of small enclosures.
Overarching principles – Socio-Economic	Primary focus on reduction in the incidence of health problems related to heart disease.

Bromsgrove-Redditch Corridor

Name	Description
Strategic GI Approach	Restore environmental quality / support socio-economic enhancements.
Overarching principles – Environment	Protect and restore the ancient countryside character.
Overarching principles – Socio-Economic	Primary focus on overall health-related improvements.

Mid Worcestershire Corridor

Name	Description
Strategic GI Approach	Restore environmental quality / support socio-economic enhancements.
Overarching principles – Environment	Protect and restore neutral grasslands, orchards and semi-natural ancient woodland, wet woodland and stream corridors.
Overarching principles – Socio-Economic	Support enhancements to both health and economic wealth. Address health issues including heart diseases, obesity and respiratory problems. Low household income and unemployment issues are the major economic issue.

East Wychavon

Name	Description
Strategic GI Approach	Restore environmental quality / maintain socio-economic status.
Overarching principles – Environment	Protect and restore hedges and field boundaries and hedge, ditch and watercourse trees.
Overarching principles – Socio-Economic	Primary focus on above-average incidence of health problems related to heart disease.

Bow Brook South

Name	Description
Strategic GI Approach	Restore environmental quality / invest in socio-economic enhancements.
Overarching principles – Environment	Enhance the Bow Brook, its water quality and valley.
Overarching principles – Socio-Economic	Enhancements across both health and economic GI related issues.

Evesham Valley

Name	Description
Strategic GI Approach	Restore environmental quality / invest in socio-economic enhancements.
Overarching principles – Environment	Protect and restore the River Avon corridor and functional floodplain habitats.
Overarching principles – Socio-Economic	Enhancements across both health and economic GI related issues.

Broadway and Cotswold Corridor

Name	Description
Strategic GI Approach	Restore environmental quality / support socio-economic enhancements.
Overarching principles – Environment	Protect and restore the characteristic Cotswold landscape and its key features including neutral and calcareous grasslands and field boundaries.
Overarching principles – Socio-Economic	Primary focus on overall health related improvements. Support opportunities to address low household incomes.

Carrant Brook Corridor

Name	Description
Strategic GI Approach	Restore environmental quality / maintain socio-economic status.
Overarching principles – Environment	Protect and enhance the Carrant Brook, its water quality and stream side habitats.
Overarching principles – Socio-Economic	Opportunities for enhancements to both health and economic wealth. Address health issues including heart diseases and respiratory problems. Low household income and unemployment issues are the major economic issues.

Longdon Hinterland

Name	Description
Strategic GI Approach	Protect and enhance environmental quality / invest in socio-economic enhancements.
Overarching principles – Environment	Protect and restore the Longdon and Bushley Brook corridors.
Overarching principles – Socio-Economic	Enhancements across both health and economic GI related issues.

Kempsey Plain

Name	Description
Strategic GI Approach	Restore environmental quality / invest in socio-economic enhancements.
Overarching principles – Environment	Protect and restore neutral grassland habitats and traditional field boundaries.
Overarching principles – Socio-Economic	Enhancements across both health and economic GI related issues.

River Teme Corridor

Name	Description
Strategic GI Approach	Restore environmental quality / maintain socio-economic status.
Overarching principles – Environment	Protect and restore multi-functional river valley corridor and floodplain.
Overarching principles – Socio-Economic	Opportunities to reduce the incidence of health problems related to heart disease.

Severn Meadows Corridor

Name	Description
Strategic GI Approach	Restore environmental quality / invest in socio-economic enhancements.
Overarching principles – Environment	Protect and enhance multi-functional Severn river corridor.
Overarching principles – Socio-Economic	Opportunities to reduce the incidence of health inequalities and increase household incomes.

Eardiston

Name	Description
Strategic GI Approach	Restore environmental quality / support socio-economic enhancements.
Overarching principles – Environment	Protect and restore networks and connectivity to the wider Teme Valley landscape.
Overarching principles – Socio-Economic	Support enhancements to both health and economic wealth. Address health issues including heart diseases and respiratory problems. Low household income and unemployment issues are the major economic issues.

Bewdley Fringe

Name	Description
Strategic GI Approach	Restore environmental quality / invest in socio-economic enhancements.
Overarching principles – Environment	Protect and enhance multi-functional Severn river corridor.
Overarching principles – Socio-Economic	Opportunities to reduce the incidence of health inequalities and increase household incomes.

