# Green Infrastructure Strategy for Bilbrook: Evidence, Standards and Key Priorities



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#### 1 Summary of context, evidence and key recommendations

The national evidence shows that Bilbrook, despite being urban edge/rural has very low levels of accessible natural greenspace when compared to national levels, serving probably only c8% of the current population.

It is ranked in the second lowest, out of nine, national categories for access within open space. Few of the actively used routes are declared Public Rights of Way. The informal and formal network has significant breakages especially serving the east and south of the main settlement.

The village's residents within central and western areas have lower incomes and employment levels. Age distribution is generally even across the parish. Areas of heat risk exist in the centre and west.

Only one area (Pendeford Mill Local Nature Reserve) has statutory protection for nature conservation, with three small areas of Ancient Woodland also present in Bilbrook. Only two sites receive active biodiversity management. Flood risk mapping demonstrates concerns both from river and surface sources which affects dwellings and industry.

#### **Key recommendations**

- Make a plan: Identify specific actions and opportunities to deliver the agreed Standards and Key Projects set out in this Strategy. These may be achieved through developments and attract external funding to deliver improvements over time.
- **Maximise public use of existing open space**: Declare Public Rights of Way status on long established paths and join up the green network with public access especially in the east and south west of the main settlement.
- Climate-proof the settlement: Increase tree shading of hard surfaces, especially within the communities of Central and East Bilbrook. Identify and deliver sustainable drainage solutions in the Woodman/Duck Lane area & Dam Mill and increase floodplain capacity in the north west and in the western industrial area.
- **Protect, maintain and improve biodiversity**: Increase coverage of appropriate nature conservation designations, such as Local Nature Reserve, that protects habitats and provides public access. Identify key actions to maintain and improve biodiversity connectivity of the green network.

#### 2 Introduction to this Strategy and Green Infrastructure

The following Strategy document is to act as a foundation for a Delivery Plan which will enact its findings. This strategy therefore aims to set Standards, inform policy formation within the Bilbrook Neighbourhood Plan and identify key priorities for intervention via stakeholders.

Green Infrastructure can be described as the benefits to human communities from natural systems. These can include physical benefits such as drainage, cooling, absorbing pollution, access routes and materials such as food and timber. It also includes more social benefits such as recreation, health and wellbeing as well as providing support for other assets valued by communities such as biodiversity, landscape and heritage features.

Green Infrastructure can take many forms and be active at many scales. It can be a single tree shading hot tarmac or a road verge intercepting water from speeding into a drain to reduce flooding. It can also be a nature reserve used for recreation or a river system connecting wildlife across regions.

Inevitably, benefits will not be shared equally across the residents of Bilbrook. Some areas will be better served due to their proximity to Green Infrastructure assets. Similarly, some people will be more reliant on them for their basic health and wellbeing. It is widely acknowledged that those who are young, elderly, in poor health or on lower incomes are generally more reliant on local environmental services.

Therefore, the breadth of functions and forms of Green Infrastructure brings difficulties in assessing and mapping. To aid robust measure and evaluation, this Strategy has looked at national datasets to assess the relative strengths and weaknesses of current Green Infrastructure within Bilbrook, relative to other communities across England. These will form the foundation for the general conclusions. Additional local information will be used to add to this where possible, however it will be clearly stated where this is used.

To aid brevity of this document, detailed explanations of national policies and methodologies will not be included here. However, links to guidance will be given throughout the text and in Appendix 5. To aid flow of the document, mapping of evidence is presented within Appendix 1 and asset/priority mapping derived from this in Appendix 2.

#### 3 Bilbrook's Context

Bilbrook is a parish of c1,400km<sup>2</sup> and home to c4,700 people. It is located in South Staffordshire and separated by a thin area of Greenbelt (c350m at narrowest between dwellings) from the north west edge of the West Midlands conurbation which is home to nearly 3m people. It is immediately bordered by Codsall, a larger village (c7,500 residents) to the west.

The village includes the main settlement to the west, a park home community in the centre and industrial areas to the east. Open land is present on the north, east and south which includes both rivers and a canal. Agricultural land is used for both arable and pasture.

The village is expected to grow significantly. The South Staffordshire draft Local Plan is preparing for c750 new dwellings joining the east of the main village and the industrial area is increasing to the west. This expected to bring c1,725 new residents into the village (at 2.3 people per dwelling), to

bring a population of 6,425. This Strategy informs the Neighbourhood Plan which will facilitate this development.

Locally given names for open spaces referred to in this strategy are presented in map M4 in Appendix 1. Boundaries, aerial imagery and other context mapping is also presented in Appendix 1.

#### 4 Data of current Green Infrastructure provision

Four main sources of data have been used from national organisations. It is recognised that some mapping will have local inaccuracies. However, in personal communications with the Natural England team, according to their analysis these will be relatively uniform across England. Therefore, in accordance with their advice, no additional GIS based modelling has been carried out.

In addition to this, general observations around habitat connectivity will be noted and local understanding of publically owned land mapped.

#### 4.1 Open Space and Access

Natural England's Green Infrastructure Mapping Tool contains many related datasets including open space and access (<u>https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Map.aspx</u> accessed on 14th February, 2024). These are presented in the following table and in maps A1, A2, A3, A4 and A5 within Appendix 1.

