Worcestershire County Council & Partners

# Worcestershire Sub Regional Green Infrastructure Framework

West of Worcester Concept Plan

Draft Version 1

**WC C Internal Use Only**

Strategic Planning and Environmental Policy Team
10/7/2009

## What Is Green Infrastructure

### The West Midlands Green Infrastructure Prospectus defines GI as:

Green Infrastructure is the network of green spaces and natural elements that intersperse and connect our cities, towns and villages. It is the open spaces, waterways, gardens, woodlands, green corridors, wildlife habitats, street trees, natural heritage and open countryside. Green Infrastructure provides multiple benefits for the economy, the environment and people.

Green Infrastructure may also be seen as part of the life-support system of an area; providing functions and environmental services to a community, such as employment, recreation, physical health and mental well-being, social interaction, contact with nature, drainage and flood management, climate change adaptation and pollution control. It may be considered the essence of local character and sense of place, the very heart of a community, or dear to the hearts of many thousands some distance away.

It spans administrative and political boundaries; it is publicly and privately owned, and it may be semi-natural or man-made in its origins. It may be green, brown or blue – think of canals or derelict land, woodlands in winter or ploughed fields. It may be wrapped around by houses, schools, factories or commercial properties.

In urban situations it complements and balances the built environment; in rural settings it provides a framework for sustainable economies and biodiversity; in-between it links town and country and interconnects wider environmental processes.

PPS1 paragraph 35 states that "High quality and inclusive design should be the aim of all those involved in the development process" and that good design should:

- address the connections between people and places by considering the needs of people to access jobs and key services;
- be integrated into the existing urban form and the natural and built environments;
- be an integral part of the processes for ensuring successful, safe and inclusive villages, towns and cities;
- create an environment where everyone can access and benefit from the full range of opportunities available to members of society; and, consider the direct and indirect impacts on the natural environment.

## What is a Concept Plan?

Concept plans and statements provide a framework for the development of master plans for areas of strategic growth.

This concept plan provides a statement of aims and objectives for green infrastructure that the partners to the paper would expect to see addressed in the development of West of Worcester.

The concept plan is based on primary baseline data and the multifunctional characteristics of the West of Worcester in so doing it identifies the green infrastructure assets, and spatial patterns that give rise to opportunities for a connected and multifunctional green infrastructure network.

## Purpose & Aim

The concept plan for the West of Worcestershire is intended to provide a high level framework, consistent with the emerging Sub Regional Green Infrastructure Framework. The concept plan seeks to inform the detailed masterplanning that will apply in these areas. It is not intended to be prescriptive, but does establish principles to demonstrate how best practice for the development and management of green and blue infrastructure can be applied on the ground.

In addition a Vision for the development of the west side of Worcester has been based upon the vision for the South of Worcestershire and Worcester City as identified in the South Worcestershire Joint Core Strategy (SWJCS) Preferred Option and the associated policies CS1 & CS2 respectively.

The Vision document includes an expectation that the development will continue to provide Green Network open space as identified within the existing city that is based on a minimum of 40% of the development area. This concept plan identifies how development should address this requirement.

To achieve this, the concept plan provides the following:

- an overview of the local landscape character, its history, function and physical make-up;

- an understanding of the current structure and broad character of the West of Worcester and surrounding settlements including the form of the built and historic environment and an overview of how settlements interact with the surrounding countryside, particularly at the location of the strategic growth area;

- an overview of the local movement and access network, including pedestrian and cycle access;

- an understanding of the qualities and constraints of the strategic growth area. This includes, amongst other items, topography, woodland, watercourses, flood risk, the character, views into and out of the sites, access opportunities and the character and requirements of any on-site uses to be retained;

- a view about the type of development which could occur and the benefits the development should deliver on site, and where relevant, beyond the site boundaries. This provides the basis for the place making principles to be embedded in the master planning of the site;

- broad assumptions about the physical capacity of the site, and the implications for the built form and development density and the provision

of physical infrastructure i.e. SUDS and the sustainable transport provision and access to open space to support the new and existing community.

## Preparation of the statement and its status

Preparation of the document has been led by the County Council but has been endorsed by Natural England, The Environment Agency, The Forestry Commission, Worcestershire Wildlife Trust, English Heritage (as initial standing advice) and supplements the Vision for the West of Worcester paper on green infrastructure aspects. The paper has also taken account of local surveys including the Citizens Panel survey and consultation with the relevant Parish Councils.

Note: Preparation of this paper does not however imply any organisational support to any planning application for the West of Worcester.

## Limitations

As noted previously the concept plan provides a strategic framework for the development of master plans and it is recognised that this strategic approach brings with it limitations. The concept plans does not take account of the location of other infrastructure i.e. piping for utilities and further surveying will be required to enable the development of realistic possibilities for implementation. The concept plans statements identify the need for further investigation and analysis and as such a caveat to the information provided is included where appropriate.