Birchen Coppice

Name	Description
Strategic GI Approach	Restore environmental quality / invest in socio-economic enhancements.
Overarching principles – Environment	Protect and restore networks and connectivity to the wider Teme Valley and Wyre Forest landscape.
Overarching principles – Socio-Economic	Opportunities to reduce the incidence of health inequalities and increase household incomes.

Birlingham

Name	Description
Strategic GI Approach	Restore environmental quality / maintain socio-economic status.
Overarching principles – Environment	Protect and restore the River Avon corridor and functional floodplain habitats.
Overarching principles – Socio-Economic	Opportunities to reduce the incidence of health inequalities and increase household incomes.

Crowle

Name	Description
Strategic GI Approach	Further investigation required.
Overarching principles – Environment	Restore and create wet pasture and marshland.
Overarching principles – Socio-Economic	-

Defford

Name	Description
Strategic GI Approach	Further investigation required.
Overarching principles – Environment	Restore and create landscape links and connectivity to estate farmlands landscape.
Overarching principles – Socio-Economic	-

Bickmarsh

Name	Description
Strategic GI Approach	Further investigation required.
Overarching principles – Environment	Maintain traditional orchards, restore connectivity.
Overarching principles – Socio-Economic	-

Long Marston

Name	Description
Strategic GI Approach	Further investigation required.
Overarching principles – Environment	Maintain traditional orchards, restore connectivity.
Overarching principles – Socio-Economic	-

Appendix D: Priorities and delivery

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
Teme Valley & Wyre Forest	High	Medium/Low	Strategic area of search: Wyre Forest extension	■ Enhance stream and river corridors ■ Protect ancient countryside character ■ Protect and enhance the ancient woodland habitats of the Wyre Forest ■ Enhance and expand acid grassland habitats ■ Provision of a strategic asset for access and recreation	■ New development proposed in emerging Local Plan: » Economic: Malvern Technology Park ■ Local Transport Plan: Upton to Malvern cycle route ■ Agri-environment funding ■ England Woodland Grant Scheme	**Average:** Protect and enhance environmental quality / invest in socio-economic enhancements
Severn Valley North	High	Medium/Low	Neighbourhood/ local	■ Restoration of the Severn floodplain	■ Agri-environment funding ■ England Woodland Grant Scheme ■ New development proposed in emerging Local Plan ■ Housing at Gwillams Farm site	**Average:** Protect and enhance environmental quality / invest in socio-economic enhancements

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
North Worcestershire Hills	High	Medium	Strategic area of search: Lickey Hills extension	■ Maintain wooded character, linking and buffering existing sites ■ Provision of a strategic asset for access and recreation	■ New development proposed in emerging Local Plan: » Redditch Eastern Gateway ■ Proposed 8-Hills Regional Park ■ Agri-environment funding ■ England Woodland Grant Scheme	**Good:** Protect and enhance environmental quality / support socio-economic enhancements
Forest of Feckenham & Feckenham Wetlands	High	Medium/High	Neighbourhood/ local	■ Protect the traditional field patterns, boundaries and small woodlands. ■ Enhance stream/ordinary watercourse corridors.	■ New development proposed in emerging Local Plan Housing: » Webheath » Brockhill East » Foxlydiate » Brockhill ■ Agri-environment funding ■ England Woodland Grant Scheme	**Premium:** Protect and enhance environmental quality / maintain socio-economic status

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
Lenches Ridge	High	Medium	Neighbourhood/local	■ Enhance the functionality and habitats of the Avon floodplain.	■ New development proposed in emerging Local Plan: » Housing: Cheltenham Road, » Pershore Road ■ Agri-environment funding ■ England Woodland Grant Scheme	**Good:** Protect and enhance environmental quality / support socio-economic enhancements
Bredon	High	Medium	Neighbourhood/local	■ Protect and enhance Bredon Hill National Nature Reserve	■ Agri-environment funding ■ England Woodland Grant Scheme	**Good:** Protect and enhance environmental quality / support socio-economic enhancements

