A Green Infrastructure Strategy for Stafford

The Research & Evidence Base

November 2009

Stafford
BOROUGH COUNCIL

Our Green Infrastructure Vision for Stafford

Stafford Borough will have a rich natural environment which is resilient to the effects of climate change, is well maintained and enhanced with more people enjoying the area as a place to live in, work in and visit. Our high quality green infrastructure network of accessible green spaces, waterways and landscapes will enhance our local distinctiveness and heritage, making the Borough an exceptional place for businesses, communities and wildlife – now and in the future.

A Green Infrastructure Strategy for Stafford Borough:

The Research & Evidence Base

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Glossary of Terms

AONB	Area of Outstanding Natural Beauty
CLG	(Department for) Communities & Local Government
Green Infrastructure / GI	A term encompassing all physical resources and natural systems, including ecological, geological and historical assets
Green Gyms	Fitness trails set up along footpaths in natural settings such as parks or woodlands to encourage outdoor exercise
Growth Agenda	The Government's agenda for substantially increased house building across England
Growth Points	Specific areas that have been identified as a focus for increased house building under the Growth Agenda
IMD	Indices of (Multiple) Deprivation: a measure of deprivation across 7 domains – income; employment; health & disability; education, skills & training; barriers to housing & services; crime; the living environment. Produced by CLG in 2004 and revised in 2007
LNR	Local Nature Reserve
MoD	Ministry of Defence
NHS	National Heath Service
NNR	National Nature Reserve
PBRS	Public Benefit Recording System: a GIS based tool that gathers together several different datasets to help guide the strategic decision making process
Public benefits	Social, economic and environmental goals acting in combination
RSS	Regional Spatial Strategy: sets out regional spatial priorities and interventions (including proposals under the Growth Agenda)
SAC	Special Area of Conservation
SPD	Supplementary Planning Document
SuDS	Sustainable Drainage Systems
Sustainable prosperity	Economic growth achieved alongside social inclusion and environmental enhancement

PREFACE

Stafford Borough is identified in the West Midlands Regional Spatial Strategy as including one of the Region's key strategic towns (Stafford town) and has been designated as a Growth Point by the Government. It also has some outstanding urban and rural landscapes, but its development proposals are such that the Borough is under pressure to provide additional homes as well as associated and improved built (or 'grey') infrastructure facilities, and over time will become increasingly under threat from the implications of climate change.

The quality of the environment is an essential component in providing a quality of place for living, working and relaxing, and green infrastructure can be considered as an organising framework for integrating these physical resources and natural systems with socio-economic and environmental evidence: delivering environmental protection and enhancement alongside urban development and regeneration.

Planning for green infrastructure will inform the development of Stafford Borough Council's local plans and strategies such as Local Development Framework documents and Area Action Plans, and will assist the implementation of those plans by providing evidence and information for policy formulation and project development and delivery.

This is one in a suite of three documents that together make up Stafford Borough's Green Infrastructure Strategy:

The Green Infrastructure Research & Evidence Base considers the green infrastructure issues, opportunities and threats in the Borough, identifying the range of assets that are present and where there are gaps or areas of need. It particularly considers the potential impact of growth and built development both on the environment and on communities, and identifies the range of needs and opportunities that may be addressed via green infrastructure interventions.

The Green Infrastructure Strategic Plan uses the findings from the Research & Evidence Base to set spatial and thematic priorities for the delivery of green infrastructure in the Borough. It includes proposed actions that will integrate with development proposals to enhance, expand and protect the Borough's green infrastructure and deliver multiple (social, economic and environmental) benefits that respond to local needs and opportunities.

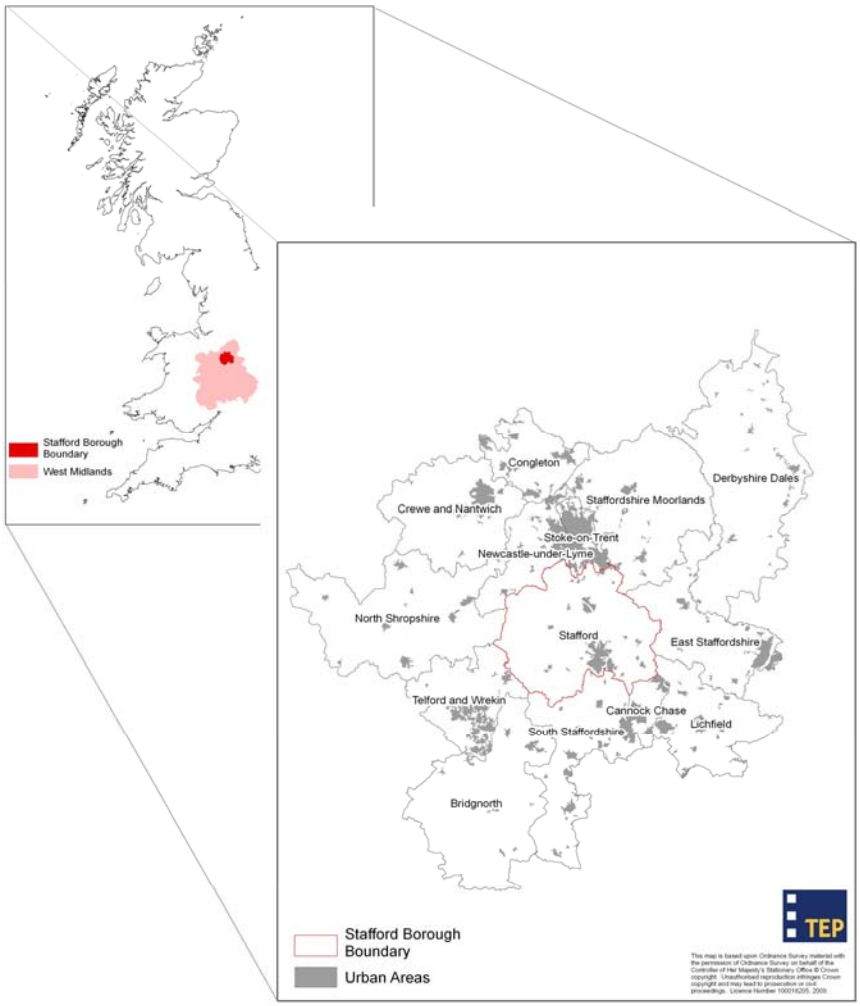
The Green Infrastructure Supplementary Planning Document acts as a guide to planning officers and developers by setting out standards that will be required to meet the Borough's green infrastructure objectives.

All three documents are available from Stafford Borough Council

Chapter 1: Introducing Green Infrastructure in Stafford Borough

Stafford Borough lies within the West Midlands Region. The urban centre of the Borough is Stafford town, which is also the county town for Staffordshire. Population is centred around Stafford town and in Stone, with 60% living in these two major settlements and the remainder spread across the larger villages such as Eccleshall, Gnosall, Great & Little Haywood, Hixon and Barlaston, and surrounding rural areas. To the north of the Borough are the suburban fringes of Newcastle-under-Lyme and Stoke-on-Trent.

Figure 1.1: Stafford Borough location



The Borough's towns are surrounded by countryside and there are some good examples of promoting access to it, such as Barlaston and Rough Close Commons, the privately owned Trentham Park (also popular for water sports), mountain biking in the Milford Common area and the part of Cannock Chase within the Borough. It has diverse ecological assets, including 17 Sites of Special Scientific Interest (SSSIs), 3 Ramsar sites, 4 Special Areas of Conservation and 2 National Nature Reserves, with over 100 sites identified locally as Sites of Biological Importance (SBIs).

The Borough has four designated Historic Parks and Gardens (Trentham Gardens, Sandon Park, Shugborough Park and the German Military Cemetery at Cannock Chase), whilst other designed and non designated landscapes, listed buildings and Conservation Areas contribute to the character of the local environment. Of particular landscape (and biodiversity) significance is the Cannock Chase Area of Outstanding Natural Beauty (AONB) in the south east of the Borough.

Regional Spatial Strategy requirements for Stafford Borough and its designation as a Growth Point means that it will have to accommodate 11,000 new homes by 2026 of which at least 8,000 will be developed at Stafford town, alongside having 40 hectares of readily available employment land every 5 years[i]. These proposals for the Stafford Borough Growth Point are likely to increase pressures on the Borough's landscape as well as present opportunities for enhancing and extending green infrastructure assets. For this to be achieved it is important to ensure that green infrastructure is embedded in the planning process at the earliest stage (responding to the aims of the West Midlands Green Infrastructure Prospectus[ii]).

What is Green Infrastructure (GI)?

There are many definitions of green infrastructure with subtleties that reflect the area they are applied to. We have used the definition from the West Midlands Green Infrastructure Prospectus:

> *"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 describes the network of greenspaces, landscapes and natural elements that intersperse and connect our cities, towns and villages. More than this, it is a holistic approach to viewing the natural and historic environment which acknowledges the *multiple benefits* and *vital functions* it provides for the economy, wildlife, local people and communities alike: in urban situations green infrastructure 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.

Green infrastructure can be seen as part of the life-support system of an area, and may be considered the essence of local character by contributing to local distinctiveness and sense of place.

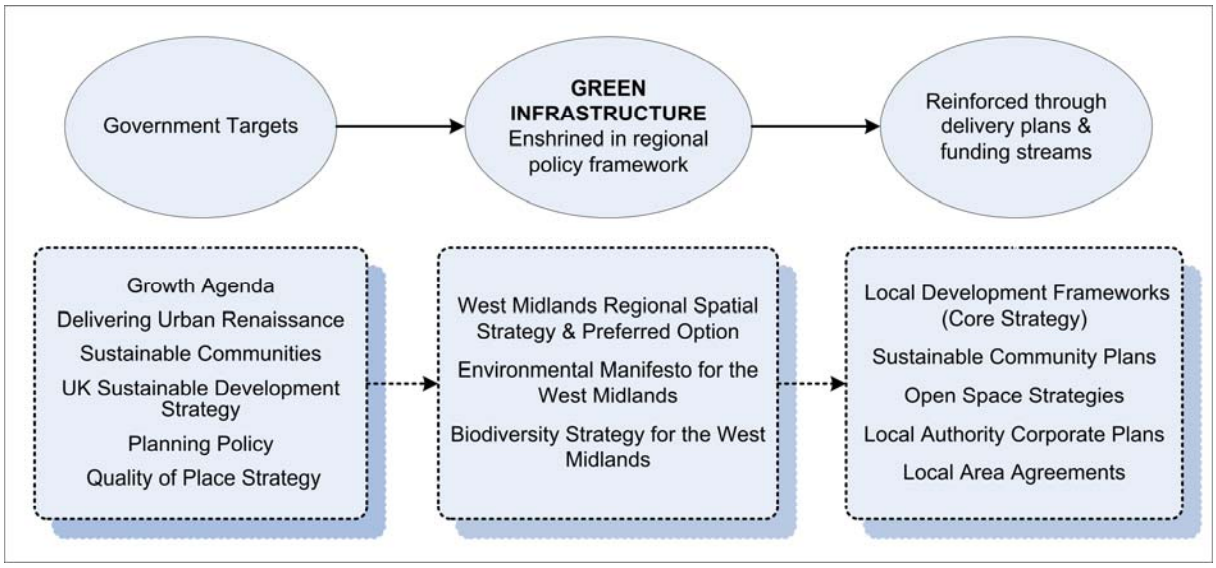
Green infrastructure planning is an approach to land-use planning and management that can be applied from the neighbourhood to the regional level. The approach transcends traditional geopolitical boundaries, and as well as natural features incorporates other aspects such as recreational networks, public rights of way and national cycle routes alongside socio-economic characteristics of an area. Green infrastructure planning can offer low impact and often low cost solutions to many of the issues that affect our environment, society and economy.

Thus green infrastructure is much more than a 're-badging' of greenspace strategy. It is about identifying, protecting, conserving, enhancing and extending healthy environments, and is an essential element in planning for sustainable development. It is also a technique for planning greenspace through change, ensuring that developments such as the Growth Point programmes include new usable open spaces and that these are linked to existing and enhanced green spaces and greenways.

Green Infrastructure in its Policy Context

National, regional, county and local policies all promote green infrastructure, both in terms of its functions; and also as an organising concept for delivering smart growth, and in numerous strategy and policy documents it is implicitly recognised that there are many policy priorities that may be delivered through green infrastructure:

Figure 2.2: Policy Context for Green Infrastructure



It is also recognised as means of sustaining environments and ecosystems in line with statutory requirements of the Habitats and Environmental Assessment Regulations.

Although the policy framework is still evolving, green infrastructure has quickly risen up the political agenda to be referenced in many *national* policy documents, including:

- Our Towns and Cities: The Future - Delivering an Urban Renaissance, 2000 (The Urban White Paper)
- Sustainable Communities Plan, 2003
- Sustainable Communities: People, Places and Prosperity, 2005
- Securing the Future: The UK Sustainable Development Strategy 2005
- Heritage Protection for the 21st Century, 2007 (The Heritage Protection Reform White Paper)
- HM Government's Quality of Place Strategy, 2009

In 2006 and 2007, Communities and Local Government announced a programme of New Growth Points and EcoTowns. Prospectuses for these cite the need for green infrastructure to be considered at the outset of settlement planning. Planning guidance also requires the protection (and building) of environmental capital as a co-product of development and land management, with several Planning Policy Statements (particularly PPS12[iii]) and Planning Policy Guidance notes having particular relevance to green infrastructure.

There are also several high level *regional and sub regional* strategies and policies which have a direct relevance to green infrastructure and its delivery, particularly the West Midlands Regional Spatial[iv], Biodiversity[v] and Health and Well Being[vi] Strategies and the Regional Forestry Framework[vii].

Similarly, at the *local* level there is a strong policy / strategic framework within which green infrastructure is firmly embedded, including Stafford Borough's:

- Council Local Development Framework: Issues & Options Paper[viii]
- Sustainable Community Strategy[ix]
- Biodiversity Strategy[x]
- Open Space, Sport and Recreation Facilities Strategy[xi]
- New Growth Point Programme of Development[xii]

Other policies and strategies exist at national, regional and local levels which also have a bearing on green infrastructure, either supporting green infrastructure principles or setting out thematic priorities and objectives which have relevance to green infrastructure planning. Some of these are discussed in greater detail and with specific reference to this work in subsequent chapters.

Green Infrastructure and Sustainable Prosperity

Sustainable development is defined in the West Midlands Regional Concordat as "ensuring a better quality of life for all, now and in the future"[ixiii]. The Concordat recognises that although economic prosperity is an essential element of quality of life and well-being, other elements such as good health, a pleasant environment, a thriving and inclusive society, high quality employment, decent housing, and living within environmental limits are equally important. Clearly these are functions that green infrastructure can contribute towards.

By planning and managing the multifunctionality of green infrastructure at the landscape scale, and promoting better understanding and enjoyment of green infrastructure assets, a number of important benefits can be realised. These benefits set the context for sustainable prosperity:

- Providing an inspiring setting for economic progress and investment
- Creating a focus for social inclusion, education, training, health and well being
- Reinforcing and enhancing landscape character
- Reversing habitat fragmentation and increasing biodiversity

- Developing a multi-functional landscape and greenspace resource that meets local needs
- Providing attractive and sustainable options for flood control and management
- Safeguarding and enhancing natural and historic assets, between, in and around major communities
- Conserving and improving the quality of the Borough's natural resources (water, air, soil)
- Inspiring cohesive partnership working across a range of disciplines and sectors.

In short, green infrastructure can make a significant contribution to the ability of Stafford Borough to live and prosper within environmental limits. This is in line with the region's vision for green infrastructure to "plan, deliver and manage green infrastructure and create a high quality environment which makes the West Midlands vibrant, prosperous and sustainable"[xiv], and the Borough's desire for "a rich natural environment which is resilient to the effects of climate change, is well maintained and enhanced with more people enjoying the area"[xv].

Chapter 2: DRIVERS FOR CHANGE

The need for a planned, strategic approach to green infrastructure is largely driven by policy requirements and local characteristics and obligations. It is important that we understand these key drivers, so that recommendations can account for and respond to the particular needs and opportunities these present for the Borough. Through a review of key documents and previous research, we have identified four key drivers for change:

- Responding to and Informing Planning Policy
- Delivering Growth
- Achieving Sustainable Communities
- Protecting Natural, Historic and Cultural Assets

Green Infrastructure & Planning Policy

Stafford Borough's development proposals arise out of regional and local planning policy, which also set the broad policy context for green infrastructure in the Region and the Borough, as described in Chapter 1.