**Figure 1 - West of Worcester Location Map**

**Figure 2 – West of Worcester Aerial Photograph**

## Biodiversity

### Summary (characteristics / assets)

The area is mostly a mix of arable and pasture farmland. The central and southern parts, largely, have been heavily agriculturally improved and have little biodiversity interest. However there is significant biodiversity interest within the site, including the presence of BAP habitat. These include several semi-improved grasslands and a traditional orchard. The Laugherne Brook corridor crosses the north of the site and forms the eastern boundary to much of the site. This is an excellent corridor with a mosaic of riverside habitat including pollarded willows and mature trees. In the centre of the site there is a chain of ponds which forms and east/west corridor joining the north/south corridor of the Laugherne brook. There is also an extensive public footpath network throughout the site (excepting southernmost part)

### Statements (opportunities / potential for connectivity)

The Laugherne brook corridor and its tributaries provide the obvious focus for improving biodiversity and connectivity. It should also provide other green infrastructure benefits such as flood amelioration. There are several opportunities for habitat enhancement including the grasslands and old pear orchard. The orchard is in need of restoration, and through replanting and could provide a resource and opportunity for community management. The chain of ponds for in the centre of the site could form part of wider SUDS system linking into the Laugherne brook. This could improve the quality of surface water run-off (contributing to WFD aims) as well as reducing peak flow rates in flood events. The ponds may also form a major east west link between Laugherne brook corridor and the wider countryside. There are other habitat connections through a several grasslands and the hedgerows in north and centre of the site. The south of the site is generally lacking good habitat connectivity but opportunities exist for linking the grasslands and trees around the SAM via improving hedgerow networks to the wider countryside, including Oldbury wood and nearby shelterbelts.

### Principals for development

The development should retain the areas of exiting biodiversity value, especially the semi-improved and unimproved grasslands and significant trees and hedgerows. The Laugherne brook corridor should be the focus for a multi-functional Green infrastructure corridor providing biodiversity enhancement and connectivity as well as flood mitigation and public access. This needs to be linked to a comprehensive SUDS system including swales throughout the development.

New planting may focus on exiting features such as the reinstatement of existing hedgerows or woodland features to provide structural landscaping or buffer zones for existing water corridors.

### Caveats

The above comments are based on the current information in the Worcestershire Habitat Inventory and from partial ground survey in 2005. The extent and level of survey data collected varies across the site. Therefore the current data is incomplete and must be refined by more detailed ecological surveys.