This online GIS tool is specifically designed to help decision making around the provision of Green Infrastructure within England. Some datasets are direct mapping of assets and others are buffers or scores based upon provision.

Green Infrastructure Measure	Results/Value for majority of	Comments on context
	Bilbrook	
Green Infrastructure typologies	The distribution shows main amenity areas to the east of the village core and strong water corridors and wooded corridor following the River Penk.	This shows the expected distribution of more amenity based accessible open space close to the main settlement. Some omissions are noted to this dataset, especially Jubilee Wood.
Blue Infrastructure and flooding	Canal and watercourses shown. Flooding adjacent to both Moat Brook and River Penk. Surface water flooding within settlement especially around Dam Mill & Woodman/Duck Lane and from watercourses at Millennium Way estate &	North and east of the parish have stronger blue infrastructure, however flooding exists along these and within the settlement.

	former Boulton & Paul's industrial site. A cluster of drainage ponds is present within i54 industrial area.	
Combined Greenspace and Public Rights of Way Inequalities	Class L2.	This is the second lowest grouping out of 9 national classes. This indicates very poor volumes of greenspace and public rights of way.
Coverage of Accessible Natural Greenspace Standards	Mostly no coverage or one standard met, out of six. Increases in the south east peaking around Barnhurst Sports Pitches at Aldersley High School however access to these is limited. Coverage generally relates to: Neighbourhood size site at Barnhurst Sports Pitches at Aldersley High School (>2km buffer on sites >10ha) Doorstep size site at Joeys Lane Playing Field (200m buffer on sites >0.5ha).	Poor coverage of Accessible Natural Greenspace Standards across Parish. None of the six standards are met across the entire settlement footprint of the Parish.
Ancient Woodland and statutory nature conservation sites	Three Ancient woodlands identified within parish. No other designations showing.	Very little designated nature conservation. Pendeford Mill LNR does not show as being mapped in this dataset.
Nature Close2home (% people under 16 and % people 65 and over who probably live within 300m of a natural green space)	8.17%	Is in lowest served national grouping. As age is equally distributed it is expected this will reflect the general population of the Plan area.

Table 1. Natural England Green Infrastructure measures.

#### 4.2 Temperature and air pollution

The second online GIS data tool used is from the Woodland Trust's Tree Equity Score mapping ( taken from <u>https://uk.treeequityscore.org/</u> on 14<sup>th</sup> February 2024). These are presented in the maps C1, C2, C3 and C4 within Appendix 1 and summarised in the following table.

The purpose of this data tool is to identify where tree planting can best reduce the impacts of air pollution and higher temperatures on communities. However, its data can be used more broadly given the underlying data measures used.

It combines independent data of peak temperature and two air pollutants (NO<sub>2</sub> and PM2.5). Both high temperatures and these two pollutants are known to be hazardous to human health, especially for those who are young, elderly or with underlying health conditions. Therefore, it also uses data

taken from the national Indices of Deprivation to identify the relative susceptibility of communities to these environmental hazards.

So that it can use the data from the national Indices of Deprivation it is mapped using the four Lower Level Super Output Areas (LSOAs) which are present within the Plan area. These LSOAs are mapped in Appendix 1 on map M3. Each of these have roughly similar number of residents, however they have different geographical sizes and some cross over significantly into adjoining areas:

- LSOA ID E01029613 This LSOA will be referred to here as <u>East Bilbrook</u>. This forms the northeastern area. It only includes areas within the Plan area and covers most of the land east of Lane Green School and Lane Green Road to i54. It also includes the majority of planned housing growth.
- LSOA ID E01029614 This LSOA will be referred to here as <u>West Bilbrook</u>. This is in the northwest of the Parish. It only includes areas within the Plan area and covers the Lime Tree Road and Millennium Way areas.
- LSOA ID E01029615 This LSOA will be referred to here as <u>Central Bilbrook</u>. This forms the mid-western area. It only includes areas within the Plan area and covers the Duck Lane and Wesley Road area.
- LSOA ID E01029631 This LSOA will be referred to here as <u>South Codsall</u>. This extends south of the railway line. The majority of this LSOA falls outside of the Plan area with only the area of Birches Road and Codsall Road within Bilbrook.

Green Infrastructure		Resu	ults		Comments
Measure	East	West	Central	South	
	Bilbrook	Bilbrook	Bilbrook	Codsall	
Air quality: concentration of harmful particulates (PM2.5) in μg/m <sup>3</sup>	6.8	6.6	6.6	6.6	Particulate pollution is generally even across the village.
Air quality: concentration of NO <sub>2</sub> in $\mu$ g/m <sup>3</sup>	9.7	7.5	7.4	7.5	East Bilbrook has the highest NO <sub>2</sub> level c25% higher than the rest.
Age: Ratio of those aged 0-17 or 65+, as a proportion of working age adults (18-64)	44%	43%	42%	42%	The age profile of the village is generally even.
Employment ranking out of 32,844 (from national Indices of Multiple Deprivation. 1 = most deprived)	17,526	10,282	3,954	24,986	Central and West Bilbrook have significantly lower employment levels than the rest of the village.
Health ranking out of 32,844 (from national Indices of Multiple Deprivation. 1 = most deprived)	19,992	18,849	13,965	25,717	Central Bilbrook has significantly lower health levels than the rest of the village.
Income ranking out of 32,844 (from national Indices of Multiple	19,413	12,073	5,128	25,466	Central Bilbrook has significantly lower