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
Severn Valley South	High	Medium	Neighbourhood/local	■ Protect and enhance the Severn Valley floodplain and its functionality	■ New development proposed in emerging Local Plan: » Housing: Worcester South » Station Road/ Wyre Road ■ Agri-environment funding ■ England Woodland Grant Scheme ■ Emerging Minerals Local Plan	**Good:** Protect and enhance environmental quality / support socio-economic enhancements
Bushley	High	Medium	Neighbourhood/local	■ Protect and enhance the irregular field pattern, boundary hedges and orchard habitats.	■ Agri-environment funding ■ England Woodland Grant Scheme	**Good:** Protect and enhance environmental quality / support socio-economic enhancements
Malvern Chase and Commons	High	Medium	Neighbourhood/local	■ Protect and enhance acid and neutral grassland habitats and wooded landscape of orchards, woodlands and scrub.	■ Agri-environment funding ■ England Woodland Grant Scheme	**Good:** Protect and enhance environmental quality / support socio-economic enhancements

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
Hagley Hinterland	Medium	Medium/High	Neighbourhood/local	■ ■ Maintain and restore habitat connectivity. Protect and restore acid grassland and wooded habitats.	■ New development proposed in emerging Local Plans: 　» Housing: Kidderminster and Stourbridge Road, Hagley ■ Agri-environment funding ■ England Woodland Grant Scheme	**Good:** Restore environmental quality / maintain socio-economic status
Hollywood & Wythall	Medium	Medium	Neighbourhood/local	■ Protect and restore historic pattern of small enclosures	■ New development proposed in emerging Local Plan ■ Housing: Bleakhouse Farm, Wythall ■ Proposed 8-Hills Regional Park ■ Agri-environment funding ■ England Woodland Grant Scheme	**Average:** Restore environmental quality / support socio economic enhancements

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
Bromsgrove – Redditch Corridor	Medium	Medium	Neighbourhood/ local	▪ Protect and restore the ancient countryside character.	▪ New development proposed in emerging Local Plan: » Housing: Perryfields ▪ Bromsgrove Brooks project ▪ Agri-environment funding ▪ England Woodland Grant Scheme	**Average:** Restore environmental quality / support socio economic enhancements

Mid-Worcestershire Corridor	Medium	Medium	Strategic area of search: Worcester-Droitwich corridor
			
			Strategic area of search: Hallow Riverside corridor
				▪ Protect and restore neutral grasslands, orchards and semi-natural ancient woodland, wet woodland and stream corridors.
				▪ Provision of strategic asset for access and recreation
					▪ New development proposed in emerging Local Plan:
					  » Housing: Copcut Lane
					  » Land adjacent to wagon Works
					  » Economic: Worcester Technology Park
					▪ Bromsgrove Brooks project
					▪ Agri-environment funding
					▪ England Woodland Grant Scheme
						Average:
						Restore environmental quality / support socio economic enhancements

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
East Wychavon	Medium	High	Neighbourhood/ local	■ Protect and restore hedges and field boundaries and hedge, ditch and watercourse trees.	■ Agri-environment funding ■ England Woodland Grant Scheme	**Good:** Restore environmental quality / maintain socio-economic status
Bow Brook South	Medium	Low	Neighbourhood/ local	■ Enhance the Bow Brook, its water quality and valley.	■ Agri-environment funding ■ England Woodland Grant Scheme	**Average:** Restore environmental quality / invest in socio-economic enhancements
Evesham Valley	Medium	Medium/Low	Neighbourhood/ local	■ Protect and restore the River Avon corridor and functional floodplain habitats.	■ Agri-environment funding ■ England Woodland Grant Scheme	**Average:** Restore environmental quality / invest in socio-economic enhancements
Broadway & Cotswold Corridor	Medium	Medium	Neighbourhood/ local	■ Protect and restore the characteristic Cotswold landscape and its key features including neutral and calcareous grasslands and field boundaries.	■ Agri-environment funding ■ England Woodland Grant Scheme	**Average:** Restore environmental quality / support socio economic enhancements