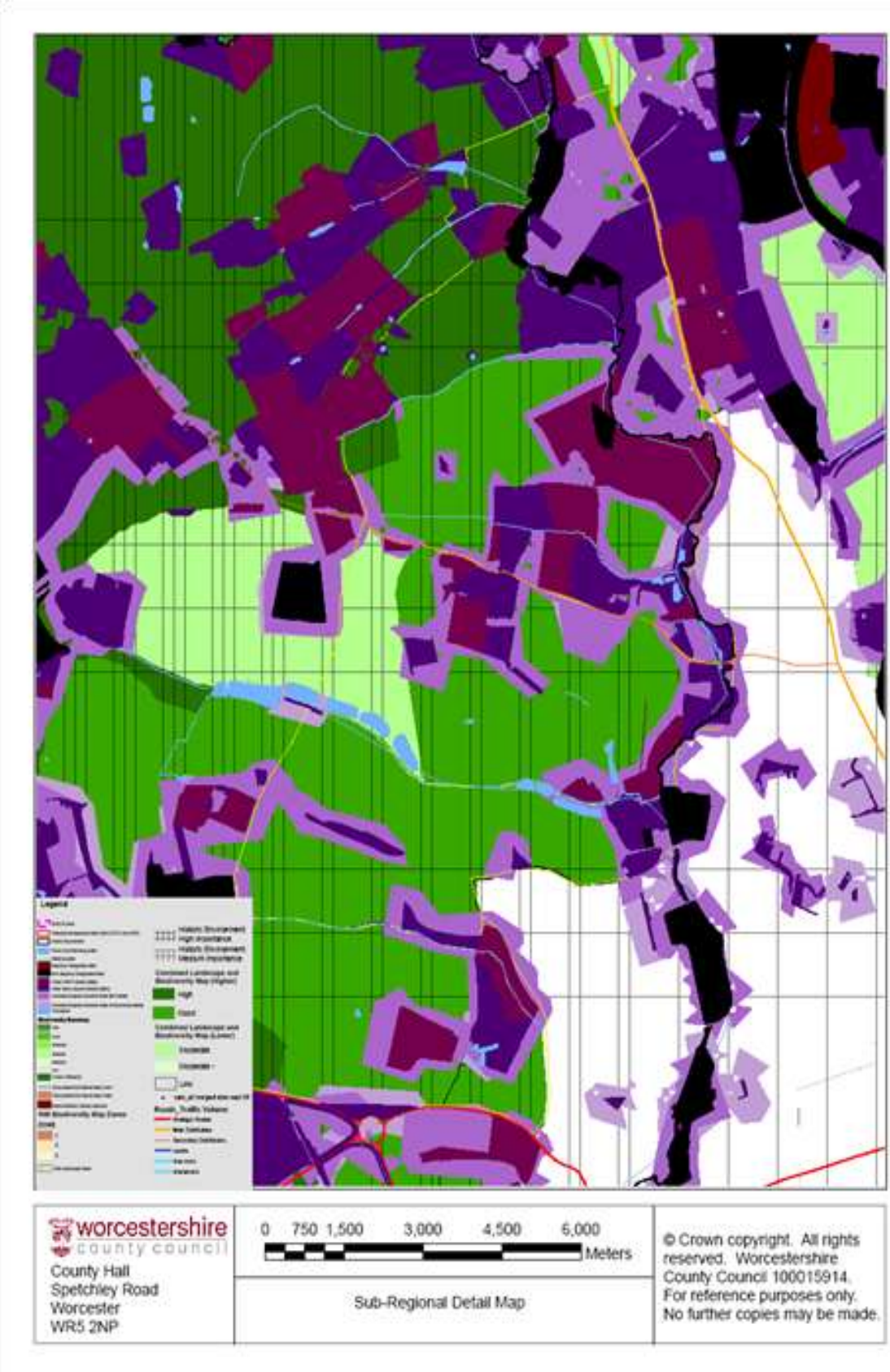


**Figure 3 –West of Worcester Merged Green Infrastructure**

## Landscape Character

**LANDSCAPE DESIGNATIONS:** None

**LANDSCAPE TYPE:** LDU MW56 Crown East Principal Timbered Farmlands

An area of soft rock, comprising mixed mudstones and sandstones producing a rolling, lowland topography and free draining loamy brown soils. The tree cover comprises relic patches of ancient woodland, often associated with densely scattered hedgerow oaks and streamside tree cover. It is an area of mixed farming with farmsteads and groups of wayside dwellings associated with a moderate to high level of dispersal and a medium scale field pattern.

- localised orchards
- localised market gardening terrace near Worcester
- localised pools associated with streams
- red brick building style
- localised parkland and groups of trees; Home Farm

Condition

- high intensity mixed farming, field pattern declining fragmented in places by arable intensification
- generally boundaries in poor condition
- hedgerow tree cover poorly represented
- good representation of woodland and parkland trees
- localised high impact of urban development

**RESILIENCE LEVEL:** Low

**LANDSCAPE SENSITIVITY CATEGORY:** High

**MAGNITUDE OF ADVERSE VISUAL IMPACT:**

| | |
|---|---|
| **Local Views (up to 0.5 km.):** | substantial |
| **Medium distance Views (0.5 – 2 km.):** | substantial |
| **Long distance views (over 2 km.):** | substantial |

**PRINCIPAL VIEWS FROM:** Local roads, public Rights of Way and properties and higher land to the north, the west and within Worcester city.

**ADDITIONAL SITE CONSTRAINTS:**
Mature hedges; many fine, mature trees; Laugherne Brook Special Wildlife Site; brook corridor; Hollybank potential Special Wildlife Site. The landscape character of most of this site is highly sensitive, with little resilience to change. This is therefore, a valuable landscape asset falling within a category of landscape where development would normally be discouraged in order to protect the special character.

**LANDSCAPE ASSESSMENT:**

**Hollybank and surrounding area -** This is the northern part of the overall site, centred on Hollybank and the Laugherne Brook, both areas of particular wildlife and aesthetic interest. This is elevated, rolling rural countryside, visually divorced

from urban settlement.  Development here would be highly visually intrusive and seen as unacceptable encroachment into the surrounding countryside. It would link Hallow to Worcester city and effectively destroy the village's unique and distinctive character. It would destroy the special character and wildlife interest of Hollybank and the Laugherne Brook corridor.

**Eastbury Manor West -** Located to the south west of the Hollybank area, this is rolling, elevated agricultural land that is visibly prominent in the landscape, particularly in views from the north. The area does not relate to existing settlement. Housing here would be viewed as visually intrusive from a wide area to the north, west and south.

**Eastbury Manor East -** This is fairly low lying land, rising to the west. It is located adjacent to existing urban development. Although overlooked from higher ground, development here would be seen in the context of the existing urban framework. Site limitations include the prominently sloping stream valley along the northern and eastern boundaries. These areas should be protected within the future urban framework.

**Crown East -** This is an elevated site with gently sloping topography, prominently viewed from vantage points in Worcester city.  It is unrelated to the existing urban framework and is seen as rural countryside associated with Crown East. Development here would destroy the separate character of Crown East and would be highly prominent and visually intrusive.

**Oldbury Farm West -** This is rising land, inclined towards the east and therefore highly visible from all the surrounding land and views from Worcester city. It is unrelated to the existing settlement and development here would be visually intrusive.

**Oldbury Farm East -** The northern part of this site (north of Oldbury Lane) is intensively farmed agricultural land, flat on the eastern side but rising to the high ridge on the outskirts of Broadheath and marked by Broadheath Foods factory. Although rising land, easily viewed from vantage points in the city, it is well contained and settlement here would be seen as a logical extension to the existing city development. The southern part of the site is flat, degraded agricultural land and relates well to the existing urban framework.