The West Midlands Regional Spatial Strategy (RSS)[16] sets the context and priorities for spatial planning across the region. It recognises Stafford as one of the Region's key strategic towns, providing a focus for new investment to support wider regeneration and help meet the economic, social and cultural needs of surrounding rural areas by building on traditional strengths of historic heritage and high quality environment.

Conserving the quality of the environment is stated as a key element in the achievement of sustainable development and implementation of the Regional Spatial Strategy and its vision, where losses of environmental quality are minimised and there is a planned approach to securing higher environmental quality outcomes. The underlying philosophy is that, whilst in some instances the environment may act as a constraint on certain types of development, overall it should be regarded as a major asset to the Region: supporting wider economic and social aspirations and acting as a key component in regeneration. The impact on environmental (natural, built and historic) assets from development, and the need for the creation of new assets arising from development is seen as an important consideration when implementing regional policies on housing, employment, transport, energy, minerals and waste.

The RSS includes several environmental policies under its "Quality of the Environment" theme. Although green infrastructure is not explicitly mentioned (other than in relation to the Black Country) in its current version, the RSS Phase Three Revision[17] recognises the need for and benefits of planning for green infrastructure. It suggests revisions and additions to the current range of policies and associated text that will more explicitly recognise green infrastructure, and particularly recommends that the current Policy QE4 is re-titled "Green infrastructure" which would also set a

requirement on Local Authorities to produce Green Infrastructure Strategies. Other specific references to green infrastructure occur in the following revised policy options:

- Conserving and Enhancing the Environment (Policy QE1)
- Restoring degraded areas and managing and creating high quality new environments (Policy QE2)
- The Water Environment (Policy QE9)
- A new policy on flood risk
- A possible new policy on securing the positive use and improvements of the Green Belt and urban fringe.

At the local level, Stafford Borough's Local Development Framework will set out the policies and proposals for the development and use of land in the Borough. It comprises several documents, although the Core Strategy provides the overarching framework for all other documents that make up the LDF suite, setting out the vision, strategic objectives, locations for strategic development, a delivery strategy and arrangements for managing and monitoring delivery.

The Issues & Options[18] for the Core Strategy were consulted on in Spring 2009. It outlined a spatial vision for Stafford Borough which emphasises the role of green infrastructure in the Borough's future development:

> *"By 2026 Stafford Borough will have retained and enhanced its high quality unique character made up of the County Town of Stafford, the market town of Stone and extensive rural area containing smaller towns and historic villages whilst providing development to meet the local needs of all communities in the area including affordable and quality housing.*
>
> *The Borough will have a rich natural environment which is resilient to the effects of climate change, is well maintained and enhanced with more people enjoying the area through a greater sense of health and well being. A high quality strategic network of accessible green space will have been developed in and around Stafford, Stone and other areas as well as an enhanced and managed built and natural resources providing a clean, safe and fun place to live."*

Key objectives for delivering the Vision are set out for Stafford town, Stone and other settlements; all of these include some measures for the creation, protection and enhancement of green infrastructure resources, including linking settlements with the surrounding countryside, biodiversity and habitat enhancement, and recreational provision.

Green Infrastructure & Growth

Arising from the RSS and Local Development Framework, the Borough will be required to deliver 11,000 new homes by 2026 of which at least 8,000 new homes will be developed at Stafford town, which provides the focus for growth in the Borough. Some strategic sites for development have been identified, with other areas showing a more general 'direction of growth'. These new

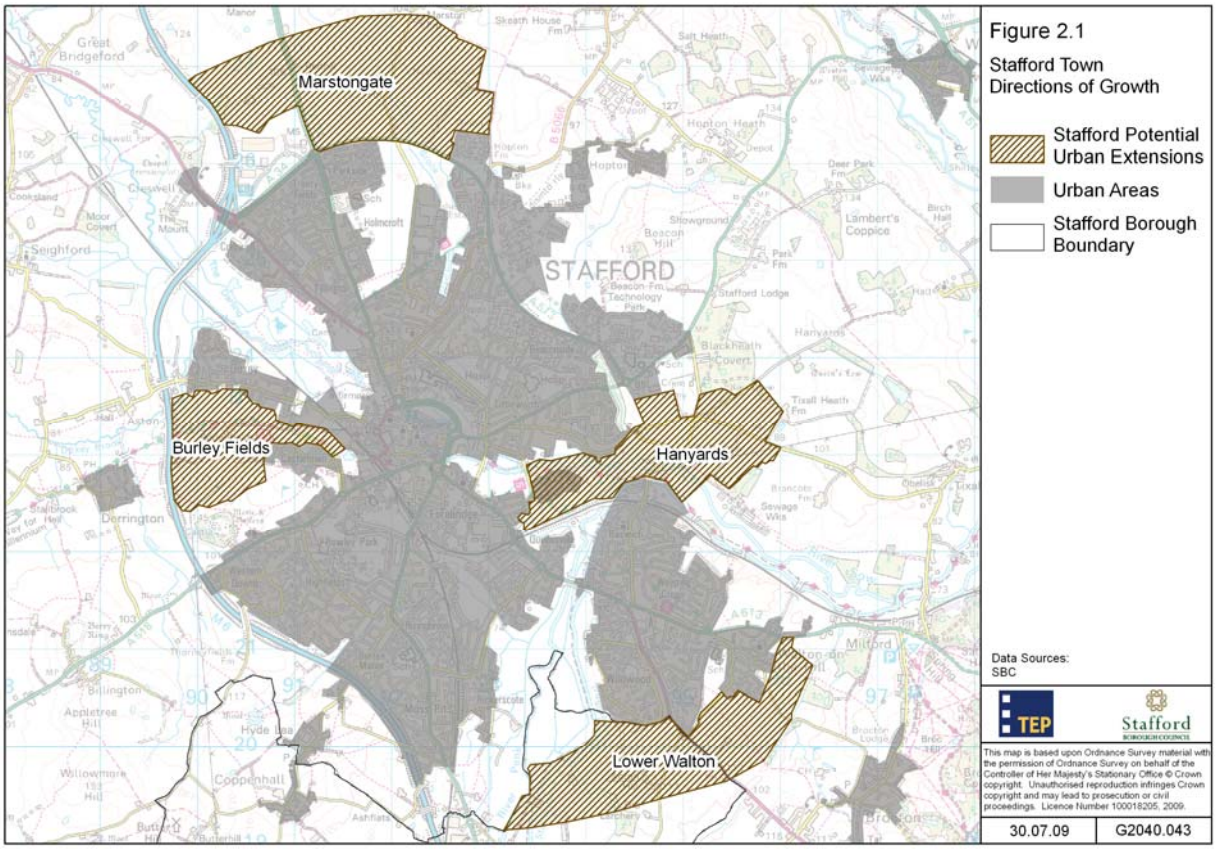
communities will be supported by district centres, health and education facilities, as well as the provision of at least 40 hectares of readily available employment land every 5 years[19].

There are several implications of growth on the Borough's green infrastructure. As the density of built development increases, a corresponding increase in sealed surfaces may contribute to an increase in the already significant risk of flooding. Loss of greenspaces to built development can negatively impact on biodiversity, directly through loss of habitat and indirectly through disruption to natural corridors and processes. Any built development will also have to be sensitively designed to fit with the Borough's high quality landscapes and cater for human needs: for recreation, to combat risks associated with climate change, for health and well being, and for a high quality of place in which to live, work and play.

There are also consequences for the Borough's biodiversity. A comprehensive ecological desk top study[20] examining relationships between priority species and Habitats (including Protected and Biodiversity Action Plan Species and Habitats) and those areas proposed for housing and employment development around Stafford, Stone, Eccleshall, Gnosall, Hixon, Great Haywood, Little Haywood and Haughton. This study highlighted priority habitats of county conservation significance, and made recommendations on a site by site basis for the avoidance or mitigation of potential impacts on habitats and species and highlighting opportunities to enhance biodiversity on all sites.

The concept of new development bringing economic, social and environmental benefits was set out by the Countryside Agency, which developed the idea of "Concept Statements[21]"as a tool for Local Authorities in planning new developments. These were intended to provide a simple, clear expression of the kind of place that new development should create, describing how development should contribute to Local Authority objectives (vision and policies) to deliver economic, social and environmental outcomes. With the same broad purpose, Green Infrastructure Concept Statements have been prepared for four potential 'directions of growth' around Stafford town as illustrated in Figure 2.1.

These Concept Statements respond to the need for high quality green infrastructure to create liveable, functioning spaces that are sustainable and incorporate development within these identified strategic development areas. They consider green infrastructure assets, opportunities and constraints across four themes[22], before setting out a green infrastructure vision for the area that respond to specific growth proposals as the first consideration within any development proposal.



Natural England considers green infrastructure to be a primary consideration in planning, developing and maintaining new development, with a policy statement[23] that "necessary housing growth should be accommodated with minimum impact on the natural environment and deliver maximum benefits for the natural environment and people together." It sets out guidelines for Growth Point areas which outline a "Green Test"[24] against which all new developments should be measured:

Natural England's Green Test for New Developments

All new developments should feature green infrastructure which:

1. Provides greenspace within 300m of every home
2. Supports an increase in priority species and habitats in and around new developments
3. Provides a wide variety of parks, wild areas and open spaces to meet the needs of both nature and people
4. Equips new development to cope with the effects of climate change and extreme weather events
5. Is designed to ensure it fits into any surrounding countryside and into its landscape setting.

The principles within the Green Test, and the priorities highlighted in the Green Infrastructure Concept Statements will guide our analysis of the potential impacts of growth in Stafford Borough, informing our assessment of the needs and opportunities that growth proposals bring to the Borough.

Green Infrastructure & Sustainable Communities

Guidance from the Commission for Architecture & the Built Environment (CABE)[25] describes sustainable communities as "places that people like living in, and want to stay in, neighbourhoods with real character and sense of place". It states that, to be successful, these places must have well-designed green spaces that can offer lasting economic, social, cultural and environmental benefits.

Green infrastructure has a central role in the regeneration of communities, the sustainability of prospering settlements (including future development) and sustaining and improving quality of life for those who live in, work in and visit Stafford Borough. By planning and managing the multifunctionality of green infrastructure at the landscape scale, a number of important benefits can be realised.

Stafford Borough's Sustainable Community Strategy[26] describes a vision and sets out four key aims for the Borough that reflects the benefits that green infrastructure can bring in achieving sustainable communities:

- To have a vibrant, prosperous, sustainable economy and environment
- To have a Borough where all community members are safe and feel safe
- To have a protected and enhanced environment
- To be a Borough where all feel included in society, live longer, healthier and more contented lives.

The Strategy interweaves environmental measures across all four aims, clearly appreciating many of the functions of green infrastructure such as the importance of a good location in securing inward investment and attracting/retaining a skilled workforce, implications in relation to climate change adaptation and mitigation, habitat creation for biodiversity, community engagement in local environmental activities.

One of the key issues in the Sustainable Community Strategy was the need for quality accessible greenspaces to enhance community health and well being. Stafford Borough's PPG17 Assessment and Strategy[27] has identified however that there is a number of deficiencies in both the quality and quantity of provision of a range of green space typologies in some parts of the Borough. That assessment identified a range of strategic issues facing the Borough and made several recommendations on how these should be addressed. Many of these have a direct relationship with the principles of green infrastructure planning, including:

- Recognising and protecting the fundamental role of biodiversity and nature conservation in the future quality of the life in the Borough
- Introducing climate change measures that include landscape design and management, incorporation of sustainable drainage systems in new developments, tree planting, and the design and layout of natural elements within new developments
- Thinking creatively to provide high quality open spaces in the right place that can promote integration and ensure equity between new and existing residents
- Taking measures to link different initiatives and programmes that can deliver mutual benefits and shared outcomes, such as cycling and walking, health, biodiversity, regeneration and air quality
- Working positively and creatively with developers, including setting and allocating developer contributions.

The PPG17 Assessment also recognises the integral role of green infrastructure alongside built infrastructure such as roads and utilities in meeting additional demand pressures brought about by growth proposals. It goes on to recommend that a green infrastructure strategy should be developed using the evidence base that accompanies the PPG17 and joining up with other key strategies and their related evidence.

Consultation[28] has indicated that 78% of residents living in the Borough are worried about the potential threat of climate change, whilst comments focusing on the consideration of flooding on existing and future developments were received from consultation for the LDF's development. The River Trent is one of the Borough's key green infrastructure assets. It roughly dissects the Borough and is the main watercourse, with the Trent & Mersey Canal alongside and main tributaries including Scotch Brook, Aston Lodge Brook and the River Sow. Although the Trent's floodplain is relatively wide, it is mostly undeveloped at present allowing the natural floodplain to remain. However, Stafford Borough's Strategic Flood Risk Assessment (SFRA)[29] identifies several areas where properties are at significant risk[30] of flooding, including:

- Stafford town centre: although relatively few properties are located within Flood Zone 3a, a greater extent of the town centre is contained within Flood Zone 2[31]
- The confluence of the River Trent and Scotch Brook in Stone
- Trentham Gardens and Pleasure Grounds
- Burston, where the Jolpool Brook joins the River Trent
- The confluence of the rivers Trent and the Sow, and many arterial drains
- Church Eaton, in relation to Doxey Brook.

The SFRA aims to define flood risk management objectives and identify key policy considerations that should be taken into account and used to strengthen or enhance development control policies. Four of the five objectives outlined include interventions that could be best managed and delivered via a coherent and strategic approach to green infrastructure planning and management:

Flood Risk Objective 1: To Seek Flood Risk Reduction through Spatial Planning and Site Design

- Informing development proposals by recommending the inclusion of recreation, amenity and biodiversity areas that can provide effective means of flood risk management alongside the social and environmental benefits connected green spaces can provide

Flood Risk Objective 2: To Reduce Surface Water Runoff from New Developments and Agricultural Land

- Exploring design standards such as the inclusion of SUDS (Sustainable Urban Drainage Systems) on all new development, as well as features such as balancing ponds to manage surface water disposal while delivering water quality and biodiversity benefits.
- The promotion of Environmental Stewardship schemes to reduce water and soil runoff from agricultural land.

Flood Risk Objective 3: To Enhance and Restore the River Corridor

- Provisions for avoiding further culverting and building over of culverts, and for de-culverting rivers for flood risk management and conservation benefit.
- Further enhancement of river corridors (particularly their biodiversity function) through a suggested 8 metre wide undeveloped buffer strip achieved by setting development back from rivers.

Flood Risk Objective 4: To Protect & Promote Areas for Future Flood Alleviation Schemes

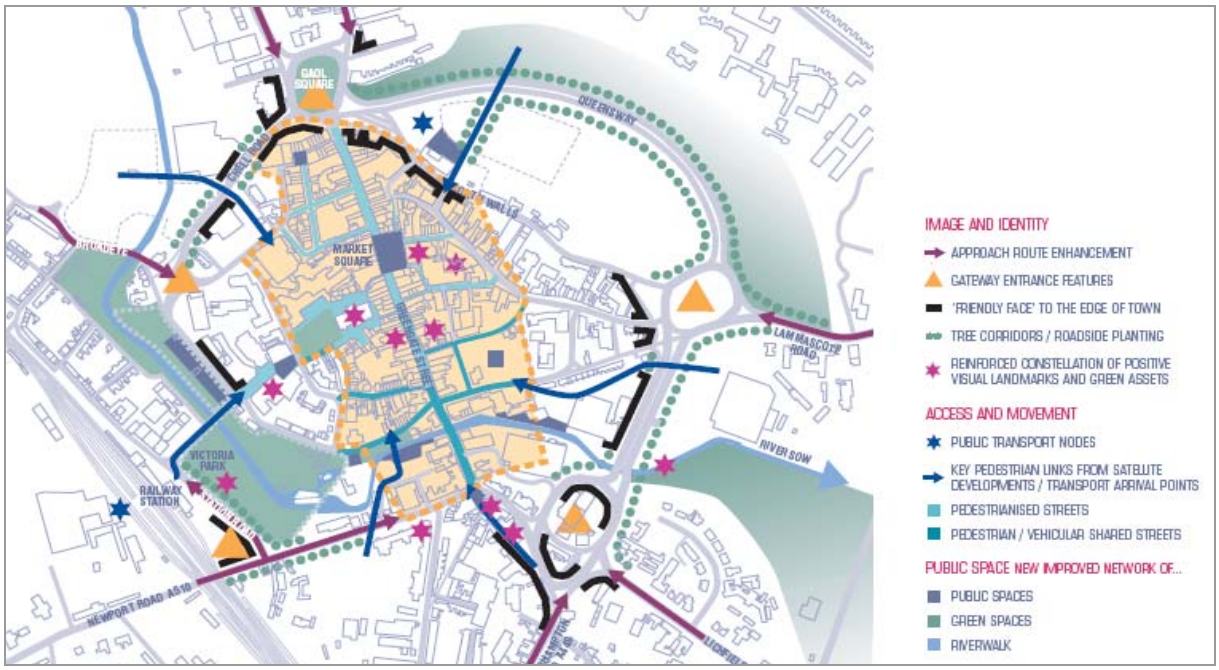
- Protection of greenfield functional floodplain from future development (the Borough's "greatest flood risk management asset") and reinstating areas of functional floodplain which have been developed.
- Identify where developer contributions could be used to fund future flood risk management schemes or to reduce risk for surrounding areas

Green Infrastructure & Natural, Historic and Cultural Assets

Stafford Borough contains many natural, historic and cultural assets, from the town centres of Stafford and Stone, to the open countryside and villages that intersperse it. A planned green infrastructure approach will help to make connections between these assets, enhance individual areas and thereby contribute to the Borough's 'quality of place' and local distinctiveness.