Deprivation. 1 = most deprived)					income levels than the rest of the village.
Heat severity: Heat disparity – compares average neighbourhood heat extremity with the local authority average to measure variance in heat severity across neighbourhoods.	+0.27°C	+0.06°C	+0.83°C	-2.16°C	Central Bilbrook suffers the worst heat disparity.
Current tree canopy cover. Tree canopy cover as a percentage of the urban area of each neighbourhood.	9%	13%	10%	21%	South Codsall has the highest canopy cover within settlement boundary.
The minimum percentage of tree canopy required to deliver the requisite benefits of trees to a neighbourhood. Based on a 30% baseline target and adjusted for population density.	36%	24%	24%	30%	East Bilbrook would require the highest increase in tree canopy (x4), Central and West Bilbrook would benefit by a doubling and South Codsall c50% additional canopy.
Priority for action: • Highest: 0-69 • High 70-79 • Moderate: 80-89 • Low: 90-99 • None: 100	Highest	Moderate	High	Low	Most of the Plan area is considered a priority for tree planting for GI service benefits, however Central and East Bilbrook would benefit the most.
Tree Equity Score	64	84	77	91	East Bilbrook has the lowest Tree Equity Score in South Staffordshire.

Table 2. Woodland Trust Heat and Air Pollution Vulnerability (Tree Equity Score).

#### 4.3 Flooding

Additional flood risk data has been accessed from <u>https://flood-map-for-planning.service.gov.uk/</u> on 15<sup>th</sup> February 2024. This shows areas of flooding from watercourses and places areas into three flood zones:

- Flood zone 1 areas have the lowest probability of flooding from rivers, estimated as being less than 0.1% in a given year.
- Flood zone 2 areas have a medium probability of flooding from rivers, estimated as being between 0.1% and 1% in a given year.
- Flood zone 3 areas have a high probability of flooding from rivers, estimated as being over 1% in a given year.

This map (B4) is provided in Appendix 1 and, as is expected, Bilbrook is generally graded as having the lowest level of risk from flooding rivers, except in proximity to the watercourses. These banksides fall into the highest risk rating. Generally the areas affected are green space however two notable exceptions are present:

- A residential area where the Moat Brook enters the parish
- An employment area south of the confluence of Moat Brook and the River Penk

It should be noted that flood zone 2 and 3 have increased in coverage since the data for Bilbrook was first viewed in 2022 (maps C5 and C6). Therefore, it is possible that they will increase again as the predictions of the increasing impacts of climate change are more accurately modelled.

#### 4.4 Nature Conservation

There are no known protected geological features within the Plan area. It is underlain by Triassic sandstone and the soils are till from the last glaciation and more recent fluvial deposits.

The distribution of wildlife rich habitat has not been robustly mapped by any national, or local organisation. However, Natural England have produced a national habitat map via the Living England project. This is available on Defra's MAGIC online mapping tool and is based on satellite-derived data. Therefore, each polygon has not been subjected to on the ground validation. Generally however, it shows the basic distribution of broad habitats. These are shown on map B1 in Appendix 1.

The majority of connected semi-natural habitat is along the canal and rivers. Moat Brook flows under the Shropshire Union Canal and then into the River Penk. The Canal also overflows into Moat Brook providing some active transference of strictly aquatic organisms. Therefore, a strong node exists between these aquatic and terrestrial wildlife corridors.

These corridors also have associated terrestrial semi-natural habitats of varying widths. It generally includes:

- Modified & Neutral grassland
- Broadleaved trees, scrub & woodland

With regard to "Core" sites, additional to these watercourses, the following are considered:

- Three Ancient woodlands are known these are within and to the north west of i54.
- Pendeford Mill Local Nature Reserve
- Pendeford Nature Walk
- Jubilee Wood

Of these only Pendeford Mill Local Nature Reserve and Jubilee Wood have active management for biodiversity. Pendeford Mill Local Nature Reserve is owned and managed by Wolverhampton City Council. Jubilee Wood is a c10yr old woodland on land owned by South Staffordshire District Council and managed by Friends of Bilbrook.

A mapped interpretation of wildlife network and core sites from the above information is given in map B4 within Appendix 1.

Some areas of traditionally amenity grassland have been receiving hay cut and collect management at The Oval & Triangle, Duck Lane and part of the Wobaston Road verge. However, no diversification

of the sward has taken place and tree planting has taken place in some of these areas which will reduce botanical diversity of the grasslands over time as the shade and likely nutrient enrichment develops.

# 4.5 Land known to be owned by Local Authorities, in private ownership with public access and land proposed for redevelopment

The above data provides an outline of assets and need. However, for improvements to take place, there will be areas which may be more possible than others due to sympathetic land ownership and/or proposed change. Some of these land parcels will be in strategic locations, others will not.

A map of current understanding of these land parcels within the main Green Infrastructure network is provided in Appendix 1 as map M4.

Key public and community owned assets include:

- The Oval
- Jubilee Wood
- Field north of Mill Stream Close
- Duck Lane Green
- Twentyman's Playing Field
- Skate Park Field
- Bilbrook Allotments
- Canal Network
- Pendeford Nature Walk
- Barnhurst Pitches adjacent to Aldersley High School
- Pendeford Mill Nature Reserve
- Open space at i54 including Clewley Coppice

Significant development is proposed both in the east for employment and in the south east, close to the village core, for housing. These are mapped along with accessible land known to be owned by councils and community organisations. It is likely that these two types of land types will offer more immediate opportunities for improvements in green infrastructure.