**Principles for Development**

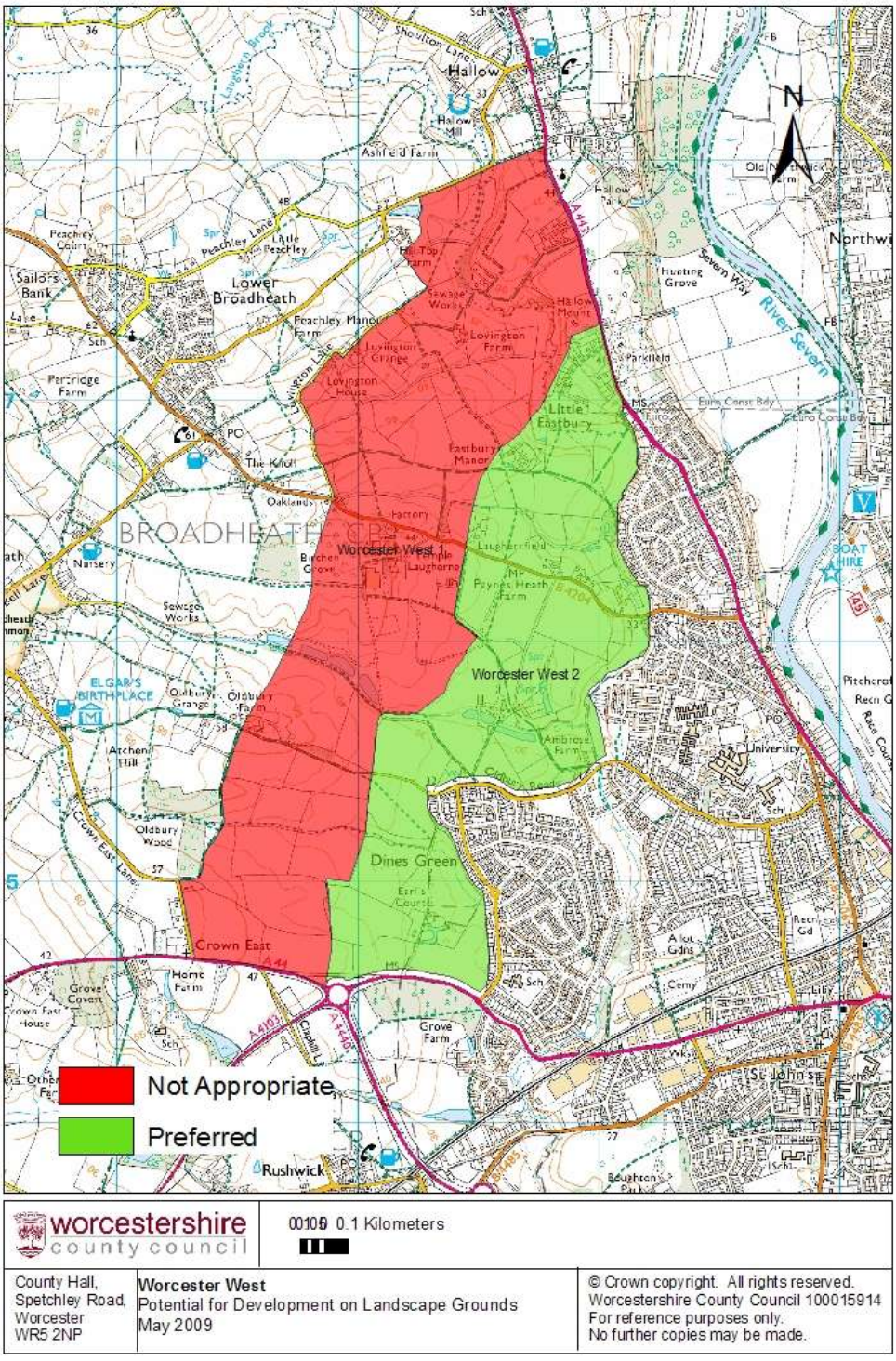


**Figure 4 – West of Worcester Potential for Development on Landscape Grounds**

# Historic Environment statement for the West Worcester Concept Plan

## Historic environment assessment and setting

The historic environment map illustrates the site in relation to character zones identified in the Historic Environment Assessment. The map also illustrates the range of historic environment assets that are currently recorded on the County Historic Environment Record. Nationally designated assets are also included along with related areas of high historic environment value: ancient semi-natural woodland, designed landscapes (*parks and gardens*) and conservation areas.

The tables for each Historic Environment Character Zone labelled on the map provide a summary of historic environment character and an assessment of sensitivity. Each theme is scored between 1 and 3, with 3 being the highest value.

- **Survival** – based on current records, land-use and the impact of existing development
- **Potential** – an assessment of the likelihood for the presence of additional historic environment features
- **Documentation** – record of previous research and related sources
- **Diversity** – assesses the range of multi-period, or multi-evidence type features (structural, below/above ground, landscape) and landscape attributes
- **Group value** – identifies where there is a strong coherence by period or evidence type
- **Amenity value** – identifies historic environment attributes within the zone with potential to be promoted as part of Green Infrastructure or amenity provision.
- **Sensitivity to change** – identifies sensitivity to change based on the impact of medium to large-scale development

## Site specific background

### Summary of historic environment features

Worcester West encompasses a diverse range of multi-period historic assets and landscape features including the Scheduled medieval settlement at Earls Court Farm. The historic buildings and overall site requires further evaluation in order to fully assess historic environment survival and potential. The site is characterised by a broadly consistent pattern of medium to large-scale irregular amalgamated post-medieval fields, with scattered areas of relic orchard and medium sized compartments of ancient semi-natural woodland. The settlement is dispersed and small-scale.

### Historic environment survival and potential

Limited disturbance throughout this area suggests there is good potential for survival of extensive below ground archaeology. The dispersed settlement pattern is predominantly of medieval and post-medieval origin. The full extent of surviving below ground archaeology is currently unknown due to limited investigation, with the exception of Earls Court Farm (associated with Scheduled Monument, SAM31957), which was the focus of an archaeological evaluation in 2002. The full potential is unknown due to limited investigation, however, there

likely that extensive historic environment assets survive in parts of the site, including multi-period below ground archaeology. Full potential should be established through detailed evaluation.

### Sensitivity to change

Below ground archaeology dating from the later prehistoric periods to the medieval period and surviving earthworks will be sensitive to disturbance from ground disturbance associated with development. The historic field pattern has evolved through a process of enclosure that began in the post-medieval period. A rationalisation of field boundaries took place during the 19th century with evidence of 20th century piecemeal alterations and field amalgamation. This locally distinctive field pattern is most evident north of the B4204 and south of Oldbury Farm. In these parts of the site boundary loss will significantly weaken the Historic Landscape Character setting.