The Stafford Town Centre Vision[32] aims to increase the attraction and competitiveness of the town centre by recognising its strengths and weaknesses, and identifying opportunities that reflect its distinctive historic character. The 'Urban Design Framework' diagram (figure 2.2) illustrates the central role green infrastructure interventions have, particularly in relation to image and identity (street trees and green assets) and public space networks (particularly the River Sow and Victoria Park).

Figure 2.2: Urban Design Framework for Stafford



The Vision for Stone town centre[33] is to create "a quality place for shopping, working, living and playing and to promote an economical, social and environmental sustainable town centre for the 21st Century and beyond". A high quality urban environment is a central aspect, reflected within goals for image and identity, access and movement ("improving the environment for cyclists and pedestrians') and public spaces and activities ("preserving, enhancing and integrating quality green open spaces").

Outside of the urban areas, the Borough's rural landscapes are of a distinctive character and include part of the Cannock Chase Area of Outstanding Natural Beauty (AONB) to the south, valuable wetland (Doxey and Tillington Marshes) and lowland heath (Cannock Chase and Rough Close Common) habitats, and four designated Historic Parks and Gardens (Trentham Gardens, Sandon Park, Shugborough Park and the German Military Cemetery). These landscapes also provide a setting for the Borough's 819 listed buildings, 30 Conservation Areas, and 43 Scheduled Ancient Monuments.

The County's Supplementary Planning Guidance on landscape and landscape character[34] sets policy objectives for the County's landscapes. Within Stafford Borough, the objectives are largely for landscape restoration or landscape maintenance. However, there are areas immediately to the north west and south east of Stafford town and stretching along the Trent Valley south of Stone that are shown as areas where the landscape is at risk of rapid loss of character and quality.

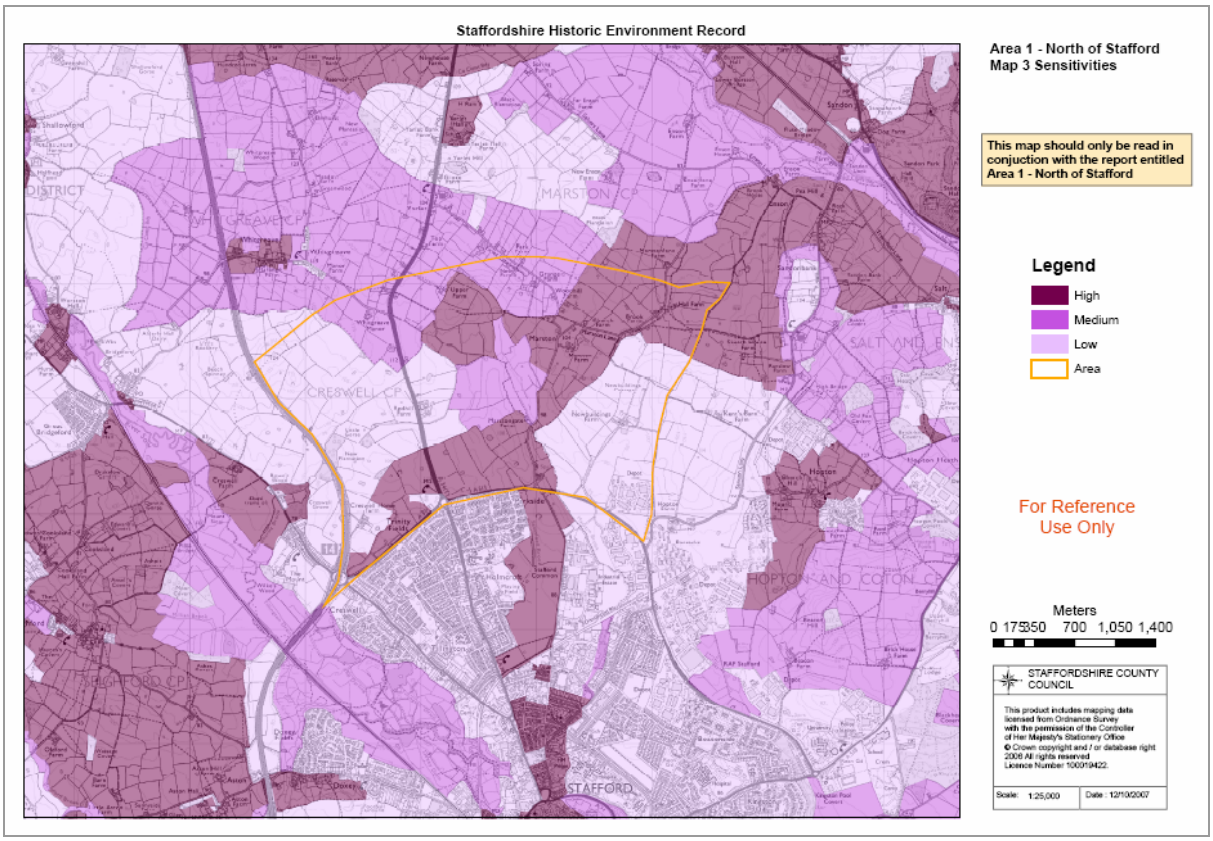
Stafford Borough's Historic Environment Character Assessment (HECA) [35] identifies the potential risk to these historic assets (landscape features and built structures) as a result of planned development in the Borough. It found that in some areas medium to large scale development would have a considerable impact on the historic environment, and sets out for each Historic

Environment Character Area and Zone measures that should be taken should development be planned in that area, such as:

- The impact upon designated sites, Scheduled Monuments (e.g. Creswell Chapel), earthworks, Listed Buildings and Conservation Areas
- The impact upon the relationship between particular historic landscape character types and settlement patterns
- The impact upon potential below ground archaeological deposits
- The impact upon the setting of such assets (such as Bury Ring Hillfort, a Scheduled Monument that lies above the surrounding landscape)
- Any potential mitigation strategies which may be required.

The relative level of sensitivity to development in each Area/Zone has been mapped, as in figure 2.4 which shows the sensitivity of the historic landscape in the Zone to the North of Stafford. Green infrastructure planning must respond to this, accounting for the high value of these landscapes and the potential risk they face from development.

Figure 2.4: Historic Landscape Sensitivities (north of Stafford)



In addition to its significant heritage and landscape assets, Stafford Borough also has important biodiversity assets, including:

- 3 Ramsar sites (internationally designated sites under the Convention on Wetlands of International Importance): Aqualate Mere, Chartley Moss and Cop Mere

- 4 Special Areas of Conservation (SACs): Cannock Chase, Mottey Meadows (both in part), Chartley Moss and Pasturefields Salt Marsh
- 2 National Nature Reserves (NNRs): Chartley Moss (a floating bog) and Aqualate Mere, the largest of the Shropshire, Cheshire and Staffordshire natural meres
- 17 Sites of Special Scientific Interest (SSSIs)
- More than 100 locally designated Sites of Biological Importance (SBIs).

Valuable habitats in the Borough include ancient (veteran) trees, old semi-natural woodlands, various types of wetland such as Doxey and Tillington Marshes, lowland heath on Cannock Chase and Rough Close Common and a few remaining flower-rich meadows on neutral grassland. The Borough also includes the Cannock Chase – Sutton Park Biodiversity Enhancement Area, identified for its biodiversity interest in the Regional Spatial Strategy (policy QE7 – currently under consultation[36]). The often isolated nature of these habitats, which can occur in urban locations or between larger areas of intensively farmed land, makes them susceptible to degradation or loss.

Responsibilities under the Natural Environment and Rural Communities Act 2006 (NERC) create a duty for every public authority to conserve biodiversity, aiming to raise its profile and visibility and make it a natural and integral part of policy and decision making. As a European designated site Cannock Chase SAC (of which 886.81 ha - approximately $^{2}/_{3}$ of the SAC's total area – lies within the Borough) is also subject to Habitat Regulations Assessment/Appropriate Assessment. This requires the assessment of impacts of land-use plans and projects against conservation objectives of the site and examines whether there will be an adverse affect on its integrity. The Appropriate Assessment of each individual District's Core Strategy in relation to the Cannock Chase SAC[37] has highlighted that increasing future demands for recreation[38] and housing could create conflict between the needs of people and the needs of the environment. It goes on to state that mitigation measures must be put in place to properly manage any such impacts and so minimise potential negative effects.

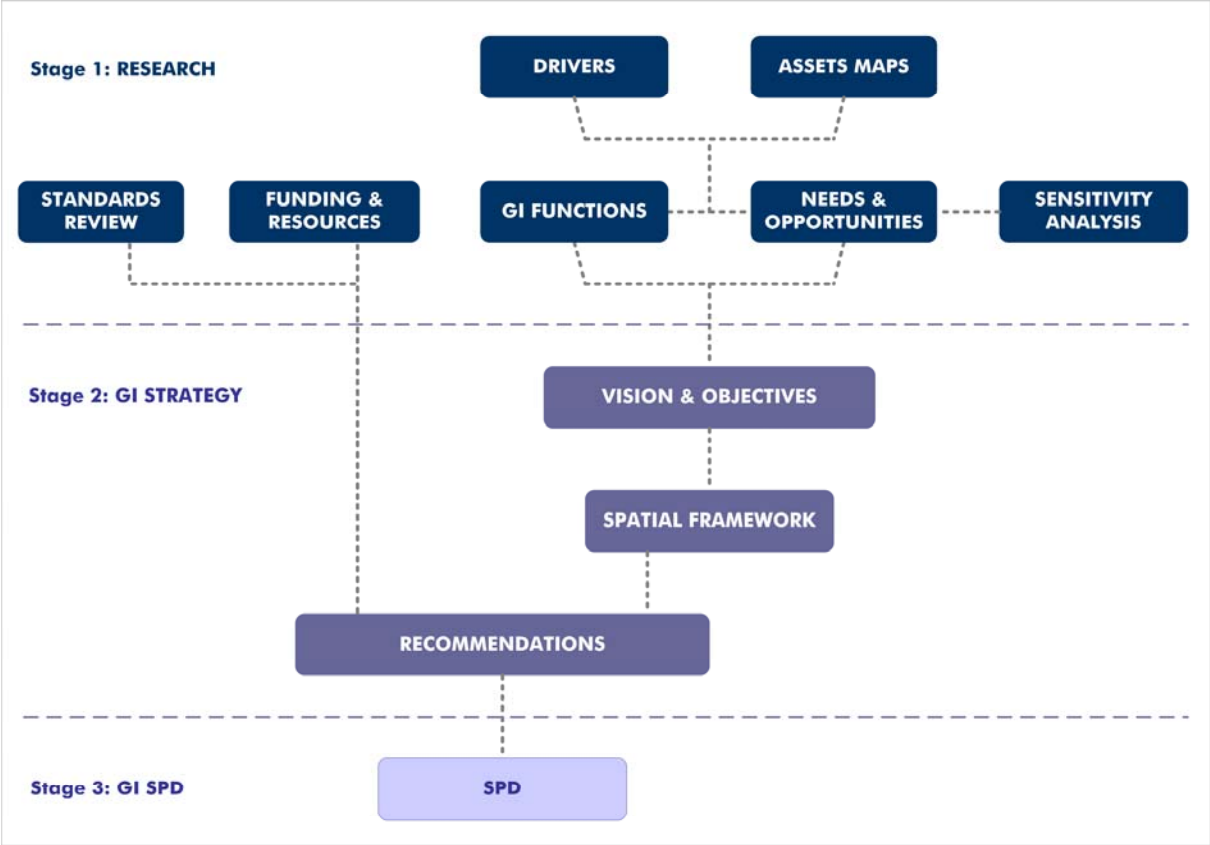
The Council has been recognised by the Staffordshire Biodiversity Action Plan[39] as demonstrating good practice in its efforts to establish and implement an effective biodiversity programme. Early discussions about the core strategy for the Local Development Framework have taken place in Stafford Borough between the Borough Council, Natural England and the Staffordshire Wildlife Trust. These discussions have identified where the green infrastructure including cycle and walk ways and habitat links can be created or enhanced. Potential development sites have been assessed for existing and probable nature conservation issues, and where possible likely avoidance or mitigation measures have been identified.

The West Midlands Biodiversity Partnership has also recently developed the 'West Midland Biodiversity Pledge' in response to NERC, which Stafford Borough Council has signed up to. This Pledge acknowledges the vital role that biodiversity and the natural environment have in enhancing wellbeing & quality of life, whilst recognising that biodiversity is under threat from climate change and other pressures.

From Drivers to Recommendations

Alongside the assets mapping, this analysis of the key drivers for a Green Infrastructure Strategy will provide a context for our understanding of green infrastructure functions, needs and opportunities in Stafford Borough. These will in turn inform the Vision and Objectives for green infrastructure and the spatial framework for GI planning.

Together with the analysis of standards and delivery options, these will provide the framework for setting recommendations for enhancing, protecting and creating green infrastructure in the Borough.



Chapter 3: GREEN INFRASTRUCTURE ASSETS

This chapter explores green infrastructure in Stafford Borough, using a range of information sources to identify and map existing green infrastructure resources and assets, and to examine the socio-economic context in which the assets exist.

Green infrastructure assets are areas or features which, by virtue of their location, their use or their management, serve one or more functions of social, economic or environmental public benefit. Assets can be spaces, linear features, landscapes or other broader environmental features, and can include:

- Green spaces with or without designation
- Water courses and water bodies (including small ponds & ditches)
- Land under Countryside / Environmental Stewardship or other management regimes
- Parks, gardens and heritage features
- Access network, including footpaths, cycle ways and promoted paths
- Woodlands, allotments, playing fields, cemeteries

This will provide the basis for our assessment (in Chapter 4) of green infrastructure functions, issues and the drivers for change affecting green infrastructure in Stafford Borough. It also informs our understanding of green infrastructure needs and opportunities, particularly via the Public Benefits Assessment (Chapter 5).

Existing Green Infrastructure Resources and Assets

A variety of existing datasets and sources of information have been used to identify and map the distribution of green infrastructure assets within Stafford Borough, including:

- PPG17 Assessment and Open Space, Sport & Recreation Facilities Strategy[40]
- Historic Environment Character Assessment[41]
- Land use/cover (MasterMap), Landscape features and Access corridors
- Existing green space and historic environment assets and their formal designations
- Other green space and historic environment assets without any formal designations
- Flood Risk (Environment Agency flood zones 2 and 3)
- Potential areas for development under Growth Point proposals

Using these information sources and datasets, we have mapped the existing green and blue resource and asset provision at Borough and Stafford town scales (figures 3.1and 3.2).