#### 5 National Green Infrastructure standards and Bilbrook's adopted local standards

The evaluation of Green Infrastructure has evolved over time. However, Natural England's National Green Infrastructure Framework (NGIF) sets out the current set of standards for England which will be used for this Strategy. This framework is based on five main standards which will be summarised below:

- S1: Green Infrastructure Strategy Standard
- S2: Accessible Greenspace Standard

- S3: Urban Nature Recovery Standard
- S4: Urban Greening Factor Standard
- S5: Urban Tree Canopy Cover Standard

**S1 Green Infrastructure Strategy Standard** sets out the importance of strategic planning for Green Infrastructure. This should be done in partnership with stakeholders. It enables more robust policy making and the formation of SMART Delivery Plans. It is hoped that this Strategy can act as a first step to underpin the creation of a Delivery Plan to ensure progress for key long term priorities. Appendix 4 sets out guidance for the production of the Delivery Plan.

An initial report was issued to the Bilbrook Neighbourhood Plan steering group. This group is open to all stakeholders and includes local residents and elected representatives. Responses from this have been incorporated into this Strategy.



1. Enact the Green Infrastructure Strategy for Bilbrook: Evidence, Standards and Key Priorities.

2. Create Delivery Plan to address key priorities and improve provision of Green Infrastructure.

**S2** Accessible Greenspace Standard is a set of criteria based on site size, distance from homes, volume to population ratio and site quality.

The size and distance benchmarks are given in the following table:

Name	Walking distance	Minimum size	Accessible Natural Greenspace	Approximate walking / cycling time
Doorstep Greenspace	200m	0.5ha	No	Less than 5min walk
Local Natural Greenspace	300m	2ha	Yes	5min walk
Neighbourhood Natural	1km	10ha	Yes	15min walk
Greenspace				
Wider Neighbourhood	2km	20ha	Yes	35min walk
Natural Greenspace				
District Natural Greenspace	5km	100ha	Yes	15-20min cycling
Sub-regional Natural	10km	500ha	Yes	30-40min cycling
Greenspace				

Table 3. National Greenspace Size and Distance Requirements.

The **Capacity Criteria** requires at least 3 hectares of publicly accessible greenspace per 1,000 population. (*The Local Plan is proposing to increase the population to c6,425. Therefore, this would equate to at least 19.3ha of publically accessible green space.*)

The Quality Criteria requires that accessible greenspace meets the Green Flag criteria.

#### S2 Bilbrook's Accessible Greenspace Standard:

- 1. National access standards of distance and supply are adopted. It is recognised that some of the larger sites will need to be delivered at a District and County scale, however given the paucity locally there is evidence of strong local need.
- 2. Public and community owned open spaces should be progress to Green Flag quality, with the following identified as initial priorities:
  - a. Twentymans' Playing Field and Skate Park Field
  - b. Jubilee Wood
  - c. Duck Lane Village Green
  - d. Pendeford Mill Nature Reserve
  - e. Pendeford Nature Walk
  - f. Canal network

#### S3 Urban Nature Recovery Standard

This is relevant to urban and urban fringe areas. It is met by the:

- Setting of a percentage increase for the amount of green infrastructure that is designated and managed for nature recovery.
- Provision of 1 hectare of Local Nature Reserve (LNR) per 1,000 population (for nature conservation and quiet enjoyment). (*This would require a minimum supply of 6.4ha over the Local Plan period*)
- Enhancement of existing and identify new areas that qualify as Local Wildlife Sites (for nature conservation).

#### S3 Bilbrook's Nature Recovery Standard:

- **1.** All public and community owned land to have biodiversity improvements appropriate to its form and function.
- 2. Provision of 1 hectare of Local Nature Reserve (LNR) per 1,000 population (for nature conservation and quiet enjoyment). This will equate to a minimum supply of 6.4ha over the Local Plan period.
- 3. Enhancement of existing Local Wildlife Sites (for nature conservation) and identify new areas to progress to designating quality including:
  - a. Moat Brook and River Penk
  - b. Canal Network
  - c. Pendeford Mill Nature Reserve
  - d. Jubilee Wood
  - e. Pendeford Nature Walk
  - f. Clewley Coppice and open space at i54

#### S4 Urban Greening Factor Standard

This standard requires:

- Progress towards a minimum average quantity of green cover across residential neighbourhoods (40%).
- New major developments are to implement the National Urban Greening Factor system and achieve a score of at least 0.3 for commercial development and 0.4 for residential development (or 0.5 if residential development on greenfield sites).

#### The National Urban Greening Factor (

<u>https://designatedsites.naturalengland.org.uk/GreenInfrastructure/downloads/Urban%20Greening</u> <u>%20Factor%20for%20England%20User%20Guide.pdf</u>) includes a weighing "factor" or value for each landcover type. This grades from 1 for woodland to 0 for concrete and are show in the table below.

The landcover factors are loosely based around green infrastructure benefits such as cooling, sustainable drainage and biodiversity benefit. Therefore, the system can be used as a rough proxy measure to compare the relative benefits existing and proposed landscaping by a development.