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
Carrant Brook Corridor	Medium	Medium/High	Neighbourhood/local	■ Protect and enhance the Carrant Brook, its water quality and stream side habitats.	■ Agri-environment funding ■ England Woodland Grant Scheme	**Good:** Restore environmental quality / maintain socio-economic status
Longdon Hinterland	Medium	Medium	Neighbourhood/local	■ Protect and restore the Longdon and Bushley Brook corridors.	■ New development proposed in Local Transport Plan: » Upton to Malvern cycle route » Upton to Uckinghall cycle route » Tewskesbury to Upton cycle route ■ Agri-environment funding ■ England Woodland Grant Scheme	**Average:** Restore environmental quality / support socio economic enhancements
Kempsey Plain	Medium	Medium/Low	Strategic area of search: Clifton Water Park	■ Protect and restore neutral grassland habitats and traditional field boundaries. ■ Provision of a strategic asset for access and recreation	■ Agri-environment funding ■ England Woodland Grant Scheme ■ Emerging Minerals Local Plan	**Average:** Restore environmental quality / invest in socio-economic enhancements

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
River Teme Corridor	Medium	High	Neighbourhood/ local	■ Protect and restore multi-functional river valley corridor and floodplain.	■ Agri-environment funding ■ England Woodland Grant Scheme	**Good:** Restore environmental quality / maintain socio-economic status
Severn Meadows Corridor	Medium	Low	Neighbourhood/ local	■ Protect and enhance multi-functional Severn river corridor.	■ New development proposed in emerging Local Plan: ■ Housing: West Worcester ■ Agri-environment funding ■ England Woodland Grant Scheme ■ Emerging Minerals Local Plan	**Average:** Restore environmental quality / invest in socio-economic enhancements
Eardiston	Medium	Medium	Neighbourhood/ local	■ Protect and restore networks and connectivity to the wider Teme Valley landscape.	■ Agri-environment funding ■ England Woodland Grant Scheme	**Average:** Restore environmental quality / support socio-economic enhancements

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
Bewdley Fringe	Medium	Low	Neighbourhood/ local	■ Protect and enhance multi-functional Severn River corridor.	■ Agri-environment funding ■ England Woodland Grant Scheme	**Average:** Restore environmental quality / invest in socio-economic enhancements
Birchen Coppice	Medium	Low	Neighbourhood/ local	■ Protect and restore networks and connectivity to the wider Teme Valley and Wyre Forest landscape.	■ New development proposed in emerging Local Plan: ■ Economic: South Kidderminster Enterprise Park	**Average:** Restore environmental quality / invest in socio-economic enhancements
Birlingham	Medium	High	Neighbourhood/ local	■ Protect and restore the River Avon corridor and functional floodplain habitats.	■ Agri-environment funding ■ England Woodland Grant Scheme	**Good:** Restore environmental quality / maintain socio-economic status
Crowle	Low	High	Neighbourhood/ local	■ Restore and create wet pasture and marshland	■ Agri-environment funding ■ England Woodland Grant Scheme	Further investigation required
Defford	Low	Medium	Neighbourhood/ local	■ Restore and create landscape links and connectivity to estate farmlands landscape	■ Agri-environment funding ■ England Woodland Grant Scheme	Further investigation required

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
Bickmarsh	Low	Medium	Neighbourhood/ local	■ Maintain traditional orchards, restore connectivity	■ Agri-environment funding ■ England Woodland Grant Scheme	Further investigation required
Long Marston	Low	Medium	Neighbourhood/ local	■ Maintain traditional orchards, restore connectivity	■ Agri-environment funding ■ England Woodland Grant Scheme	Further investigation required
Bewdley	Unsurveyed	Insufficient detail	Insufficient detail	■ Insufficient detail	■ Small-scale new development proposed in Local Plan , housing and economic development	Further investigation required
Bromsgrove	Unsurveyed	Insufficient detail	Insufficient detail	■ Insufficient detail	■ New development proposed in emerging Local Plan, housing and economic development	Further investigation required
Droitwich	Unsurveyed	Insufficient detail	Insufficient detail	■ Insufficient detail	■ New development proposed in emerging Local Plan, housing and economic development	Further investigation required
Evesham	Unsurveyed	Insufficient detail	Insufficient detail	■ Insufficient detail	■ New development proposed in emerging Local Plan, housing and economic development	Further investigation required