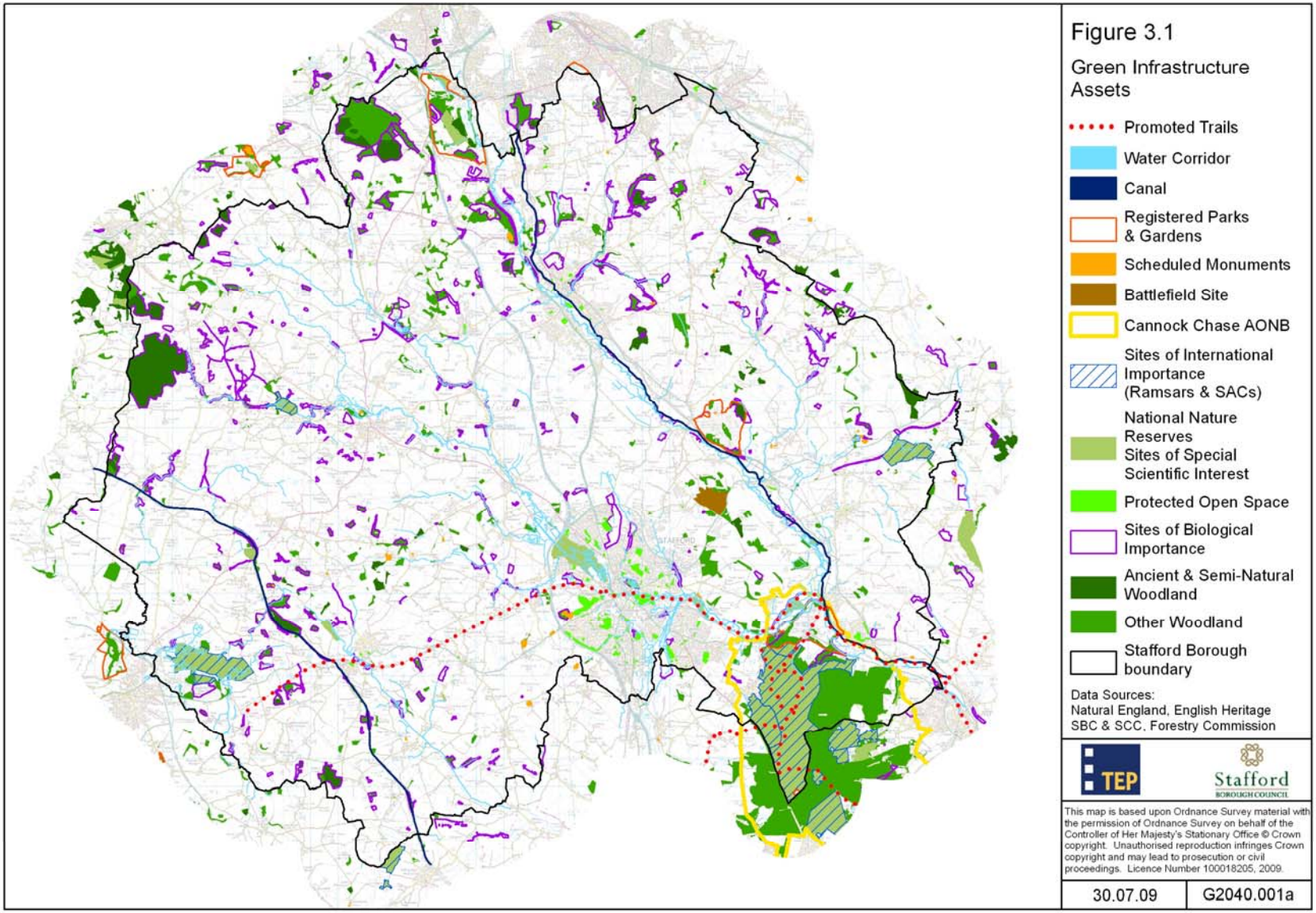


Figure 3.1
Green Infrastructure Assets
Promoted Trails
Water Corridor
Canal
Registered Parks & Gardens
Scheduled Monuments
Battlefield Site
Cannock Chase AONB
Sites of International Importance (Ramsars & SACs)
National Nature Reserves
Sites of Special Scientific Interest
Protected Open Space
Sites of Biological Importance
Ancient & Semi-Natural Woodland
Other Woodland
Stafford Borough boundary
Data Sources:
Natural England, English Heritage
SBC & SCC, Forestry Commission
TEP
Stafford
BOROUGH COUNCIL
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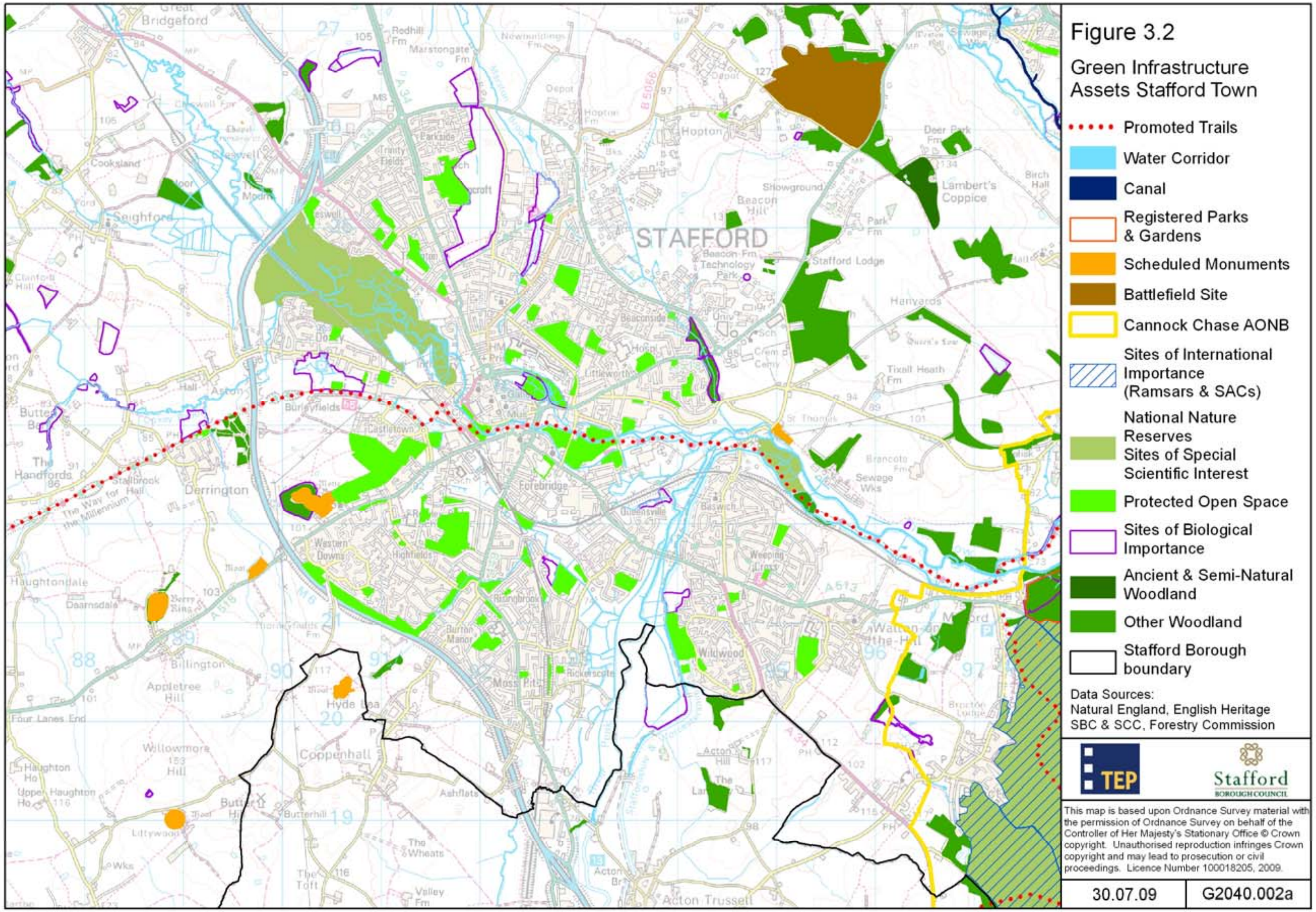
Figure 3.2
Green Infrastructure Assets Stafford Town
Promoted Trails
Water Corridor
Canal
Registered Parks & Gardens
Scheduled Monuments
Battlefield Site
Cannock Chase AONB
Sites of International Importance (Ramsars & SACs)
National Nature Reserves
Sites of Special Scientific Interest
Protected Open Space
Sites of Biological Importance
Ancient & Semi-Natural Woodland
Other Woodland
Stafford Borough boundary
Data Sources:
Natural England, English Heritage
SBC & SCC, Forestry Commission
TEP
Stafford Borough Council
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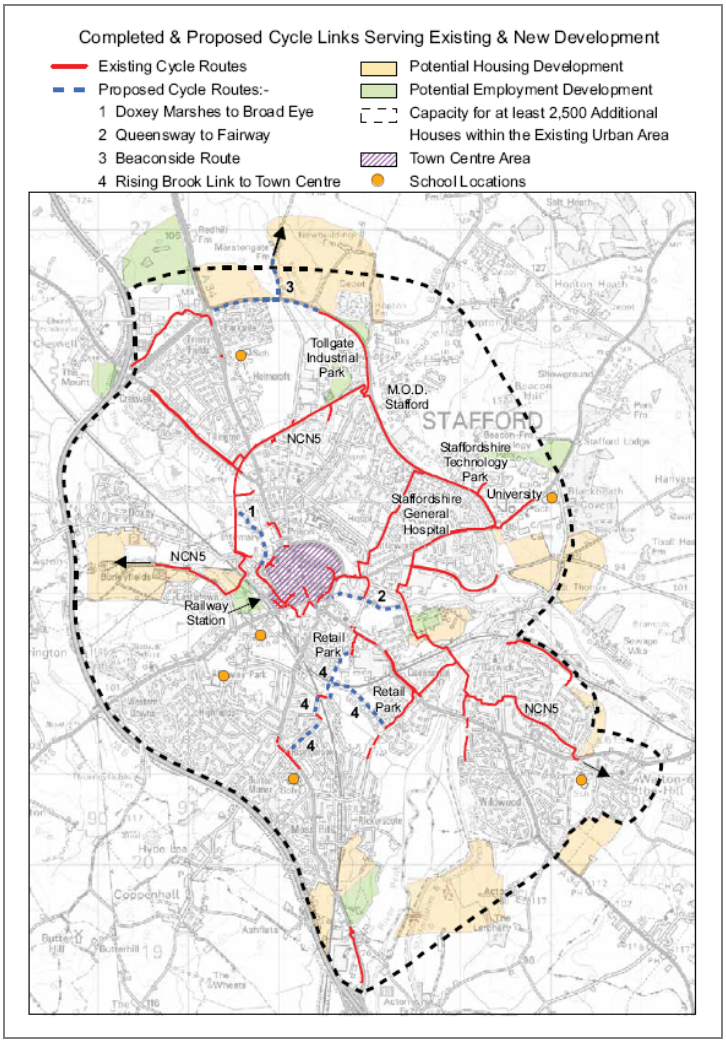
Stafford Borough is relatively rich in terms of its natural assets (see figure 3.1), with 1,543 designated as Sites of Special Scientific Interest (SSSI), of which 385ha also have RAMSAR and 1,001ha Special Area of Conservation (SAC) status. Of particular note is the Cannock Chase Area of Outstanding Natural Beauty (AONB) and SAC in the south east of the Borough, which includes Shugborough Park and provides the Borough's largest area of green space. Other larger sites include Aqualate Mere National Nature Reserve (NNR) (comprising the largest natural lake in the region, reedbeds, woodland and low lying wetland), Bishops Wood, Swynnerton Old Park, Trentham Gardens and Sandon Park and Woods. The Borough also contains Aqualate Mere: a Ramsar site, part NNR and geological SSSI. It is the largest of the West Midlands meres and is unrivalled in Staffordshire for its variety of natural features of special scientific interest and the esker formation on the north side of the mere is of national geomorphological importance.

Among a range of relatively large green infrastructure assets within Stafford town the most significant is Doxey & Tillington Marshes SSSI, which covers 120ha in the north west of the town (see figure 3.2). As well as its biodiversity value (the site is a designated SSSI) Doxey Marshes acts as a floodplain to the River Sow, provides a 'green wedge' landscape feature between adjacent residential communities and leading up to the M6 motorway, and is a recreational resource for local populations - although recreational access is controlled (due to the sensitivity of the site's natural features). Other key sites include the castle and its grounds, Victoria Park in the town centre and Kingsmead Marsh Local Nature Reserve (LNR). There are also areas of 'coastal and floodplain grazing marsh' Priority Habitat entering the town from the east along the river corridor, and to the north east of the town (north of Beaconside).

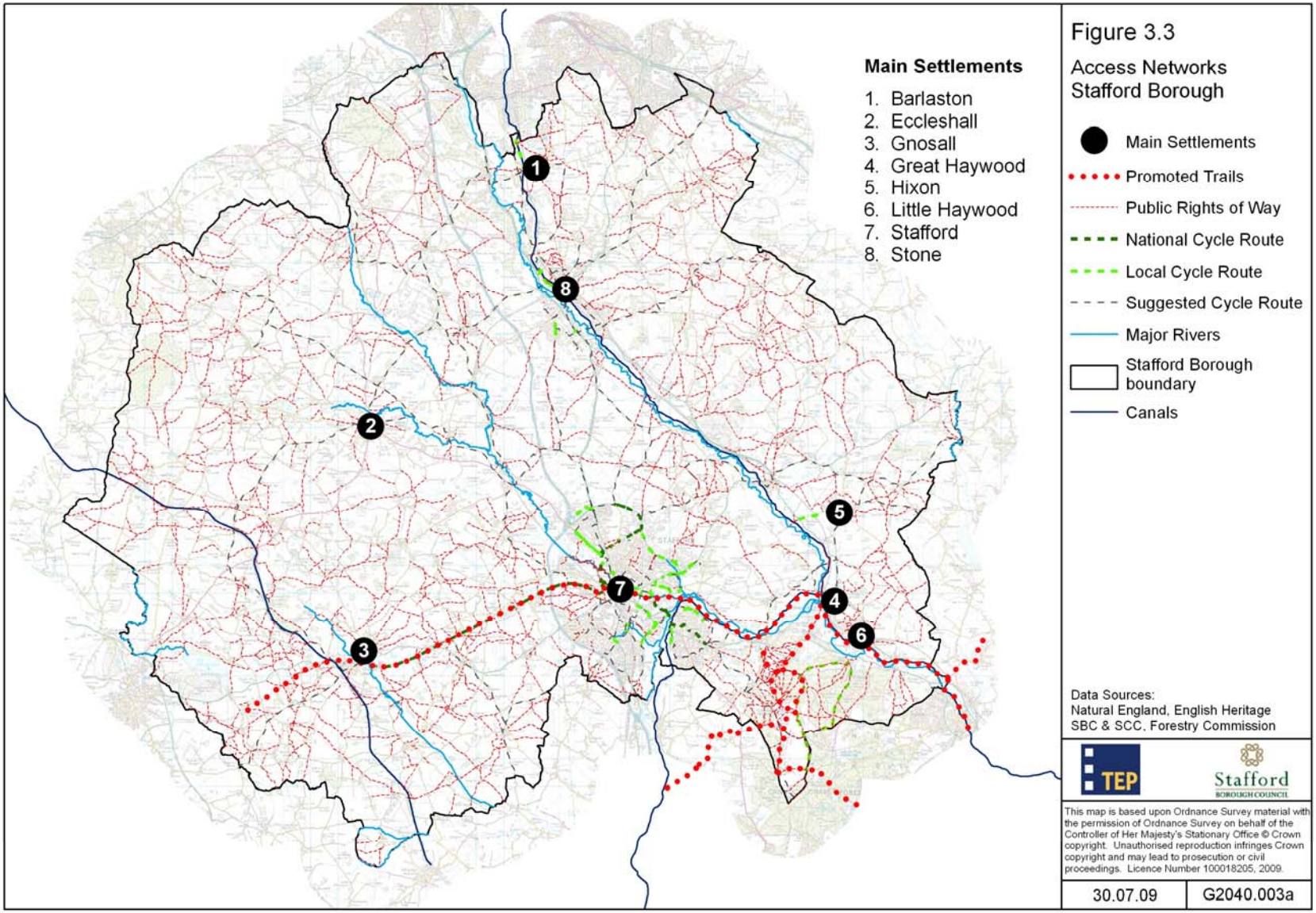
Natural assets otherwise tend to be scattered across the Borough, although there are some clusters of note. Of particular interest are the arc of fragmented woodland and other natural assets that stretches from Swynnerton Old Park across the northern parts of the Borough and including Kings Wood and Tittensor Chase, and the cluster of woodlands on and beyond the western edge of the Borough from Bishops Wood north. The potential for land management changes and habitat enhancement/expansion should be considered in these areas to create a natural resource that is more resilient to climate change, provides an improved habitat for wildlife, and provides a greater recreational resource for neighbouring populations (including those over the Borough's border in North Staffordshire and Newcastle-under-Lyme).