## Principles of development

The historic environment is a fundamental and integrated part of the landscape. The development of opportunities to conserve and promote areas within the site, where historic environment features interact with valued habitat and local landscape features, is a vital attribute of Green Infrastructure design.

A programme of investigation must be commissioned by the developer to inform detailed site planning, explore opportunities to mitigate loss and conserve historic assets as part of development and green infrastructure design.

Planning Policy Guidance 15 and 16 currently set the policy framework for investigations of historic buildings and the historic environment. Planning Policy Statement 15 will replace PPG15 and 16 in 2010. The documents guide how development should undertake a detailed desk-based assessment and field evaluation to establish the presence, or absence of, in the case of West Worcester, below ground historic environment features. The requirements for conservation, mitigation and interpretation will be subject to the outcomes and analysis of historic environment investigations. The results will support detailed planning advice and any requirement for detailed conditions.

A key objective in Green Infrastructure design should be the development of opportunities to conserve historic environment features and landscapes and promote their contribution towards defining identity and a sense of place.

## Sources for planning

Specialist advice:

- Worcestershire Historic Environment and Archaeology Service (County Historic Environment Record covering Malvern Hills District)
- Worcester City Archaeological officer
- District Conservation Officer (Malvern Hills)
- District landscape officers (Malvern Hills)
- English Heritage

Documents:

- The final report of the Historic Environment Assessment for the Joint Core Strategy will provide full interpretation of the GIS evidence base. This will include target statements for each Historic Environment Character Zone (HECZ) aimed at guiding master planning and Green Infrastructure design.
- Revised historic environment content for the Worcester Green Infrastructure Study
- Planning for Landscape, Biodiversity and the Historic Environment in the development of Green Infrastructure Strategies in Worcestershire, Technical Research Paper: Version 2, Worcestershire County Council

Sources:

- Historic Environment Assessment (Worcestershire Historic Environment and Archaeology Service)
- Sites or monuments registered on the County Historic Environment Record
- Sites or monuments on the Worcester City Historic Environment Record
- District Listed Buildings Records
- English Heritage record of Scheduled Monuments
- Other assets registered on national or local records

worcestershire countycouncil

**Historic Environment and Archaeology Service**
**Historic Environment Record**

Map produced: 10/12/09
Information valid for three months from date of production

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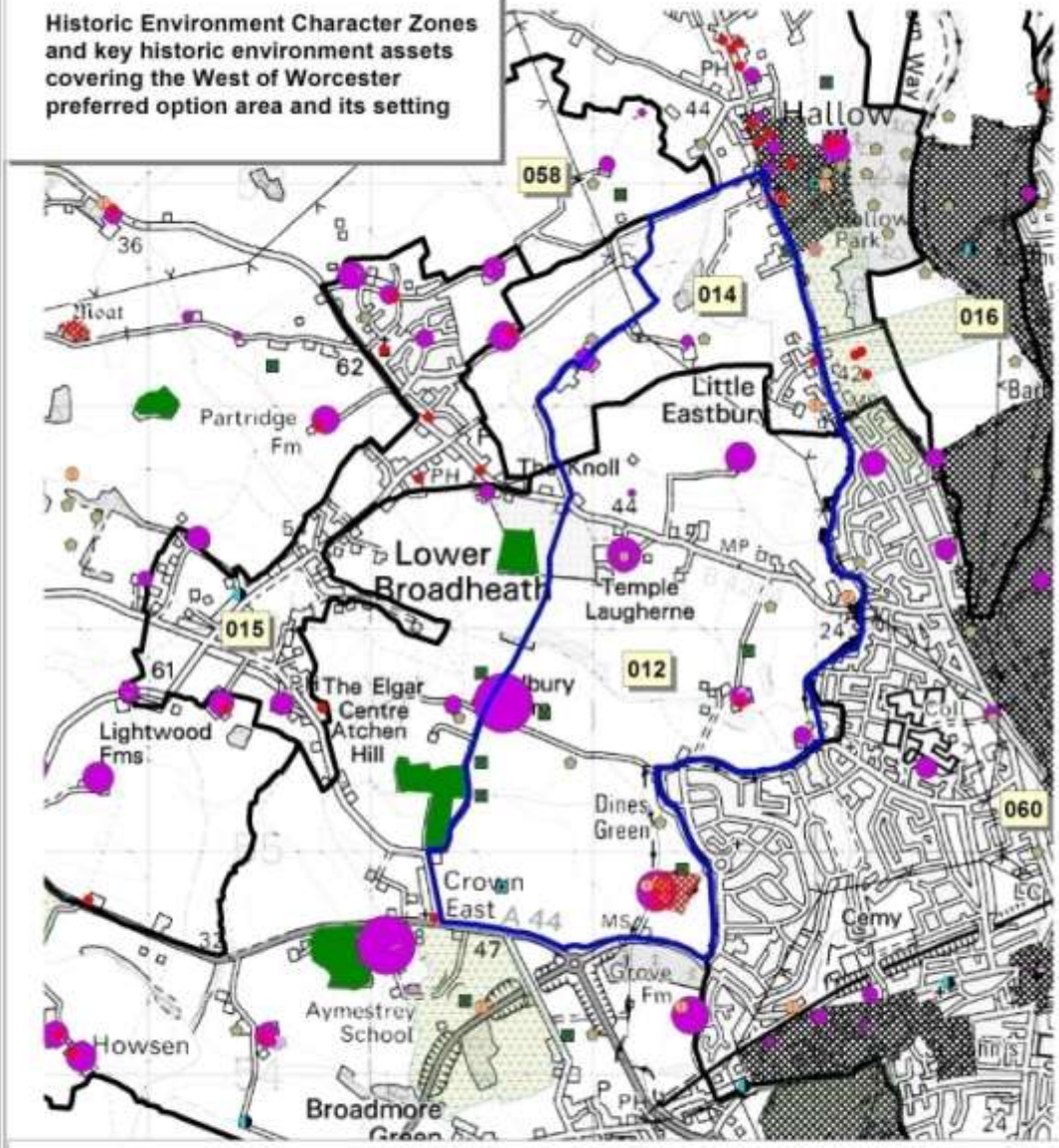
**Historic Environment Character Zones and key historic environment assets covering the West of Worcester preferred option area and its setting**