To get the development's score:

- the area of each landcover type is measured and multiplied by its associated factor score
- these are then added together and an average calculated site

Landcover type	Factor		
	score		
Vegetation and Tree Planting			
Semi-natural vegetation & wetlands retained on site (including existing / mature trees)	1.0		
Semi-natural vegetation established on site	1.0		
Standard / semi-mature trees (planted in connected tree pits)	0.9		
Native hedgerow planting (using mixed native species)	0.8		
Standard / semi-mature trees (planted in individual tree pits)	0.7		
Food growing, orchards and allotments	0.7		
Flower rich perennial and herbaceous planting	0.7		
Mixed hedge planting (including linear planting of mature shrubs)	0.6		
Amenity shrub and ground cover planting	0.5		
Amenity grasslands including formal lawns	0.4		
Green Roofs and Walls			
Intensive green roof (meets Green Roof Organisation / GRO Code)	0.8		
Extensive biodiverse green roof (meets the GRO Code, may include Biosolar)	0.7		
Extensive green roof (meets GRO Code)	0.5		
Extensive sedum only green roof (does not meet the GRO Code)	0.3		
Green facades and modular living walls (rooted in soil or with irrigation)	0.5		
SuDS and Water Features			
Wetlands and semi-natural open water	1.0		
Rain gardens and vegetated attenuation basins	0.7		
Open swales and unplanted detention basins	0.5		
Water features (unplanted and chlorinated)	0.2		
Paved Surfaces			
Open aggregate and granular paving	0.2		
Partially sealed and semi-permeable paving	0.1		
Sealed paving (including concrete and asphalt)	0.0		

Table 4. Urban Greening Factor scores.

#### S4 Bilbrook's Urban Greening Standard:

- **1.** Progress towards a minimum average quantity of green cover across residential neighbourhoods (40%).
- 2. New major developments are to implement the National Urban Greening Factor system and achieve a score of at least 0.3 for commercial development and 0.4 for residential development (or 0.5 if residential development on greenfield sites).

#### S5 Urban Tree Canopy Cover Standard

This requires the setting of an agreed increase in percentage of tree cover for a local area based on local needs, opportunities and constraints.



#### S6 Biodiversity Net Gain Standard

In parallel to the National Green Infrastructure Framework are other national planning mechanisms for increasing the Green Infrastructure benefits from developments. Biodiversity Net Gain is a legal requirement for developments over certain thresholds across England. It require a minimum 10% improvement in biodiversity value from the pre-development baseline condition.

This can be delivered onsite or offsite, within England. However, it is a requirement that this should be delivered onsite where possible.

Local planning policy can set requirements beyond (but not below) the legal minimum requirements of Biodiversity Net Gain in the following ways:

- Requiring a minimum net gain amount that is set higher than 10% (e.g. 20%)
- Requiring any offsite provision to happen within a given area (e.g. Local Planning Authority area or Plan boundary).

To require standards in excess of the national minimums, the plan makers should demonstrate need and that this increase will not prejudice viability. Given the evidence of the poor state of the local natural environment and its position within wider wildlife corridors it is considered to be justified within in an ecological context.

It is outside of the scope of this Strategy to assess economic viability. However, it is widely acknowledged that onsite delivery of Biodiversity Net Gain is much cheaper. The adoption of the Greenspace Factor and tree canopy standards can often be stacked with Biodiversity Net Gain for

onsite delivery. It is also foreseen that most major developments are on greenfield sites with few physical constraints which would require remediation.

As has been demonstrated elsewhere (e.g. the Natural England's funded 2022 Viability Assessment of Biodiversity Net Gain in Kent <u>https://kentnature.org.uk/wp-content/uploads/2022/07/Viability-</u> <u>Assessment-of-Biodiversity-Net-Gain-in-Kent-June-2022.pdf</u>) that the requirement of minimum 20% Biodiversity Net Gain is negligible, especially on sites with lower ecological interest.

However, it is expected that smaller developments, by their nature, will struggle more than larger sites to accommodate onsite Biodiversity Net Gain. Therefore, it is recommended to exclude minor developments from this increased percentage and only require major developments to adhere to the policy increase. Major developments are classified as:

- The provision of 10 or more dwelling houses
- Outline application on a site area of 0.5 hectares or more and where the proposed number of dwellings has not been specified
- The provision of a building or buildings where the floor space to be created by the development is 1,000 square metres or more
- Development carried out on a site having an area of 1 hectare or more

#### S6 Bilbrook's Biodiversity Net Gain Standard:

- 1. Major developments should provide a minimum of 20% Biodiversity Net Gain.
- 2. Developments within Bilbrook should deliver their Biodiversity Net Gain requirements onsite, or if this is not possible, within the Bilbrook Neighbourhood Plan boundary.

#### 6.0 Mapping of key resources

A number of maps have been produced for this strategy. These are presented in Appendix 1. Some are taken directly from publically available GIS tools and others have been created separately. Some errors in mapping are inevitable, however they strive to be accurate, certainly for the purposes of strategic GI planning.

Although some maps have multiple purposes, they can be broken down into Maps can be broken into themes:

- Plan area, boundaries and public ownership
- Access to open space and amenity typologies
- Nature conservation
- Climate change
- Priorities

The latter category, Priorities, is given in Appendix 2.