Figure 3.3 illustrates the spatial arrangement of existing access routes across the Borough, highlighting the location of the main settlements in relation to these. The Borough's Public Rights of Way network is extensive, spreading across the rural parts of the Borough, and particularly featuring in the south west corner around Cannock Chase AONB. The more 'strategic' routes (cycle networks and promoted trails) tend to be concentrated in the south of the Borough, and particularly in and around Stafford Town (see figure 3.4), providing good connections between the town and the southern villages (Gnosall, Great Haywood and Little Haywood). The Worcestershire Canal towpath also provides a link between Barlaston, Stone and the Haywoods and links with Stafford town via the Stafford to Newport Greenway, whilst the proposed cycle route between Hixon and Great Haywood would connect Hixon to the wider network.

Despite this relatively good access network there are gaps, particularly for Eccleshall which currently has no sustainable transport links to other settlements. The limited availability of public transport to the outlying settlements and/or the need to travel outside settlements to services that are only available in the larger settlements such as GP surgeries and schools leads to greater dependence on car travel (as identified in Stafford Borough's Infrastructure Study[42]). As housing development gets underway, there will also be greater demands for recreational routes between settlements and to the wider countryside. That study also highlights the need for greater provision of sustainable transport routes within Stafford town in response to the growth proposals, concentrating on the provision of 4 new cycle path links within the town:



Complementary to these town centre improvements, provision of an additional access route could also help address the dual issues of recreational and provision of sustainable transport options: linking Eccleshall to Gnosall and Stone would create a circular route that incorporates the Canal towpath, the AONB and the promoted trails in the south of the Borough and extending beyond the Borough's boundaries. This could be promoted as a recreational trail and also provide sustainable access options for residents of Eccleshall travelling to services in Stone.


Main Settlements
1. Barlaston
2. Eccleshall
3. Gnosall
4. Great Haywood
5. Hixon
6. Little Haywood
7. Stafford
8. Stone
Figure 3.3
Access Networks
Stafford Borough
Main Settlements
Promoted Trails
Public Rights of Way
National Cycle Route
Local Cycle Route
Suggested Cycle Route
Major Rivers
Stafford Borough boundary
Canals
Data Sources:
Natural England, English Heritage
SBC & SCC, Forestry Commission
TEP
Stafford
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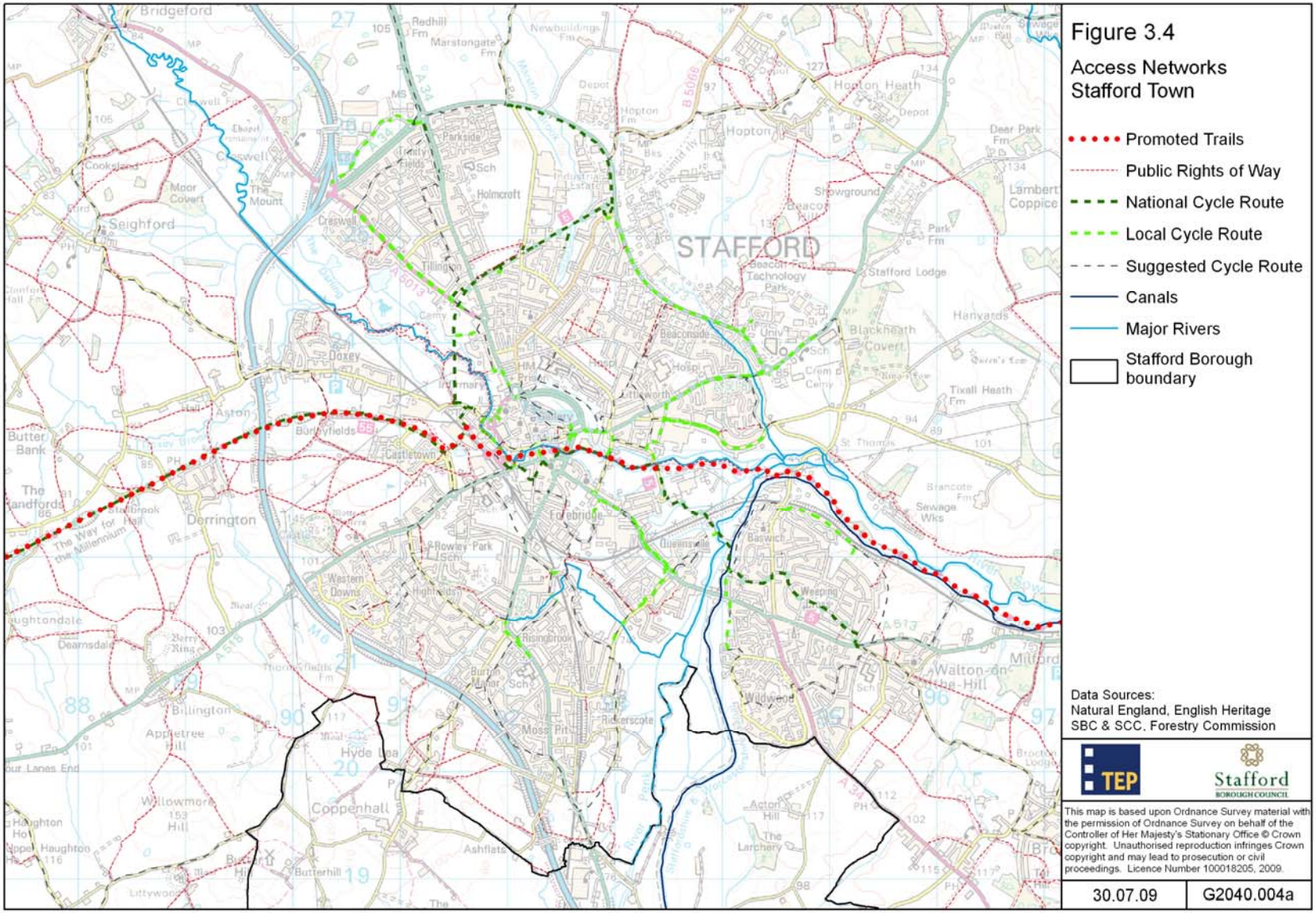
Figure 3.4
Access Networks
Stafford Town
Promoted Trails
Public Rights of Way
National Cycle Route
Local Cycle Route
Suggested Cycle Route
Canals
Major Rivers
Stafford Borough boundary
STAFFORD
Bridgeford
Seighford
Derrington
Coppenhall
Walton-on-the-Hill
Data Sources:
Natural England, English Heritage
SBC & SCC, Forestry Commission
TEP
Stafford
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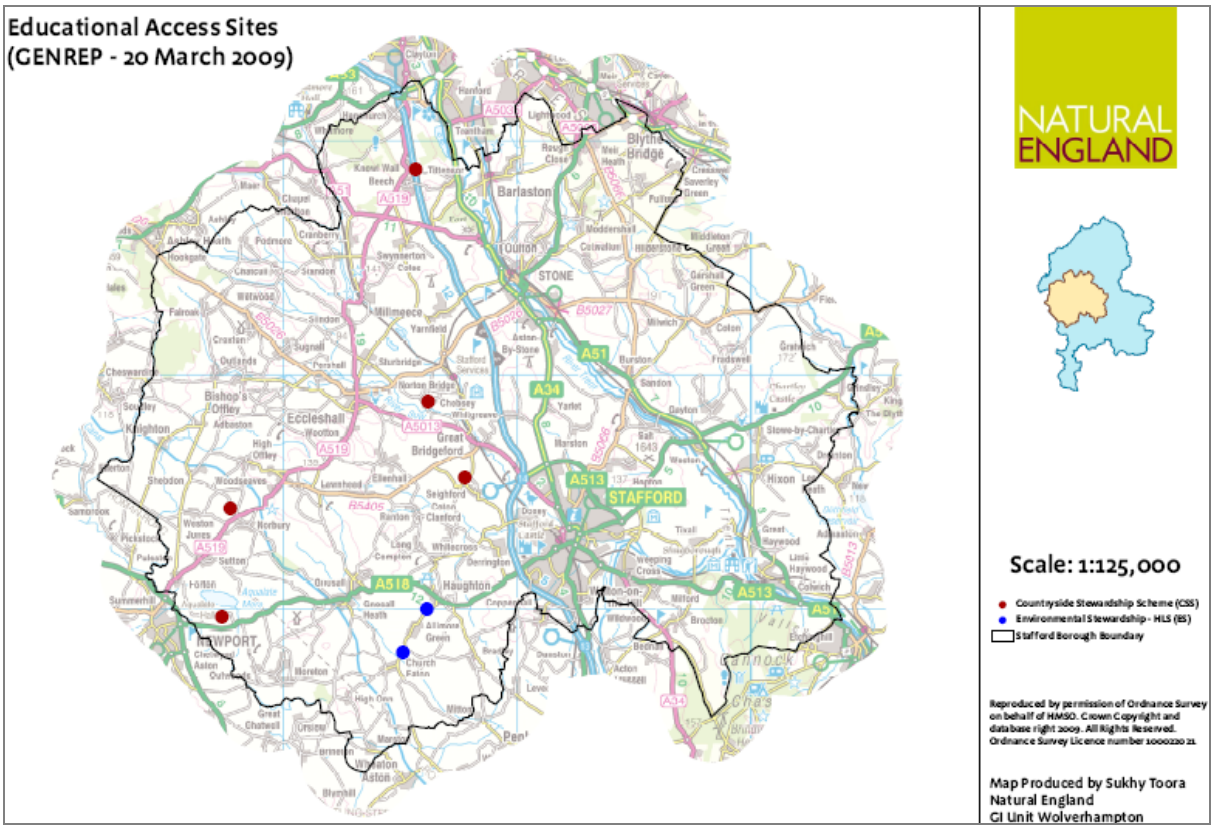
Three target areas for Higher Level Stewardship cover parts of the Borough: the Staffordshire Washlands, Meres & Mosses and Shropshire Wealds. All three are valuable for their biodiversity and historic environment (landscape features, earthworks and archaeological remains) as well as resource protection (Meres & Mosses and Shropshire Wealds) and access (Meres & Mosses). There are also a significant number of Environmental and Countryside Stewardship agreements across the Borough, although these predominantly do not include provisions for public access (figure 3.5). However, there are some that include educational access, as shown in the image below (provided by Natural England). Several Woodland Grant Schemes are also scattered across the Borough.



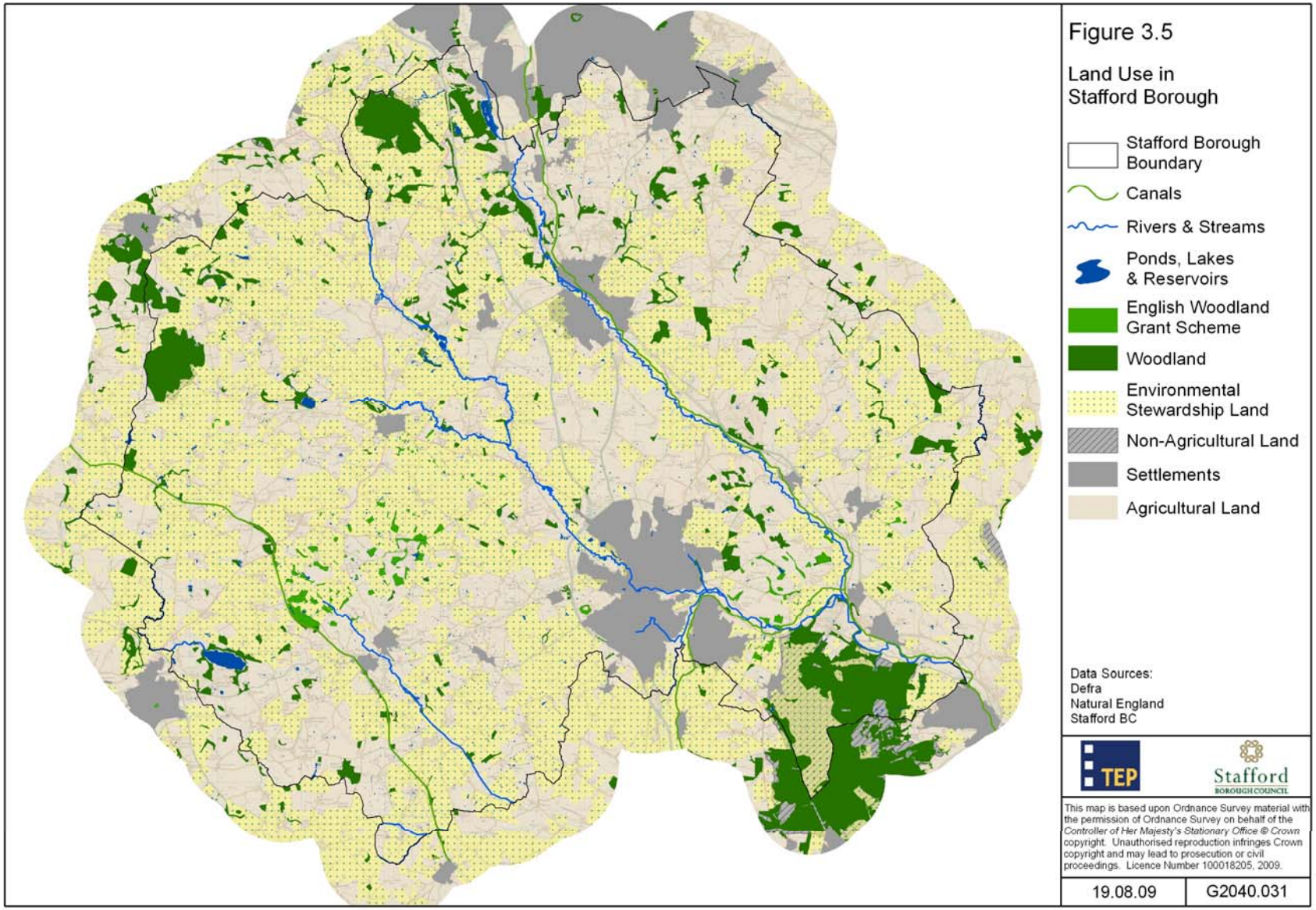


Figure 3.5
Land Use in
Stafford Borough
Stafford Borough Boundary
Canals
Rivers & Streams
Ponds, Lakes & Reservoirs
English Woodland Grant Scheme
Woodland
Environmental Stewardship Land
Non-Agricultural Land
Settlements
Agricultural Land
Data Sources:
Defra
Natural England
Stafford BC
TEP
Stafford
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Socio-Economic Context for Green Infrastructure in Stafford

Green infrastructure provides a framework for sustainable communities, providing services and environmental functions including outdoor education and training resources, opportunities for improving physical health through formal and informal recreation, contributing to mental and emotional wellbeing, and providing attractive locations for social interaction across traditional social boundaries. Green infrastructure does not necessarily have to be publicly accessible: private gardens and grounds around business premises make a significant contribution to quality of place, urban biodiversity and mental wellbeing, whilst working agricultural land also contributes to landscape quality and provides a setting for rural communities.

The Green Infrastructure Strategy promotes the role of greenspaces in contributing to the area's character, distinctiveness and sense of place, reinforcing feelings of local pride and a sense of ownership and belonging – so aiding and enabling community cohesion. It is therefore important that we understand the socio-economic context of the Borough as the setting for its green infrastructure assets, using a range of data and information:

- Index of Multiple Deprivation 2007[43]
- Census 2001
- Area Profiles / Neighbourhood Statistics

The Indices of Deprivation (IMD) 2007 provide the Government's official measure of multiple deprivation at small area level. It brings together 37 different indicators which cover specific aspects or dimensions of deprivation:

- Income
- Skills and Training
- Employment
- Health and Disability
- Living Environment
- Education
- Crime
- Barriers to Housing and Services

These individual indicators are weighted and combined to create the overall IMD 2007.

IMD results show that overall Stafford Borough is relatively affluent in comparison with national, regional and sub regional averages, with an IMD rank of 253 out of 354 Local Authorities (where 1 is most deprived). However, it is important to consider the relative deprivation within the Borough in order to identify local pockets of comparative need.

Using Staffordshire IMD thresholds[44], Figures 3.6 and 3.7 show that while there are confined pockets of relative deprivation in the north of the Borough, deprivation is particularly concentrated within Stafford town: between Burton Manor and Highfields, Rising Brook, around the prison and hospital to the north east of the town centre, and an area stretching from the town centre northwards along the A34.