Key

- West Worcester
- SAM
- Listed buildings
  - Demolished
  - Listed
  - Buildings
- HER Monuments
  - BRONZE AGE
  - IRON AGE
  - MEDIEVAL
- MESOLITHIC
- MODERN
- NEOLITHIC
- POST MEDIEVAL
- POST ROMAN
- ROMAN
- UNKNOWN
- Historic farmsteads characterisation shp
- Parks and Gardens
- ancient semi-natural woodland
- Conservation area
- Historic Environment Character Zone
- 012 Historic Environment Character Zone identification code



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## Blue Infrastructure

The Laughern Brook, a main watercourse, flows from the north to south through an area in the north of the strategic allocation and along the eastern border for most of the allocation. There are also several smaller tributaries traversing the site from west to east towards Laughern Brook (Figure 7-3)[1].

### Flood Risk

The site is situated predominantly within Flood Zone 1, however a small area in the north of the strategic allocation adjacent to Laughern Brook is within Flood Zones 2 and 3. There is a potential fluvial flood risk from the Laughern Brook and the smaller tributaries that traverse the allocated area.

There has been historical flooding to the west and east of the strategic allocation's boundary with the closest occurrence of surface water flooding occurring on the eastern boundary. Surface water flooding may be a problem in some parts of the strategic allocation.

A detailed flood risk assessment of Laughern Brook will be required to assess the extent of actual flood risk to the site. Restrictions to development on the floodplain will need to be taken into account.

The two small tributaries in the north of the site may possibly be incorporated into the on-site infrastructure if there is no upstream catchment associated with the watercourses outside of the strategic allocation's boundary.

The two small tributaries in the southern area of the strategic allocation would need to remain as open channels in line with the Environment Agency's policy to maintain open watercourses and prevent culverting. These tributaries will need to be assessed within a flood risk assessment to determine whether they pose a flood risk to the site.

Groundwater flooding is not considered to pose a significant risk to the site.

### Water Resources & Quality

The water resource for the Worcester West strategic site in relation to water availability has been identified as 'No water Available' with surface water resources and groundwater resources having been over abstracted.

The site does not fall under a groundwater protection zone and the current groundwater chemical quality is good, therefore in terms of pollution is there unlikely to have an adverse impact on the groundwater. However there are a number of minor aquifers on the sites that may potentially be 'sensitive' or used for private water supplies. Therefore minor aquifers will need to be protected from pollution.

[1] The site is referred to as Worcester North West in the Water Cycle Study (WCS) for the South Worcester Joint Core Strategy (SWJCS).

## Development Principles

The construction of any proposed development is likely to impact on the hydrological processes within the site this may have an affect on drainage and run-off relationships and an adverse effect on abstraction points (including groundwater) and also be at risk of flooding.

Any proposals for development should include an assessment of the impact on water resources for the site. Consideration should be given to flood risk, drainage (including SUDS), water quality and any associated ecological issues. Design considerations can help to mitigate or minimise any adverse impacts through sustainable solutions such as the use of SUDS and by adherence to guidelines or adoption of best practice.