ECA	Quality of the Natural Environment	Socio-economic status	Recreation and access need	GI priority	Delivery mechanisms	Overall approach
Kidderminster	Unsurveyed	Insufficient detail	Insufficient detail	■ Insufficient detail	■ New development proposed in Local Plan, housing and economic development	Further investigation required
Malvern	Unsurveyed	Insufficient detail	Insufficient detail	■ Insufficient detail	■ New development proposed in emerging Local Plan, housing and economic development	Further investigation required
Pershore	Unsurveyed	Insufficient detail	Insufficient detail	■ Insufficient detail	■ New development proposed in emerging Local Plan, housing and economic development	Further investigation required
Redditch	Unsurveyed	Insufficient detail	Insufficient detail	■ Insufficient detail	■ New development proposed in emerging Local Plan, housing and economic development	Further investigation required
Stourport	Unsurveyed	Insufficient detail	Insufficient detail	■ Insufficient detail	■ New development proposed in Local Plan, housing and economic development	Further investigation required
Upton upon Severn	Unsurveyed	Insufficient detail	Insufficient detail	■ Insufficient detail	■ New development proposed in emerging Local Plan, housing and economic development	Further investigation required
Worcester	Unsurveyed	Insufficient detail	Insufficient detail	■ Insufficient detail	■ New development proposed in emerging Local Plan, housing and economic development	Further investigation required

Appendix E: Other Relevant Documents and Information

Green Infrastructure Strategy for Herefordshire (2010)
https://www.herefordshire.gov.uk/downloads/file/2063/herefordshire-green-infrastructure-strategy

Shropshire Green Infrastructure Strategy (2020)
https://shropshire.gov.uk/media/15654/green-infrastructure-strategy-main-report.pdf

Warwickshire, Coventry & Solihull Sub-Regional Green Infrastructure Strategy (2013)
https://api.warwickshire.gov.uk/documents/WCCC-372917633-2595

West Midlands Natural Environment Plan 2021-2026
https://www.wmca.org.uk/media/5102/natural-environment-plan.pdf

South Worcestershire Open Space Assessment (2019)
Open Space Assessment - South Worcestershire Development Plan (swdevelopmentplan.org)

Wyre Forest District Council Local Plan review evidence base for open space and green infrastructure
http://archive.wyreforestdc.gov.uk/local-plan-(2016-2036)-background-documents/local-plan-background-documents-open-space-and-green-infrastructure.aspx

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Gear Change: A bold vision for cycling and walking. Department for Transport.
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https://www.gov.uk/government/collections/water-abstraction-licensing-strategies-cams-process

National Flood and Coastal Erosion Risk Management Strategy for England
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National Standards for Sustainable Drainage
Sustainable Drainage Systems: Non-statutory technical standards for sustainable drainage systems (publishing.service.gov.uk)

South Worcestershire Strategic Flood Risk Assessment
https://www.swdevelopmentplan.org/swdp-review/swdp-review-evidence-base/strategic-flood-risk-assessment

Bromsgrove and Redditch Strategic Flood Risk Assessments
https://www.worcestershire.gov.uk/downloads/download/798/strategic_flood_risk_assessments_sfras

Wyre Forest District Council Local Plan review evidence base for Flood Risk, Water Management and Climate Change
http://archive.wyreforestdc.gov.uk/local-plan-(2016-2036)-background-documents/local-plan-background-documents-flood-risk,-water-management-and-climate-change.aspx

Worcestershire Local Flood Risk Management Strategy
https://www.worcestershire.gov.uk/info/20236/flood_risk_management/1046/plans_policies_and_strategies/2

Worcestershire Rights of Way Improvement Plan (2016)
Local Transport Plan (LTP) | Worcestershire County Council

Worcestershire Local Transport Plan 4 (2017)
Local Transport Plan (LTP) | Worcestershire County Council

Worcestershire County Council Renewable Energy Strategy 2015-2020
https://www.worcestershire.gov.uk/info/20014/planning/1161/sustainable_development_research_documents/3

Worcestershire Minerals Local Plan
https://www.worcestershire.gov.uk/minerals

Worcestershire Waste Core Strategy (2012)
https://www.worcestershire.gov.uk/info/20015/planning_policy_and_strategy/311/waste_core_strategy

Worcestershire LEP Energy Strategy
https://www.wlep.co.uk/wp-content/uploads/P3695-Worcestershire-Energy-Strategy-Strategy-with-glossary.pdf

Worcestershire's Plan for Growth 2020-2040
https://www.wlep.co.uk/wp-content/uploads/WLEP-Plan-for-Growth-2020-2040-FULL-VERSION.pdf

Worcestershire Landscape Character Assessment
https://www.worcestershire.gov.uk/info/20014/planning/1006/landscape_character_assessment

Emerging Worcestershire Health and Well-being Board Strategy
https://www.worcestershire.gov.uk/HWBStrategy2022

Appendix F: Glossary

Accessible Natural Greenspace Standard (ANGSt) – tool developed by Natural England based on the minimum distances people would travel to green spaces.