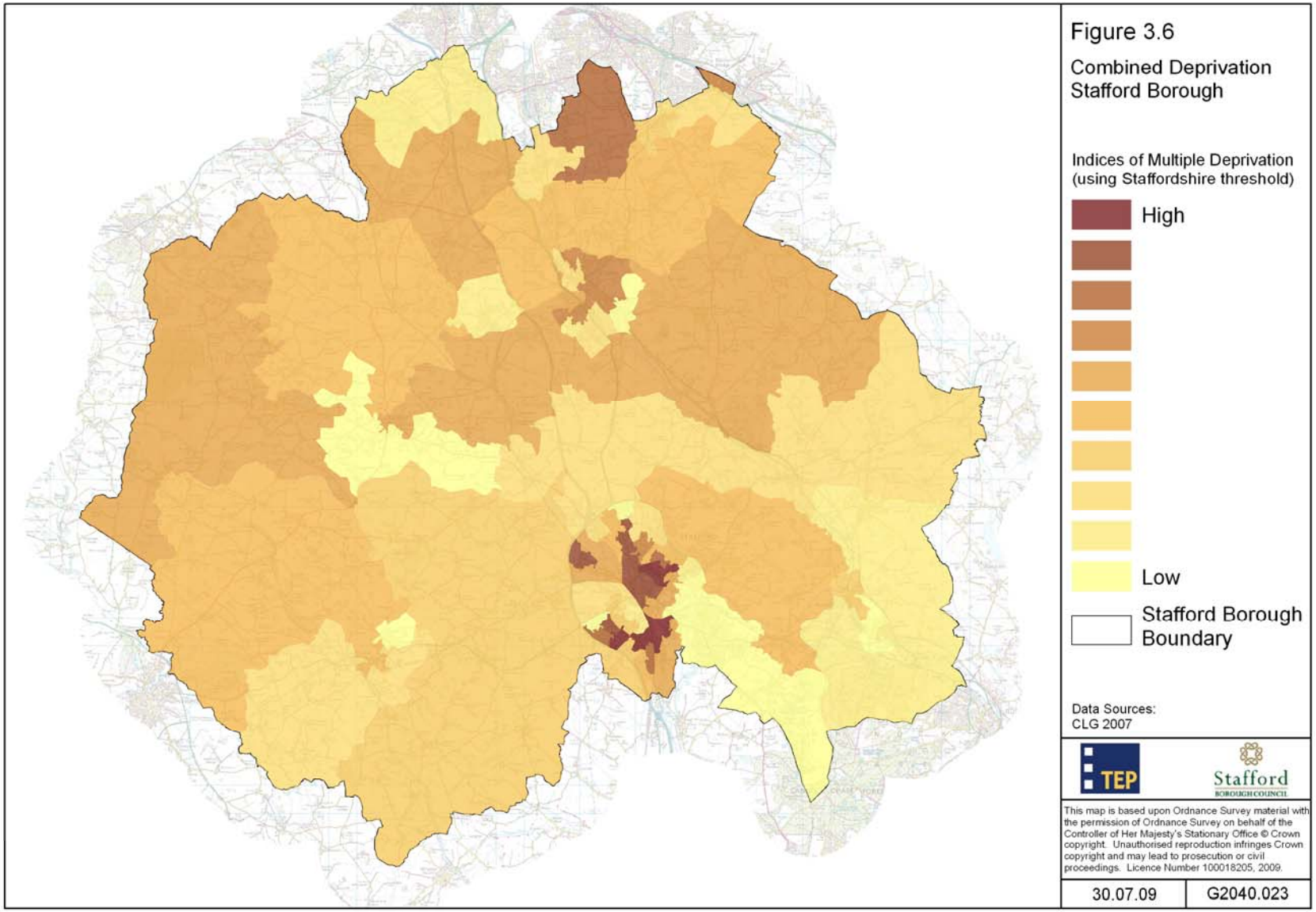
Figure 3.6
Combined Deprivation
Stafford Borough
Indices of Multiple Deprivation
(using Staffordshire threshold)
High
Low
Stafford Borough
Boundary
Data Sources:
CLG 2007
TEP
Stafford
BOROUGH COUNCIL
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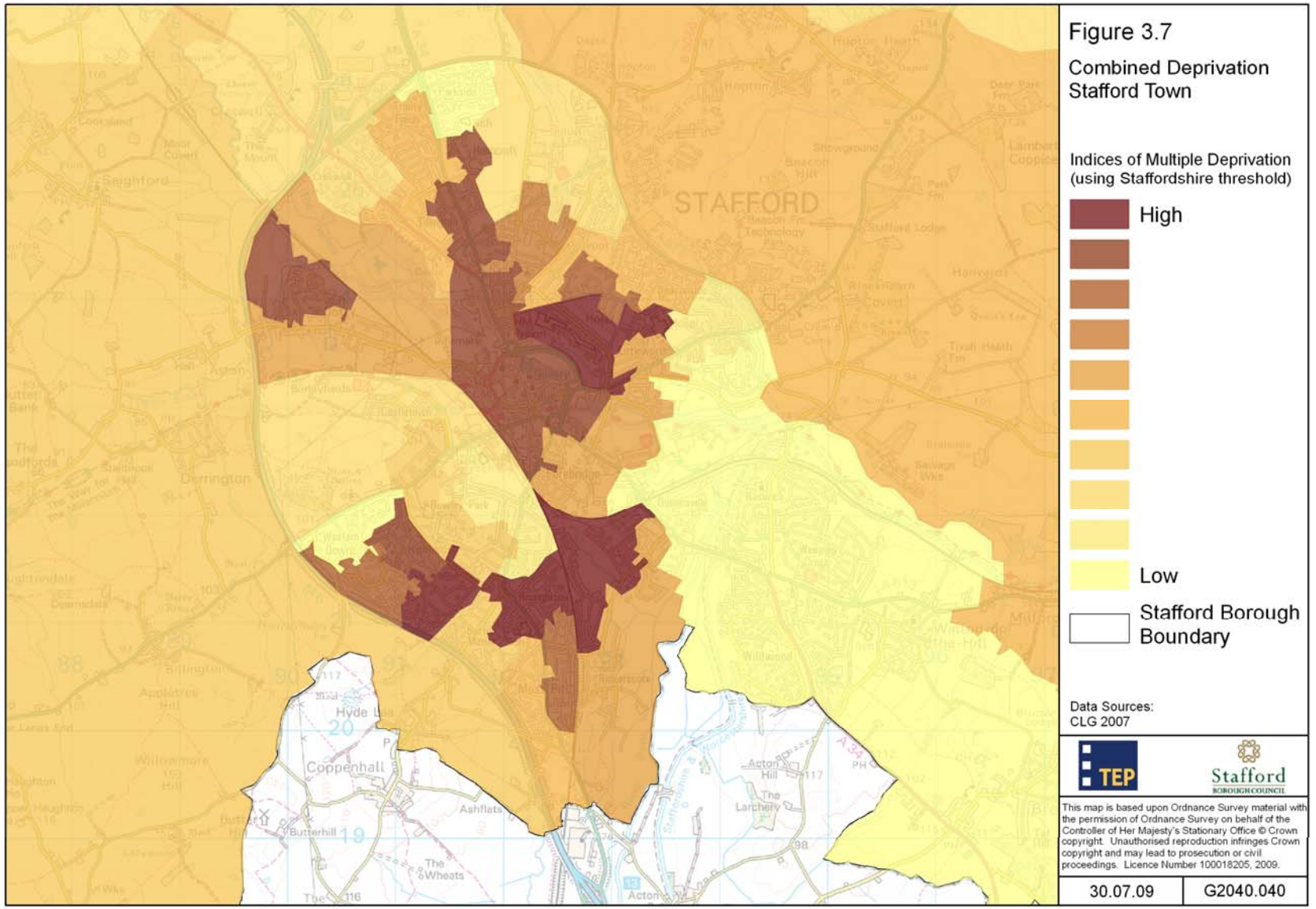
Figure 3.7
Combined Deprivation
Stafford Town
Indices of Multiple Deprivation
(using Staffordshire threshold)
High
Low
Stafford Borough
Boundary
Data Sources:
CLG 2007
TEP
Stafford
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STAFFORD
Coppenhall
Hyde L
Butterhill
Ashflats
The Wheats
Acton Hill
The Larchery
Acton
Derrington

Economic activity, employment and unemployment rates within the Borough all compare favourably with regional and national figures[45], supporting its overall position within IMD ranking:

Indicator	Stafford	West Midlands	England
Economic Activity Rate	83.9%	77.1%	78.6%
Employment Rate	81.5%	72.4%	74.4%
Unemployment Rate	3.7%	6.1%	5.4%

Stafford Borough's population increased by 2.7% in the 6 year period to June 2007. The population is concentrated around the main settlements of Stafford and Stone, with 60% living in these two major settlements and the remainder spread across the larger villages such as Eccleshall, Gnosall, Great & Little Haywood, Hixon and Barlaston, and surrounding rural areas.

This increase is not equal across age bands: there was a fall in the population aged under 14 years of 1.2% for that period, while the population over retirement age (60 for females and 65 for males) increased by 2.2%. A higher proportion of younger people live in Stafford town and to the south east of the Borough, whilst the older population is spread across the rural parts of the Borough, and particularly in the north and around the most protected parts of the Cannock Chase AONB (see Figures 3.8 and 3.9).

These patterns have implications for the GI Strategy. Combined with Stafford Borough's development proposals, the proximity of Newcastle-under-Lyme to the north of the Borough, the RENEW initiative in Stoke and North Staffordshire, and growth proposals in East Staffordshire, the existing and potential population catchment for Stafford Borough is significant. Urban populations will require a range of high quality greenspaces that meet a variety of functions, whilst the valued landscapes and open spaces surrounding the urban areas need to be protected from overuse or impacts of development.

Furthermore, green infrastructure needs may well be different in across age groups: older (and therefore potentially less mobile) people will need neighbourhood greenspaces which are clean and safe, including doorstep greens and street greening (e.g. through street trees) to encourage active lifestyles and allow social contact. In comparison, young people are likely to require those multifunctional open spaces that meet increasingly varied leisure and educational needs.

Vulnerable communities (i.e. where populations are experiencing poor health, are particularly young or old, or have otherwise decreased mobility) in urban areas will be particularly at risk from the 'urban heat island' effect. Green infrastructure can help to alleviate this effect, reducing temperatures in urban areas by providing shade and aiding air quality improvements. Provision of green infrastructure associated with developments, and planning for natural flood storage and control measures can also have a significant role in minimising flood risk: combating increases in sealed surfaces in urban areas as a result of development that can increase surface water run-off, often a critical factor in urban flooding.

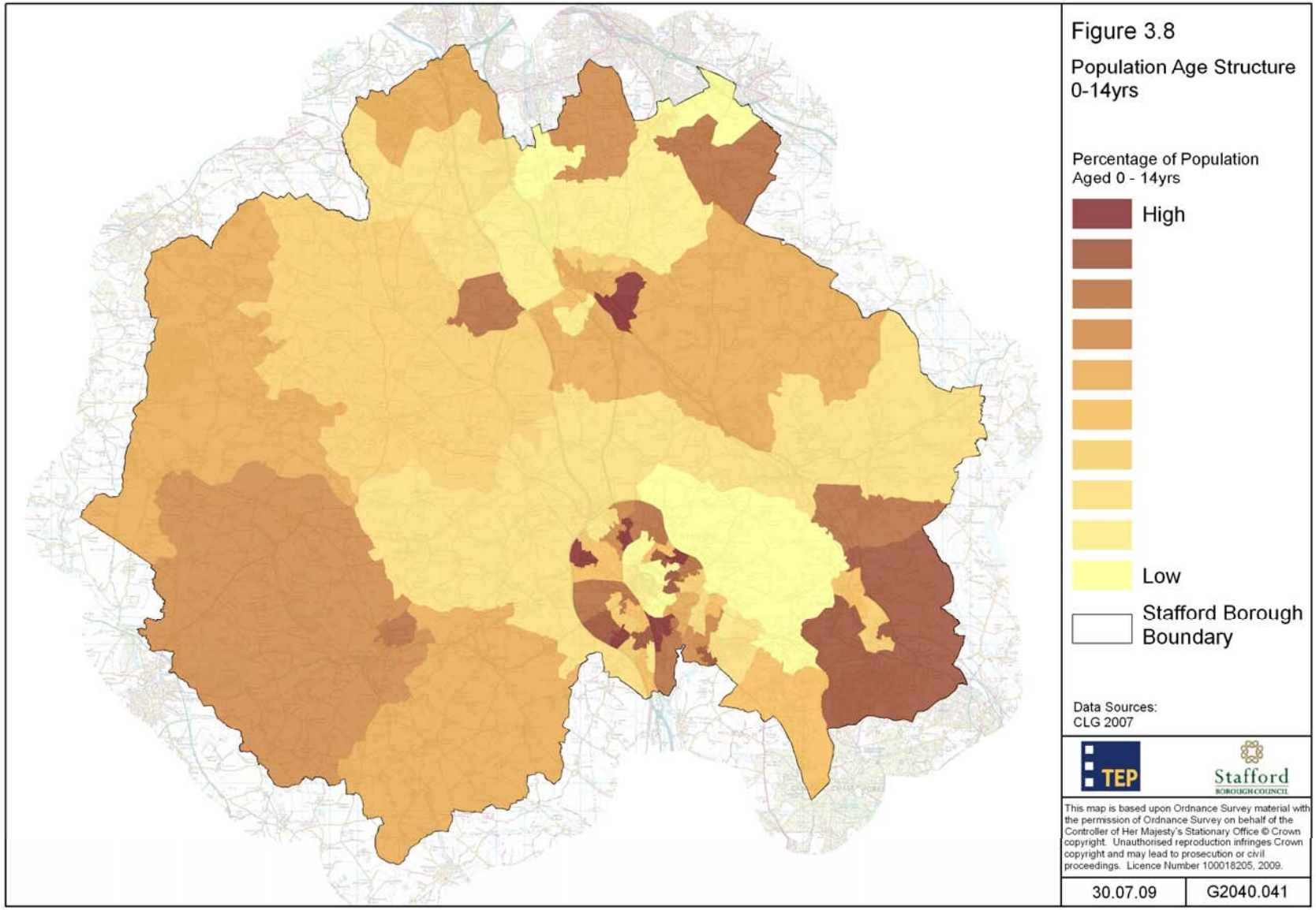
Figure 3.8
Population Age Structure
0-14yrs
Percentage of Population
Aged 0 - 14yrs
High
Low
Stafford Borough
Boundary
Data Sources:
CLG 2007
TEP
Stafford
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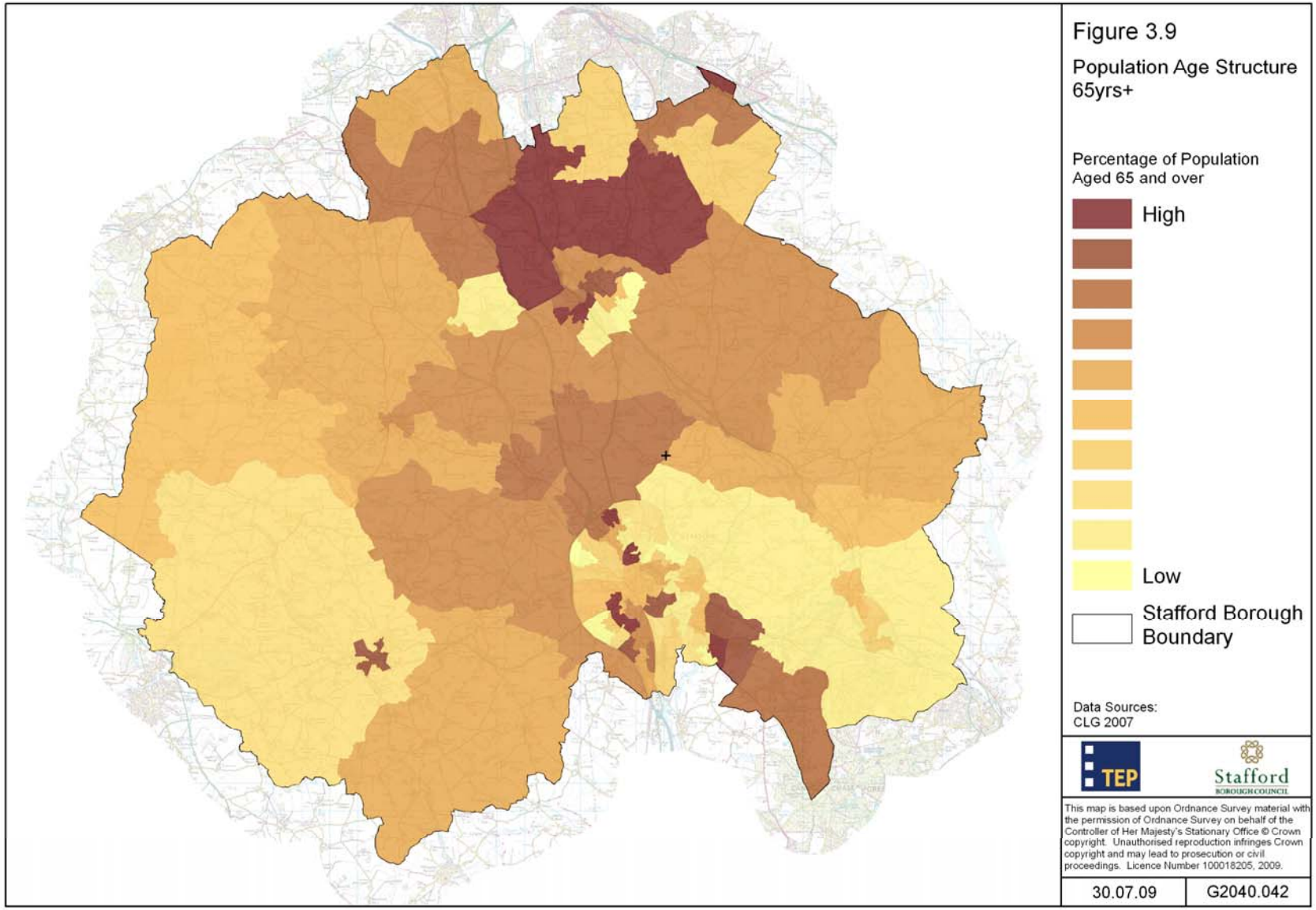
Figure 3.9
Population Age Structure 65yrs+
Percentage of Population Aged 65 and over
High
Low
Stafford Borough Boundary
Data Sources:
CLG 2007
TEP
Stafford
BOROUGH COUNCIL
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Chapter 4: GREEN INFRASTRUCTURE ISSUES, OPPORTUNITIES AND THREATS