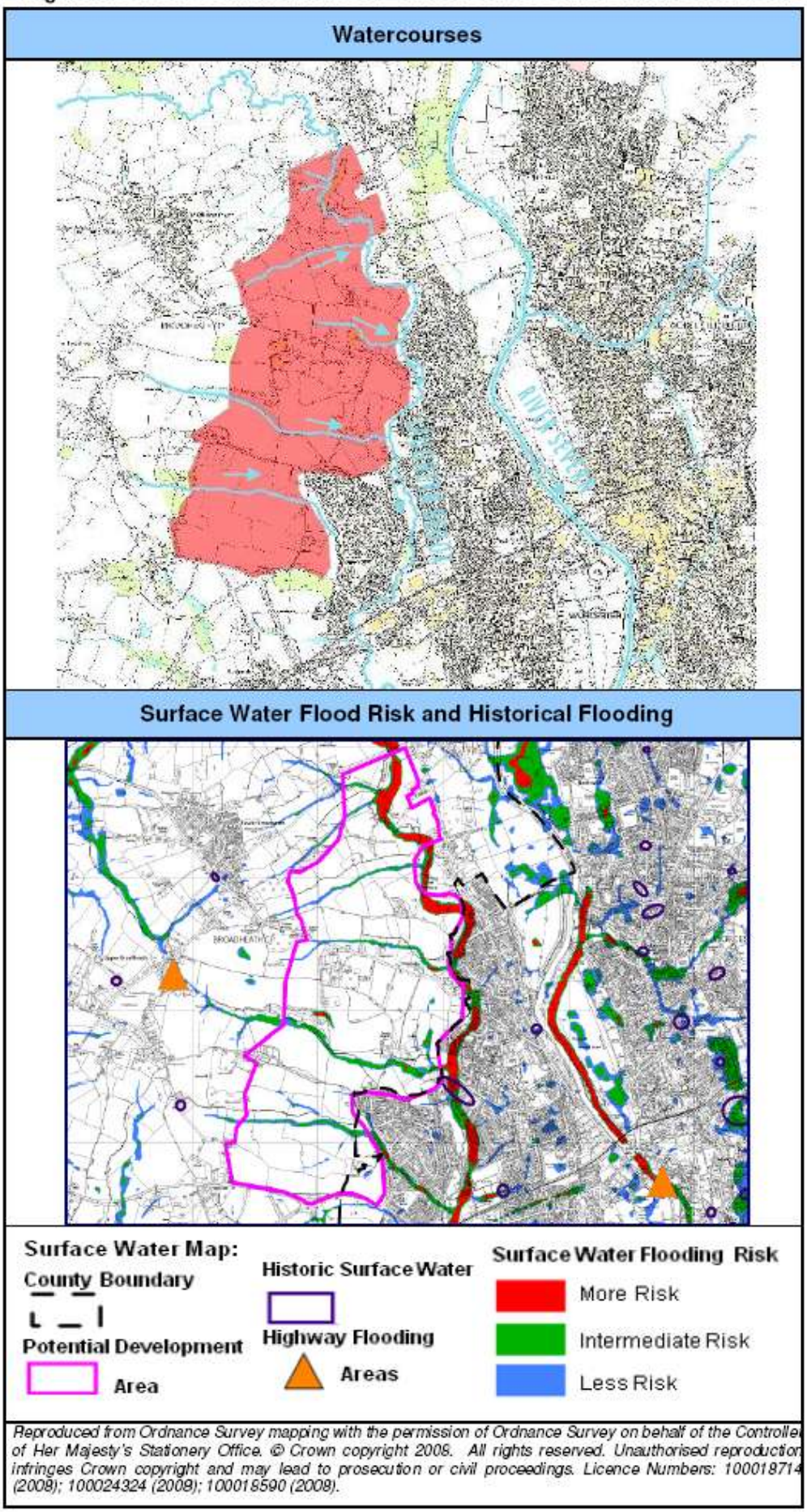
The site layout should take into account the risk of overland flow from impermeable surfaces and residual flooding by directing it away from vulnerable properties. Infiltration techniques should be implemented where possible in to assist with groundwater recharge, pollution should be prevented by good design and management.

Surface water should be disposed of where possible via infiltration techniques. The Environment Agency advises the use of above ground attenuation schemes over other techniques. The soil type within the strategic allocation's boundary is mainly poorly drained clay with some sandy soils, therefore infiltration techniques may be appropriate in some areas. A site specific investigation would be required to confirm the soil type and whether the ground conditions are suitable. If it is found that infiltration techniques are not suitable, surface water should be discharged into the Laughern Brook either directly through appropriate attenuation schemes or via the existing tributaries and appropriate attenuation schemes as part of an integrated SUDS system.

SUDS can provide ecological gain and in doing so have the potential to contribute towards the green infrastructure of the strategic site and also to the wider network in South Worcestershire. In addition, provision of flood storage areas and increasing flood storage capacity through, for example, floodplain naturalisation, can also add to the green infrastructure. Green infrastructure is not only beneficial to the environment but also to the developer by improving the "liveability" of areas and their attractiveness to residents.

There are several pond features in the south of the site. These should be retained where possible as they would have both amenity and ecological benefits to the strategic allocation and could possibly be incorporated in line with the required open space provision. The smaller tributaries that are maintained should have a minimum 8m maintenance access corridor either side of the watercourse. This may be reduced in particular circumstances with agreement from the Environment Agency or Local Authority.