Agri-environment schemes – funding schemes designed to reward environmental land management by farmers and land managers.

Air Quality Management Areas (AQMAs) – areas declared by local authorities in which national air quality objectives are not likely to be achieved. AQMAs could be just one or two streets, or could be much bigger.

Blue infrastructure – otherwise known as water infrastructure, is a network of water assets such as rivers, ponds and ditches. Blue infrastructure is concerned with use, quantity and quality of water and other water-related issues including flood risk.

Biodiversity Net Gain (BNG) – BNG is an approach to development and/or land management that aims to leave the natural environment in a measurably better state than it was beforehand. The Environment Act 2021 places a BNG mandate on local planning authorities to deliver a minimum 10% net gain for biodiversity through planning.

Carbon sequestration – the process of capturing and storing atmospheric carbon dioxide. References to carbon sequestration in this document are to biological sequestration, where CO_2 is transferred from the atmosphere to vegetation, either above ground or to organic matter within the soil.

Community Development Trusts (CDTs) – CDTs are independent, not for profit organisations which aim to respond to local needs and are intended to bring about lasting social, economic and environmental benefits to the local community. The overall aims of a CDT include the ownership, maintenance and effective management of GI and other facilities, encouraging healthy lifestyles and the use of sustainable transport by residents and businesses and encouragement of community cohesion.

Community Infrastructure Levy – a new levy that local authorities in England and Wales can choose to charge on new developments in their area. The levy is designed to be fairer, faster and more transparent than the system of agreeing planning obligations between local councils and developers under section 106 of the Town and Country Planning Act 1990 (although Section 106 agreements will remain, albeit in a more limited role).

Country Park – accredited natural green spaces which have been granted Country Park status by Natural England after demonstrating 15 essential criteria and 10 desirable criteria. Some of the essential criteria include: at least 10 ha in size, readily accessible to the population which they intend to serve, entry free of charge, must predominantly consist of natural or semi-natural landscape, buildings must account for less than 5% of the land, and they should provide opportunities for the local community to have an influence over the management and development of the site.

Ecological network - representation of the interactions in an ecosystem, in which species are connected. Ecological networks are used to describe and compare the structures of real ecosystems, while network models are used to investigate the effects of network structure on properties such as ecosystem stability.

Endowments - a transfer of money and/or property donated to an institution. The total value of an institution's investments is often referred to as the institution's endowment and is typically organised as a public charity, private foundation, or trust.

Fluvial flooding – flooding which occurs in the floodplains of rivers when the capacity of water courses is exceeded as a result of rainfall or snow and ice melts within catchment areas further upstream.

Green economy – business activity which delivers economic growth whilst reducing environmental and ecological risks and contributing to human wellbeing. The term is usually used in relation to economic sectors such as renewable energy, sustainable transport, water and waste management.

Green Infrastructure Environmental Character Areas (ECAs) – 30 areas identified in Worcestershire, divided into three categories:

- Protect and enhance (greatest existing green infrastructure value)
- Protect and restore (medium existing green infrastructure value)
- Restore and create (lowest existing green infrastructure value)

The quality of these areas has been considered in terms of landscape character, biodiversity and historic environment, to arrive at score for each ECA.

Green roof – (also known as a living roof) is a roof on which vegetation is intentionally grown and/or habitats for wildlife are established. Green roofs provide different types of biodiversity habitats, water storage capacity, flood alleviation and energy saving potential.

Grey infrastructure – traditional infrastructure, e.g. roads, rail, sewers, pipes, etc.

Historic Environment Character Zones - strategic character areas derived from an integrated assessment of the historic environment. The assessment amalgamated data from the county Historic Environment Record (HER) with landscape character mapping to generate zones of distinctive character, which included an assessment of potential and sensitivity to change.

Historic Environment Characterisation - is the over-arching term for a suite of integrated or specific historic environment characterisation projects that include: Historic Environment Character Zones (HECZ), Historic Landscape Characterisation (HLC), Villages Historic Environment Resource Assessment (VHERA) and Historic Farmsteads Characterisation (HFC).