Green infrastructure can deliver many benefits across several thematic 'functions'. These functions are the roles that land can play if it is managed in an appropriate way. Numerous environmental or socio-economic functions are possible (e.g. biodiversity, local distinctiveness, public health, sport and recreation, heritage and culture, flood management, climate change adaptation and many others), and green infrastructure can be 'multifunctional' where different functions or activities occur on the same piece of land.

Informed by the drivers (Chapter 2), analysis of the Borough's green infrastructure assets and the socio-economic context they sit in has led to the identification of the following functions that green infrastructure can deliver in Stafford Borough:

- Supporting healthy, sustainable and cohesive communities
- Protecting and promoting local distinctiveness, heritage and cultural assets
- Adapting to and mitigating against the effects of climate change
- Enabling urban and rural economic growth and sustainable prosperity
- Improving accessibility and use of green spaces
- Protecting, enhancing and extending biodiversity resources and natural networks
- Providing the setting and infrastructure for growth

To better understand these functions, a variety of existing datasets and sources of information have been used to examine each of these functions: presenting the issues for the Borough, identifying any threats to the functions or to assets providing the functions, and considering opportunities for enhancing and/or expanding the function to deliver additional benefits.

The analysis takes the approach that generally multi-functionality is desirable as integration and interaction suggests an efficient and sustainable use of land, especially where pressures on land are acute. However, it also recognises that some assets have single functions of over-riding importance which might be compromised by multi-functional use, and the Green Infrastructure Strategy has to respond to the need or desire to manage these key assets for their single purpose or intrinsic value which can often be a result of unintended or inappropriate multi functional use.

Supporting healthy, sustainable and cohesive communities

Green infrastructure has a vital role in enabling the communities of Stafford Borough to live more healthy lifestyles. It can improve access and provide sustainable alternatives to travelling by vehicle. In addition green infrastructure assets are central to a community; they provide a focus for community events and recreation and can link communities to each other and services such as town centres.

There are several neighbourhoods within the Borough that display high levels of health deprivation (figure 4.1) including; Highfields, Rising Brook, parts of Queensville, Western Downs, Tillington, Holmcroft, Moss Pit and Doxey, Stafford Town Centre, parts of Little Stoke in Stone and Blythe Bridge to the south of Stoke on Trent.

This could be as a combined result of an increasingly older population, poor diet and a lack of exercise. 44% men and 53% women in the Borough do not partake in any physical activity at all, with only 12% men and 11% women in the Borough achieving the governmental guidelines on physical activity. Rising levels of obesity amongst young people since 1995[46] indicate that future health expenditure on long term illnesses related to obesity such as heart disease and diabetes could be proportionally more than current levels. The current levels of obesity reported in the Adult Health and Lifestyle Survey[47] show that 17.4% of people consider themselves obese and a further 37.6% as overweight.

The areas experiencing poor health in the Borough correlate with areas displaying high levels of combined deprivation according to the Index of Deprivation (IMD) 2007[48] (figure 4.2), which considers education, employment and health deprivation. In addition to this there is correlation between those areas with high numbers of children (aged 0 – 14 yrs) and those with high health deprivation (figure 4.3), highlighting those areas in need of intervention. Of concern is the high percentage of children living in neighbourhoods adjacent to the motorway corridor and the affect of poor air quality arising from vehicle based emissions on their health.

The need to reduce carbon emissions to combat climate change effects is well documented; however air quality, health and the physical safety of the Borough's residents and visitors are also important factors in the need to reduce fossil fuel based emissions. Stafford Borough is no different to many other local authorities in that large numbers of people rely on private and public transport to travel to work, school or elsewhere. However in Stafford Borough there are many opportunities in and along the existing green and blue spaces/corridors to improve upon the extent and quality of access provision.

The Borough's population is expected to rise by 15% between 2006 and 2026[49] most of which are likely to be housed in the new urban extensions around Stafford with other settlements absorbing the remainder. These new communities will need access to services, employment and schools etc without increasing vehicle based emissions, congestion and road accidents.

New (and existing) communities also require access to green and open space, essential in defining a sense of place, and as a place for interaction which meets local needs. These needs are not restricted to recreation and leisure, but include those which help reduce the effects of climate change, such as flood storage, cooling/shade and reducing airborne pollution effects/levels.

Threats

Although diets, alcohol consumption and smoking habits can be reduced through education, opportunities to exercise will not improve without physical intervention. Failure to promote and

provide neighbourhoods with high quality, accessible and usable green space will mean that the Borough's communities will continue to have low exercise rates and not take advantage of the many physical and mental benefits these assets can provide.

Without understanding these needs and their spatial context, new development (particularly in larger areas on the edge of town) cannot design-in access routes that provide links between communities, services, the surrounding countryside and employment. A poorly designed access route that is neither adequate nor in the right location will lead to an increase in traffic on the Borough's roads, making those new development areas less sustainable and perhaps less attractive to potential residents.

Opportunities

The occurrence of the five most common illnesses in the Borough (obesity, diabetes, coronary heart disease, asthma and hypertension[50]) can all be reduced by the way in which green and open spaces are used and the quality (aesthetic or otherwise) of these assets. Increased levels of exercise can be encouraged by quality, accessible and networked green spaces.

Through the creation of networks of green spaces that are integrated with existing access networks, opportunities for sustainable transport can be improved. This helps reduce emissions, combating the causes of climate change and contribution to respiratory illnesses. The concept statements[51] that have been developed for the Stafford town proposed growth areas have identified that opportunities exist in these areas to make access improvements and extra provision between Stafford town and the surrounding countryside.

The links between the environment and networks of green space is recognised in the Draft Health Strategy[8]. Providing the opportunity for healthier lifestyles via a green infrastructure network would enable the strategy to address some of its key aims. Improving access to 'green gyms', allotments and promoting cycling and walking will support the aims of the Health Fit Programme being run by South Staffordshire Primary Care Trust.

Through linking green and recreational spaces as part of a network and improving the functionality of spaces, a wider range and choice of activities and destinations can be made more accessible and attractive to the community - a key activity of the Youth and Community development theme in the Community Plan[52] and Cultural Strategy[53]. This allows a wider demographic group to become engaged in use of the Borough's green space assets, enabling spaces to become a focus for community interaction.

Understanding and identifying the community's needs for recreation and access is essential in this period of growth for the Borough. Engagement will be necessary in the design, accessibility, location and other aspects of new development and regeneration initiatives. The Borough's Statement of Community Involvement[54] (SCI) recognises this need for engagement in the planning process and has set out how this will be achieved. There is a real opportunity through engagement to allow the Borough to grow not only sustainably, but importantly with the support and input of all communities.

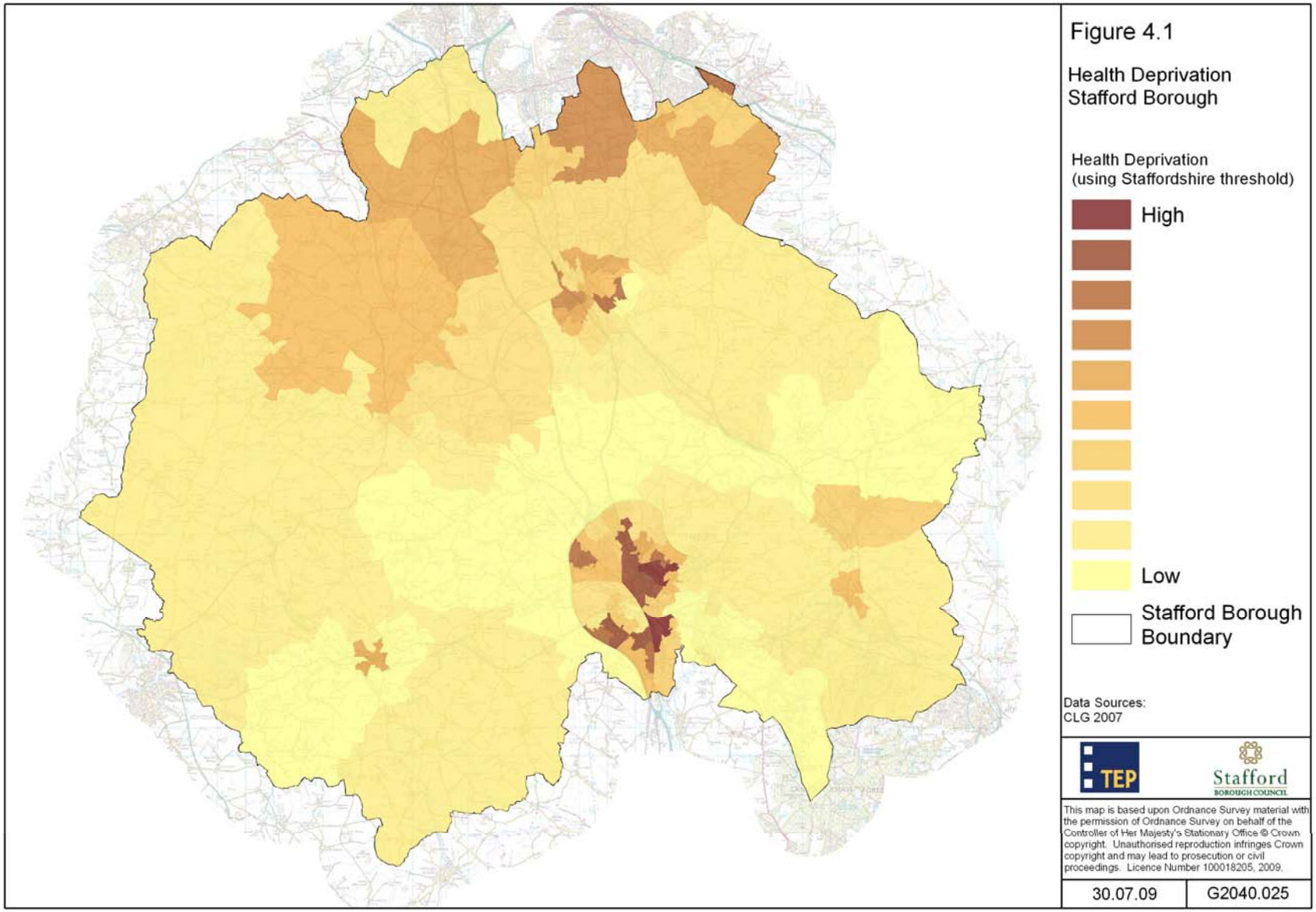
Figure 4.1
Health Deprivation
Stafford Borough
Health Deprivation
(using Staffordshire threshold)
High
Low
Stafford Borough
Boundary
Data Sources:
CLG 2007
TEP
Stafford
BOROUGH COUNCIL
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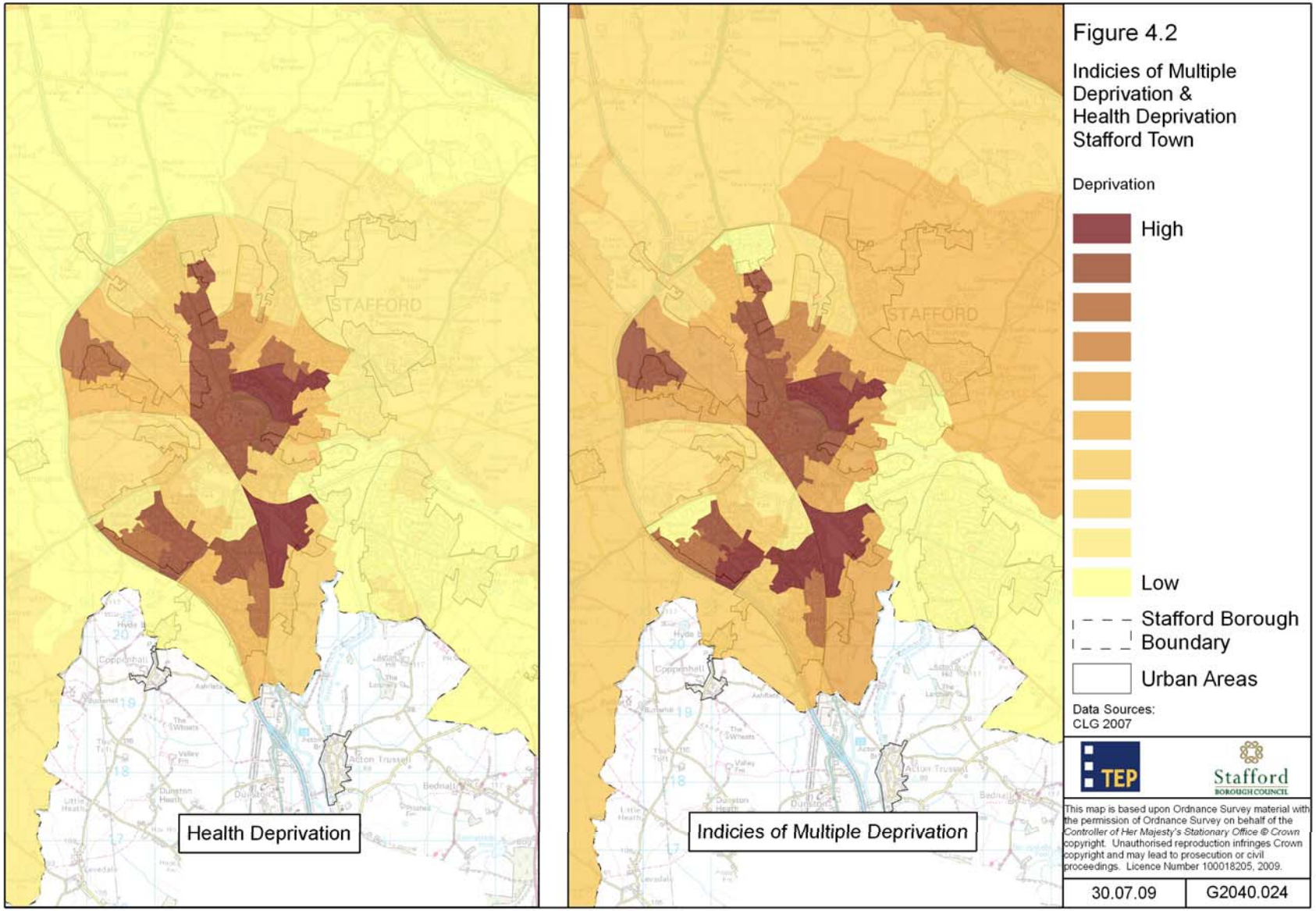
Health Deprivation
Indicies of Multiple Deprivation
Figure 4.2
Indicies of Multiple Deprivation & Health Deprivation Stafford Town
Deprivation
High
Low
Stafford Borough Boundary
Urban Areas
Data Sources:
CLG 2007
TEP
Stafford
BOROUGH COUNCIL
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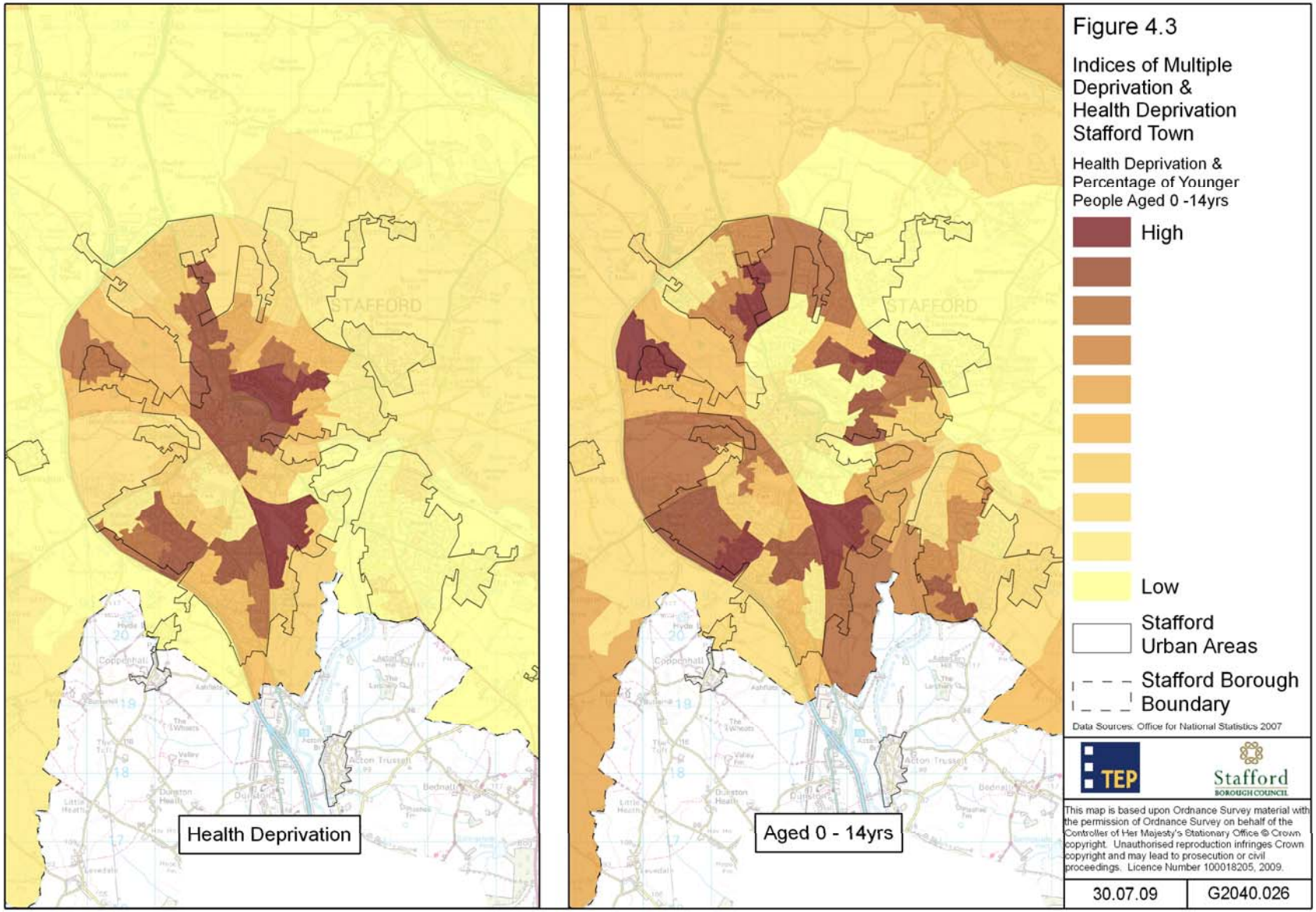
Health Deprivation
Aged 0 - 14yrs
Figure 4.3
Indices of Multiple Deprivation & Health Deprivation Stafford Town
Health Deprivation & Percentage of Younger People Aged 0 -14yrs
High
Low
Stafford Urban Areas
Stafford Borough Boundary
Data Sources: Office for National Statistics 2007
TEP
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Protecting and promoting local distinctiveness, heritage and cultural assets