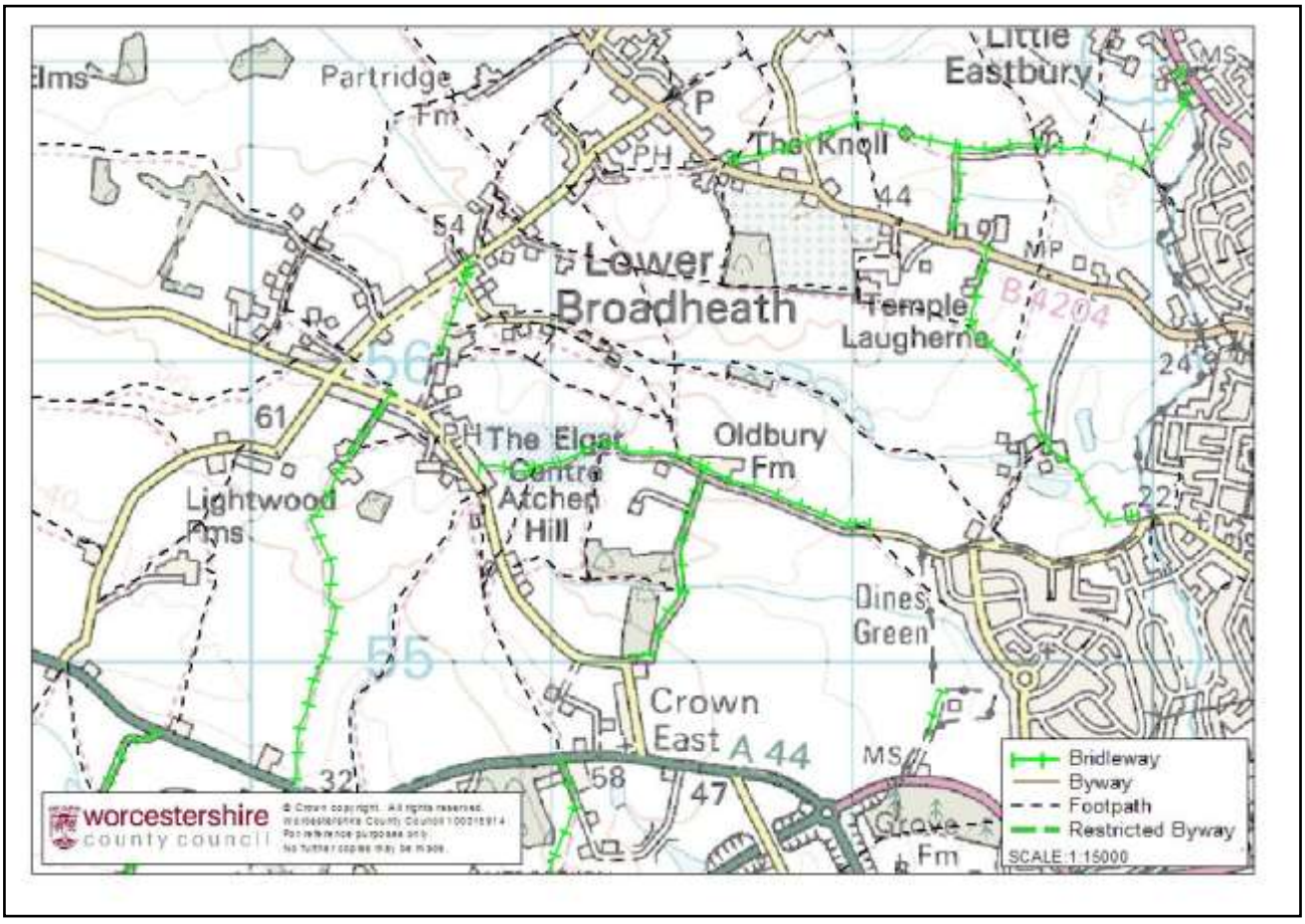
**Figure 7-3 Worcester North West – Watercourses and Surface Water Flooding**



## Access and Recreation Provision and Proposals

### Summary of Existing Provision

- Access Land – Broadheath common, at Broadheath.
- Public rights of way – Multiple footpaths and a handful of bridleways through area; The Severn Way is located to the east on the opposite side of the A443.
- National cycle route – none.
- Regional cycle route – none.
- Local cycle route and links – none.
- Village/doorstep/millennium green – none.
- Conservation walk – none.
- Walking the way to health initiative – none.
- Country park – none.
- Transport requirements – Connections to the town centre; Access to existing transport interchange nodes i.e. Foregate Street and Shrubhill railway stations and Crowngate bus station; High quality pedestrian and cycle routes within developments; Strong links to adjoining developments.
- Tourism - Elgar's Birthplace Museum and Elgar Centre.



### Proposals/Principles for Development

Other than Broadheath Common there are no public access greenspace sites within the proposed development area. There is a need to create significant accessible greenspace within or adjacent to the site, either within Worcester City or Malvern Hills District.

Due to the scale of the proposed development and existing residential areas to the east of the site, a sizeable public greenspace with adequate facilities such as an accredited Country Park (to include café, toilets, visitor information, way marked trails and managed wildlife habitats) managed to Green Flag standards, would be desirable. Existing blocks of woodland at Oldbury Wood or Birchen Grove, mature trees, water features at Laugherne Brook and grasslands across the site could be incorporated into the design of the development area and developed into greenspaces for protection and enhancement of biodiversity and recreational use by local people.

The location of any new recreational sites needs to consider:

- Proximity to centres of population
- Public transport provision
- Proximity to integrate to the Rights of Way network, cycle network and recreational way marked routes.
- Ability to accommodate appropriate facilities necessary for the use and enjoyment of the site.

There are relatively good public footpath and bridleway links from the proposed development site to the rights of way network in the wider countryside. Using existing rights of way, circular walks could be created from the development area to encourage people to venture into the wider countryside.

## Guiding Principles

Look to create a network of footpaths and cycle paths that will provide a sustainable transport network that links all parts of the community and areas of green/open space. This network should connect both within the site and to external networks such as Rights of Way and National Cycle networks.

Local play and amenity space should also be included within development parcels. Where possible this should be linked to existing landscape features and linear routes such as water corridors or hedgerows and should be designed so that they relate to the neighbourhoods they are serving.

These areas of open space may take the form of 'pocket parks', play areas or public squares. Development should front onto or overlook these spaces to provide a sense of security and to reduce anti social behaviour.

Larger areas of open space should provide a link between areas of formal open space and surrounding agricultural land. These may contain a mixture of open land, sports pitches and areas for landscaping and biodiversity and should be managed to a recognised standard such as Green Flag.

Parks should provide an area of landscaped open space for the benefit of both new and existing communities particularly where ANGST standards identify a present shortfall. Parks and large areas of open space can also serve to maintain strategic gaps between new and existing settlements.

**To include deficiencies and standards of existing and future provision.**

**Refer to ANGST if any deficiencies for this area? Following PPG17 audit? Natural England may be able to assist with this.**

## Contact Details

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