#### 7.0 Key observations, priorities and remedial actions for Bilbrook

#### 7.1 Observations and need

The Standards set out above will provide a framework for where Bilbrook needs to get to. Some of these are broad and should be informed by local priorities. From the information gathered and assessed above the following broad concerns have been identified. Overarching actions to help remediate these have been recommended.

As is the nature of Green Infrastructure, many overlap in terms of action, responsibility, "topic" and location. These should be developed and further prioritised within the Delivery Plan and updated as more information is available, including that from the local community.

Some of these actions can be taken forward via developers, Councils, communities and private land owners. Most will require a mixture of these stakeholders. Similarly a mixture of funding sources is likely to be required.

Topic	Observation	Action	Priority
	General provision of Green Infrastructure access across the Plan area is significantly below average. Nationally, Bilbrook is in the lowest 8% for local accessible natural greenspace. It is in the 2 <sup>nd</sup> lowest out of nine classes for combined greenspace and public access provision.	Increase access to natural greenspace, especially in the south west of Bilbrook. Increase quality of and promote use of existing greenspace.	High
Access	Public Rights of Way are patchy and do not safeguard use of much of the Green Infrastructure network especially along watercourses.	Formalise historically used, but unregistered footpaths. Identify opportunities to create new footpaths along the watercourses.	High
	The informal accessible open spaces along Moat Brook are often not included within the national datasets.	Formalise historically used, but unregistered footpaths	High
	The southern area is better served, resulting in large part from the accessible Barnhurst Sports Pitches at Aldersley High School.	Ensure protection of Barnhurst Sports Pitches public open space at Aldersley High School. Facilitate increased access to this especially to the west.	Med

Heat	Residents of Central and Eastern Bilbrook have an especially high risk from heat/air pollution hazards given current environment and higher risk social factors.	Protect and increase tree cover within settlements especially to provide shading of roads and hard surfaces in Central and East Bilbrook. Ensure new development is climate- proof and reduces heat pressure for existing and new residents.	High
Flooding	Flooding concerns are present for built up areas from both river (where Moat Brook enters Bilbrook from the west and south of the confluence of Moat Brook & River Penk) and surface water sources (around the Woodman/Duck Lane and Dam Mill).	Identify floodplain wetland improvements to increase capacity in key locations. Protect and identify sustainable drainage opportunities within Dam Mill and the Woodman/Duck Lane areas (e.g. raingardens in verges, education of residents). Ensure new development is climate- proof and provides multifunctional, above ground, sustainable drainage.	High
	Bilbrook has very few designated nature conservation sites. It is known locally that Pendeford Mill is designated as a Local Nature Reserve.	Investigate Local Nature Reserve declarations for Local Authority owned Jubilee Wood and Pendeford Nature Walk. Adopt mapping of wildlife network.	High
Biodiversity	Isolated habitats exist outside of the main networks including three ancient woodlands. These are present within the more open countryside to the north.	Identify opportunities to link isolated habitats e.g. improved hedgerows between woodlands.	Med
	Of the core sites, only Pendeford Mill Local Nature Reserve and Jubilee Wood are known to be actively managed for biodiversity.	Prioritise opportunities for management/ enhancement within core sites and network. Ensure new development protects and enhances the wildlife network.	Med

Table 5. Key observations and recommended broad remedial actions.

#### 7.2 Priorities

These priorities can be grouped as follows and used as a proposed structure for the Delivery Plan:

#### P1 Set a plan:

- a. Adopt the Green Infrastructure Strategy for Bilbrook: Evidence, Standards and Key Priorities.
- b. Steering Group create and adopt a long term vision based on the agreed Standards and priorities. This vision should be broken down strategically into short and long term goals and actions based on local priorities, and opportunities for delivery, within and outside of the Neighbourhood Plan's development process.
- c. Neighbourhood Plan policy should reflect the relative importance of, and gaps present within, the Green Infrastructure within the Plan boundary. It should facilitate delivery of the Standards and Priorities set out here, both through protecting and improving Green

Infrastructure through planned future developments. A recommended draft policy is given in Appendix 3.

- d. Assemble a Delivery Plan based on the priorities and standards set out here.
- e. Monitor and revise the Strategy and Delivery Plan as progress is made and new evidence is available. It is recommended that the Parish Council monitors progress annually and refreshes the evidence base and priorities on a c5 year cycle.

#### P2 Maximise public use of existing open space:

- a. Work to declare Public Rights of Way status on long established paths
- b. Join up the green network with public access especially in the east and south west of the main settlement.
- c. Increase the quality of key open spaces to Green Flag standard.

#### P3 Climate-proof the settlement:

- a. Protect and increase tree cover over hard surfaces, especially within the communities of Central and East Bilbrook.
- b. Identify and deliver sustainable drainage solutions in the Woodman/Duck Lane area & Dam Mill and increase floodplain capacity in the north west and in the western industrial area.
- c. Ensure development is carried out the Standards set out in this Strategy

#### P4 Protect, maintain and improve biodiversity:

- a. Increase coverage of appropriate nature conservation designations, such as Local Nature Reserve, that protects wildlife and provides public access.
- b. Identify key actions to link, maintain and improve the biodiversity of the green network.