Hypothecated taxes - the dedication of the revenue from a specific tax for a particular expenditure purpose (also known as ring-fencing).

Informal recreation spaces - are flexible recreation spaces. They typically include a combination of flat open grassy areas, play spaces, picnic zones or benches.

Lead Local Flood Authority (LLFA) - Lead Local Flood Authorities (unitary authorities or county councils) are responsible for developing, maintaining and applying a strategy for local flood risk management in their areas and for maintaining a register of flood risk assets. They also have lead responsibility for managing the risk of flooding from surface water, groundwater and ordinary watercourses.

Local Enterprise Partnership (LEP) - voluntary partnerships between local authorities and businesses formed in 2011 by the Department for Business, Innovation and Skills. LEPs help determine local economic priorities and lead economic growth and job creation within their local areas. In Worcestershire there are two LEPs: the Worcestershire LEP covers all of the county, whilst the northern districts/boroughs of Wyre Forest, Bromsgrove and Redditch also sit within the Greater Birmingham and Solihull LEP.

Local Nature Partnership (LNP) - partnerships of a broad range of local organisations, businesses and people who aim to help bring about improvements in their local natural environment.

Local Nature Recovery Strategy – a new, England-wide system of spatial strategies that will establish priorities and map proposals for specific actions to drive nature's recovery and provide wider environmental benefits. Introduced as part of the Environment Act 2021.

Local Plans – a plan prepared by a local planning authority which sets the rules for how the local area will develop over time. The Local Plan, along with any Neighbourhood Plans, forms the overall development plan for the local area. Planning decisions must normally be taken in accordance with the development plan.

Lower Super Output Areas (LSOA) – a sub-area of the Super Output Area, a geographical area to facilitate the calculation of the Indices of Deprivation. LSOAs typically contain 4 to 6 Output Areas, with a total population of around 1500.

Passive solar gain – use of the sun's energy for the heating and cooling of living spaces. In this approach, the building itself or some element of it takes advantage of natural energy characteristics in materials and air created by exposure to the sun.

Payment for Ecosystem Services (PES) - payments to land managers or owners to undertake actions that increase the levels of desired ecosystem services.

Pluvial flooding - surface water flooding caused by rainwater run-off from urban and rural land with low absorbency.

Public Rights of Way (PROW) – routes via which the public can pass over land at all times. PROW are classified into four main groups, with different users permitted on each. These are: Footpaths, Bridleways, Restricted Byways and Byways Open to All Traffic. Additions or modifications to the Definitive Map of PROW are made by legal order under the Wildlife and Countryside Act 1981, the Highways Act 1980 or the Town and Country Planning Act 1990.

Section 106 Agreements – Planning obligations under Section 106 of the Town and Country Planning Act 1990 (as amended), commonly known as s106 agreements, are mechanisms which make an otherwise unacceptable development proposal acceptable in planning terms. They are focused on site specific mitigation of the impact of development. S106 agreements are often referred to as 'developer contributions', along with highway contributions and the Community Infrastructure Levy.

SuDS Approval Body (SAB) - under the Flood and Water Management Act 2010 the SAB will be an organisation within County Councils and Unitary Authorities specifically established to deal with the design, approval and adoption of sustainable urban drainage systems (SuDS) within any new development consisting of two or more properties. This new role will commence once the relevant parts of the Act are enacted.

Super Output Areas (SOA) - are a set of geographical areas developed following the 2001 census, initially to facilitate the calculation of the Indices of Deprivation. They are an aggregation of adjacent Output Areas with similar social characteristics.

Supplementary Planning Documents (SPDs) - provide additional information on planning policies in a development plan.

Sustainable development - Sustainable development means encouraging economic growth while protecting the environment and improving people's quality of life - all without affecting the ability of future generations to do the same.

Sustainable Drainage Systems (SuDS) - a sequence of water management practices and facilities designed to drain surface water in a manner that will provide a more sustainable approach than the conventional practice of routing run-off through a pipe to a watercourse.

Water Storage Reservoirs – are reservoirs to store water at times of high flows to provide a secure resource for the following dry period.

Woodland Access Standard (WASt) – an assessment of the extent of permissively accessible woodland in the UK

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