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#### Appendix 1 Mapping of Green Infrastructure Datasets

#### A1. M1. Parish boundary on OS mapping



#### A1. M2. Parish boundary on aerial photograph





A1.M3. Plan boundary, aerial photography and Lower Layer Super Output Area boundaries



A1.M4. Public and community owned accessible open space and areas of proposed change (including local names for open space)

Key public open spaces (inc probable ownerships) and areas of proposed change



#### A1.A1 Coverage of rights of way



https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Map.aspx

#### A1.A2 Coverage of accessible natural greenspace





Coverage of Accessible Natural Greenspace Standards in & around Bilbrook

Information accessed 14th February 2023

https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Map.aspx

#### A1.A3. Combined greenspace and rights of way



https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Map.aspx

#### A1.A4. Nature Close2Home ratings



https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Map.aspx

#### A1.A5. Greenspace typologies





# Greenspace typographies in & around Bilbrook

Information accessed 14th February 2023

https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Map.aspx

#### A1.C1. Tree Equity Score: West Bilbrook



## Woodland Trust's Tree Equity Score for West Bilbrook

#### A1.C2. Tree Equity Score: East Bilbrook



# Woodland Trust's Tree Equity Score for East Bilbrook

#### A1.C3. Tree Equity Score: Central Bilbrook



Woodland Trust's Tree Equity Score for Central Bilbrook

#### A1.C4. Tree Equity Score: South Codsall



Woodland Trust's Tree Equity Score for South Codsall

#### A1.C5. Flood risk



#### A1. C6. Flood risk, access, and semi natural habitat



#### A1.B1. Habitats and watercourses

## Remote habitat mapping and watercourses in and around Bilbrook

https://magic.defra.gov.uk/MagicMap.aspx



A1.B2. Priority habitats and ancient woodland

### Priority Habitats in and around Bilbrook https://magic.defra.gov.uk/MagicMap.aspx



#### A1. B3. Ancient woodland and statutory nature conservation sites



https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Map.aspx

#### A1. B4. Core blue and green corridors



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#### A1. B5. Core blue and green corridors and likely areas of change



# Green and blue wildlife corridors and areas of likely change

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#### Appendix 2 Green Infrastructure Assets and Issues Map of Bilbrook

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#### A2.P1. Corridors, access and change



Green and blue wildlife corridors, areas of likely change and off road path network

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A2.P2. Initial priorities for action in the village core



Initial priority green infrastructure opportunities in the village core

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#### Appendix 3 Recommended Draft Green Infrastructure Policy

The Neighbourhood Plan should include maps from this strategy as required to clearly show the blue and green networks, LSOAs and Priority actions. It should also provide information on the appropriate levels required by the Standards including:

• Accessible Greenspace Standard:

Name	Walking	Minimum	Accessible Natural	Approximate walking
	distance	size	Greenspace	/ cycling time
Doorstep Greenspace	200m	0.5ha	No	Less than 5min walk
Local Natural Greenspace	300m	2ha	Yes	5min walk
Neighbourhood Natural	1km	10ha	Yes	15min walk
Greenspace				
Wider Neighbourhood	2km	20ha	Yes	35min walk
Natural Greenspace				
District Natural Greenspace	5km	100ha	Yes	15-20min cycling
Sub-regional Natural	10km	500ha	Yes	30-40min cycling
Greenspace				

- Bilbrook's Urban Greening Standard:
  - Progress towards a minimum average quantity of green cover across residential neighbourhoods (40%).
  - New major developments are to implement the National Urban Greening Factor system and achieve a score of at least 0.3 for commercial development and 0.4 for residential development (or 0.5 if residential development on greenfield sites).
- Bilbrook's Urban Tree Canopy Cover Standard based on Tree Equity Scores:

0	East Bilbrook (LSOA ID E01029613)	36%
0	West Bilbrook (LSOA ID E01029614)	24%
0	Central Bilbrook (LSOA ID E01029615)	24%
0	South Codsall (LSOA ID E01029631)	30%

It should also provide web links to the relevant external standards and mapping tools to aid developers in their design and provision.

#### Policy: Green Infrastructure protection and improvement

Development within the plan boundary should protect and appropriately enhance the green infrastructure of the area. It should do this by applying the Standards and supporting the delivery of the Priorities set out within Green Infrastructure Strategy for Bilbrook: Evidence, Standards and Key Priorities (2024).

**Development will be expected to deliver:** 

- 1. Climate adaptation via above ground & multifunctional sustainable drainage, landscaping volume & type meeting national Urban Greening Framework standards and Tree Cover appropriate to the site's Tree Equity Canopy Cover Goal.
- 2. Accessible natural open space for the plan area, via increasing supply and access to existing provision, to national levels. This should be located as far as possible within, or adjacent, to the green & blue corridors and serve active travel, including a new off-road link around the south east of the village settlement from Barnhurst Pitches to Dam Mill.
- 3. Biodiversity protection and enhancement via major developments providing a minimum 20% onsite Biodiversity Net Gain appropriate to the local ecology. Any net gain remaining, which is evidenced and agreed as not possible to deliver onsite, should be delivered within existing green and blue corridors within the Plan area.

#### **Appendix 4 Delivery Plan Guidance**

#### Scope

The Delivery Plan will need to set out the actions needed to ensure the Standards and Priorities within this Strategy are meet across the plan area. The actions will need to be specific, measurable, achievable, relevant and time bound (SMART).

Where required actions are not currently achievable (for example, through lack of agreed location, delivery agent or resources), then they should be broken down further to move them forward towards their final delivery. Having this "long list" of projects makes the wise reactive use of new resources possible.

The plan must set out agreed responsibilities and a monitoring & review process.

#### Process

The process of assembling the Delivery Plan will be fundamental to the success of its implementation. If it is not based on robust evidence, wise prioritisation and creative resourcefulness, it will not drive the results needed to safeguard the community's wellbeing into the future.

<u>Evidence</u>: the evidence is presented in this Strategy. New evidence will become available overtime which will enable finer grained understanding, which should be used to revise the prioritisation. In the longer term, it is likely new pressures will arise and others, hopefully, lessen. These need to be observed and evaluated by reviewing the Strategy.

<u>Prioritisation</u>: an honest prioritisation should be made in allocating resource. This must balance the community's real need and the opportunities for change. Planning for incremental delivery of the harder to reach solutions, to resolve longer term problems, will be essential for success.

<u>Resourcefulness</u>: Delivery will require land, money and people. Identifying and successfully engaging the relevant stakeholders and wider partners will be fundamental in assembling these. These may be focussed in specific localities or on a regional scale, they may be specific to a particular aspect of GI or cross-discipline and they may be involved with a short action or in perpetuity.

The Delivery Plan, by its nature, needs to be a working document which feeds back, reviews and updates prioritisation and available/predicted resources.



#### **Stakeholders and partners**

The Delivery Plan and its actions will not come with any specific resources, including staff time or funding. Therefore, for anything to be achieved resources need to be either generated or aligned via stakeholders/partners. There are various stakeholder/partner identification and engagement methods. Below are four categories of stakeholders/partners and some local examples.

Landowners/managers - those who physically have or control land within the plan boundary:

- Developers
- Councils
- Farmers
- Other businesses
- Residents
- Canal and Rivers Trust

Local people/groups - those who spend time within and are personally invested with the area:

- Residents
- Community groups
- Employers and employees
- Schools staff and students

<u>Resourcers - those who might provide time, effort, money and/or resources:</u>

- Time/effort
  - Local people/groups (see list above)
- Finance/materials
  - $\circ \quad \text{Grant funders} \quad$
  - o Councils
  - Developers

- Central government
- Charity sector
- Local people/groups (see list above)
- Landowners/managers (see list above)

<u>Advisors -</u> those who can provide information on wider strategies and successful engagement & delivery:

- Government Agencies
- Councils
- Charities
- Private sector
- Local people/groups (see list above)
- Landowners/managers (see list above)

#### **Engagement methods**

Engagement will need to be done in ongoing waves and in a number of ways. Areas of need should be presented along with realistic examples of actions that can help. These then should be consulted with relevant stakeholders/partners before being refined. It is recommended that the Delivery Plan itself has two consultation stages; once during initial formulation of actions and then more broadly once a comprehensive draft is available.

Several methods of consultation have been already used within Bilbrook, including for the Neighbourhood Plan. The relative success of these methods can be used to determine which sectors can be more readily reached and which may require new or more targeted approaches.

Engagement should include honest dissemination of facts, priorities, timescales and resources. Similarly it should have a foundation of genuine inclusion and listening. Firm communication of the type, scale and location of relative need is important to prevent those shouting louder causing those quietly in more need to become overlooked or disengage.

Celebration of successes will be vital to maintain energy and momentum.

#### **Solution matrix**

Green infrastructure, by its nature, is multifunctional. A sustainable drainage scheme can prevent flood damage, reduce mortality/morbidity from peak summer heat, provide a place to relax & learn as well as being a home to wildlife. However, each of these benefits will be provided at varying levels, depending on the scale, design, accessibility, maintenance and location.

Therefore, it is hoped that a matrix of interventions can be developed to aid engagement and identification of solutions. It will be a tool for the selection of project types and list the various relative benefits they could provide.

The design of the chosen intervention/s can then be optimised to generate the required outcomes for the location/plan area.

#### **Appendix 5 References and further guidance**

#### **Planning Policy**

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#### **Appendix 6 Quality Assurance**

This document has followed national models, standards and data. Minimal deviations from these, outside of recommended adaptation to fit local circumstances has taken place. The recommendations are in line with national expectations and personal communications with Natural England and Land Use Consultants, who are assisting them with the rollout of the National Green Infrastructure Framework.

The author, Alan Preece has a BSc(hons) in Environmental Science and a MSc in Habitat Creation and Management. He is a Member of Chartered Institute for Ecology and Environmental Management and a Chartered Environmentalist through Society for the Environment. Alan is an accredited Practitioner level member of Countryside Management Association, of which he sits on the national board of directors.

He has over 20 years professional experience in conservation and environmental management, mostly in urban and urban edge settings within the West Midlands. This has included writing and implementing planning policy for the Black Country and Telford and Wrekin. He has grown up and lives in Bilbrook and is employed by Telford & Wrekin Council's Local Planning Authority as an Ecology and Green Infrastructure Specialist.

The document has been produced in conjunction with Bilbrook's Neighbourhood Plan and has used some of this Plan's technical evidence. Drafts of this Strategy have been shared with the Steering Group for comments. This is an independent group of residents and elected members and reports to Bilbrook Parish Council. These comments have not altered the application of national methodologies or standards.