Built and natural surroundings contribute to the sense of place of towns and villages and it is important to recognise that landscapes are a visual record of the Borough's culture and history, valued by communities[55]. In the face of growth and potentially large scale development, protecting this legacy is essential in maintaining the Borough's character and distinctiveness.

Green infrastructure planning can protect this distinctiveness through recognising those assets with heritage and cultural value. Cherished landscapes, monuments (ancient or otherwise), village halls and community facilities such as churches can become part of a wider green infrastructure network, allowing both local communities and visitors alike to enjoy them and ensuring their protection and improvement (where appropriate).

Stafford Borough has many cultural and heritage assets, ranging from ancient barrows, hill forts, earthworks, moated sites through to the imposing Stafford Castle and canal networks passing through Stafford and Stone (figure 4.4). The Historic Environment Character Assessment[56] (HECA) has identified the landscapes within and around Stafford as having a high historical context, both of historic man-made such mediaeval farm-scapes and natural features such as water meadows. Many of the areas display a potential for important archaeological remains and monuments.

These assets and the many activities/events held on them are an important part of the Borough's attraction to visitors and to communities' sense of place. However in some parts of the Borough facilities and services (particularly sports development and community events) have low usage figures[12]. This is more apparent in economically disadvantaged areas of the Borough.

Threats

New development could negatively affect the character of settlements. Poor design and inappropriate location could not only alter the character of the towns and villages of the Borough but reduce access to culturally and historically important assets which may mean that they become less valued and a lesser part of the settlement's fabric.

The potential new development areas have the potential to alter the historic character of the landscapes around Stafford. The HECA has identified several key areas that have a high value; Marston, Tixall Heath, St Thomas' Priory and North of Stafford Castle are all within the potential new development areas (figure 4.4). Areas that have been identified for the urban extensions are recognised in the HECA as having the potential for historical interest, particularly those with significant landscape features. One area with a particular concentration of those features is in the west of Stafford along the River Sow and canal corridor.

The growth of the Borough does not only have implications such as altering the character and appearance, increased populations can also affect important assets. Regardless of the Borough's own growth, popular destinations and access routes such as cycle paths are likely to have increased numbers of visitors as the population increases.

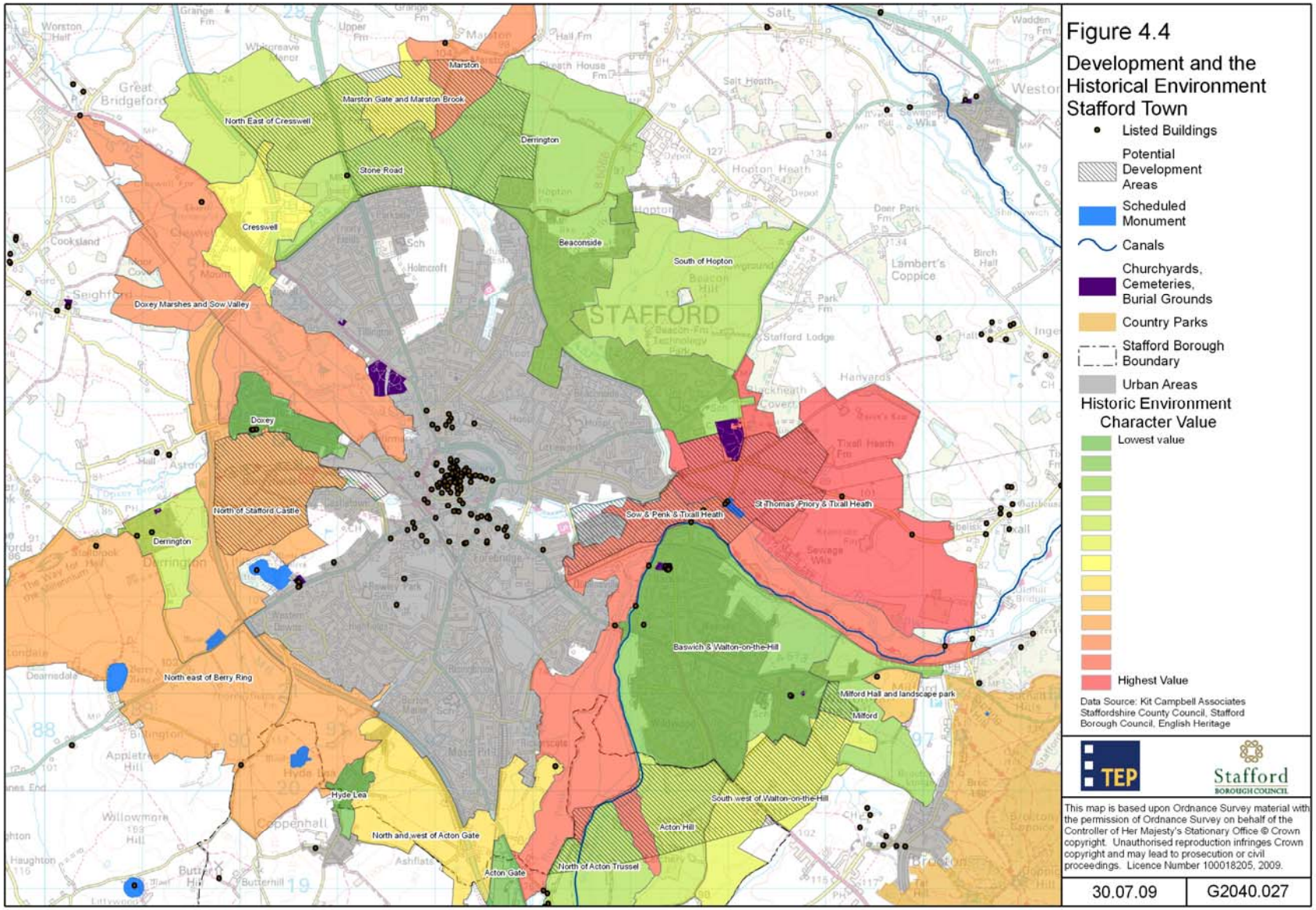
Figure 4.4
Development and the Historical Environment
Stafford Town
Listed Buildings
Potential Development Areas
Scheduled Monument
Canals
Churchyards, Cemeteries, Burial Grounds
Country Parks
Stafford Borough Boundary
Urban Areas
Historic Environment Character Value
Lowest value
Highest Value
Data Source: Kit Campbell Associates Staffordshire County Council, Stafford Borough Council, English Heritage
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Marston
Marston Gate and Marston Brook
North East of Cresswell
Derrington
Stone Road
Cresswell
Beaconside
South of Hopton
Doxey Marshes and Sow Valley
Doxey
North of Stafford Castle
Derrington
Sow & Penk & Tixall Heath
St Thomas' Priory & Tixall Heath
Baswich & Walton-on-the-Hill
North east of Berry Ring
Milford Hall and landscape park
Milford
Hyde Lea
South west of Walton-on-the-Hill
Acton Hill
North and west of Acton Gate
Acton Gate
North of Acton Trussel
STAFFORD

In the case of Cannock Chase, it is estimated that planned growth in the areas in and around the SAC/AONB will result in an increase of around 9% in visitor numbers. This may make the area more likely to suffer from overuse, with consequences for access networks leading to this regionally important asset. To ensure no adverse effect on integrity, the Visitor Management Strategy[57] recommends that mitigation measures should aim to ensure no net increase in recreation pressure to the SAC, and ideally should enable a reduction in visitor pressure alongside enhancement.

Increased traffic brings with it issues of health and climate change, but without adequate sustainable alternatives this will be unavoidable.

Opportunities

The Borough's Statement of Community Involvement enables communities to express their concerns over development and allows them to highlight heritage and culture issues that may not be obvious or apparent during the development process. The Stafford and Stone Historic and Civic Society are standard consultees for development control consultations. Recognising the value of assets to communities means that they can become part of a new development's character for the future to be enjoyed by generations to come. For example linking landscape/green/heritage assets to the public realm can support Stone's Town Centre Vision[58].

Planning green infrastructure alongside growth allows the preservation, enhancement and creation (where appropriate) of access routes to high quality/historically significant landscapes, maintaining connections between the Borough's communities and their countryside. Through protecting and enhancing these assets and improving their access connections to communities, they become an educational asset and add breadth to the Borough's interest to visitors. This integration of assets and access networks will help improve the sustainability of tourism in support of the Cultural Strategy's [59] 'Healthy Lifestyles and High Quality Environment' theme.

The Borough's Cultural Strategy considers access to green space, lack of investment in its parks and green spaces and low levels of physical activity as key concerns regarding cultural activity. A green infrastructure strategy will go some way to addressing these concerns by providing an understanding of where areas of need are located and so identifying priority areas for investment. Areas with low levels of participation in cultural activities, for example the economically disadvantaged areas in southern parts of Stafford town, are such priority areas.

Adapting to and mitigating against the effects of climate change

The location of the Borough's main settlements adjacent to the River Trent, Penk and Sow means that the danger of flooding is a real one (figure 4.5). Estimates consider that by 2020 the West Midlands damage to households could cost between £185million and £360million (this figure excludes damage to business premises).

The economic damage caused by flooding is not restricted to the damage to homes and businesses: in the Borough there are several areas where essential transport infrastructure will be affected by major flood events, particularly the West Coast Mainline and sections of the A34 in Stafford. Disruption to transport is estimate to cost between £30 million and £80 million[60]. These

figures are based on the United Kingdom Climate Impacts Projections 02 (UKCIP02) under the low emissions scenario with a maximum increase in winter precipitation of 10%. The most recent report (UKCIP09[61]) has revised these projections to 15%, meaning those financial costs outlined above could in reality be substantially more.

Urban areas, because of the high percentage of sealed surfaces, often contribute to the severity of flooding through urban run-off. Poor drainage infrastructure, increased rainfall and surface 'sealing' will in the future create serious flooding issues, either at the local level and/or downstream of the urban areas. Both the River Penk and Sow (figure 4.6) feed the River Trent which is already subject to serious and economically damaging flooding.

In contrast to potential for increased winter flooding, dry periods and rising summer temperatures are likely to cause further disruption, particularly for urban areas. In the summer the large amounts of reflective surface, lack of shade, poorly vegetated and low levels of ventilation associated with the urban realm compounds the problems of high summer temperatures. Referred to as the 'heat island' effect, this situation causes discomfort, dissuades people from using urban centres and can have severe health implications for the young and old. As summer temperatures rise there is the potential that larger numbers of people will need more green and open spaces in which they can avoid the heat discomfort of built up urban areas. Some areas of the Borough will have limited access to local green space, meaning that perhaps some communities will not have the option or ease of access to gain respite.

Long periods of dry weather and high temperatures can have an effect on the physical/built environment. Lack of infiltration by rainfall because of sealed surfaces and high temperatures can cause the 'drying out' of the ground, which has implications for building stability and potential subsidence. This lack of infiltration reduces the amount of water in underground aquifers and limits the amount of abstraction, which could have issues for water supply.

Threats

Without green infrastructure planning, new development may provide only token green space or flood prevention measures. There is the potential that developers will not adequately factor green infrastructure (creation, enhancement and maintenance) into development design and to provide important access, biodiversity and flooding benefits.

Even without further development and decreased surface porosity, flooding in the Borough will continue and likely worsen as the climate changes. Both large scale new development such as the extensions and small scale in-fill could increase the incidence and severity of flooding - affecting not only local areas but exacerbating problems downstream. Increased flooding and higher insurance costs may dissuade investors and potential new residents from moving into the area.

With rising temperatures, increased population and potentially higher levels of airborne pollution from motor vehicles, the Borough's urban areas are likely to become less welcoming and may suffer from economic decline and out migration, putting pressure on transport infrastructure and housing in out-of town areas.

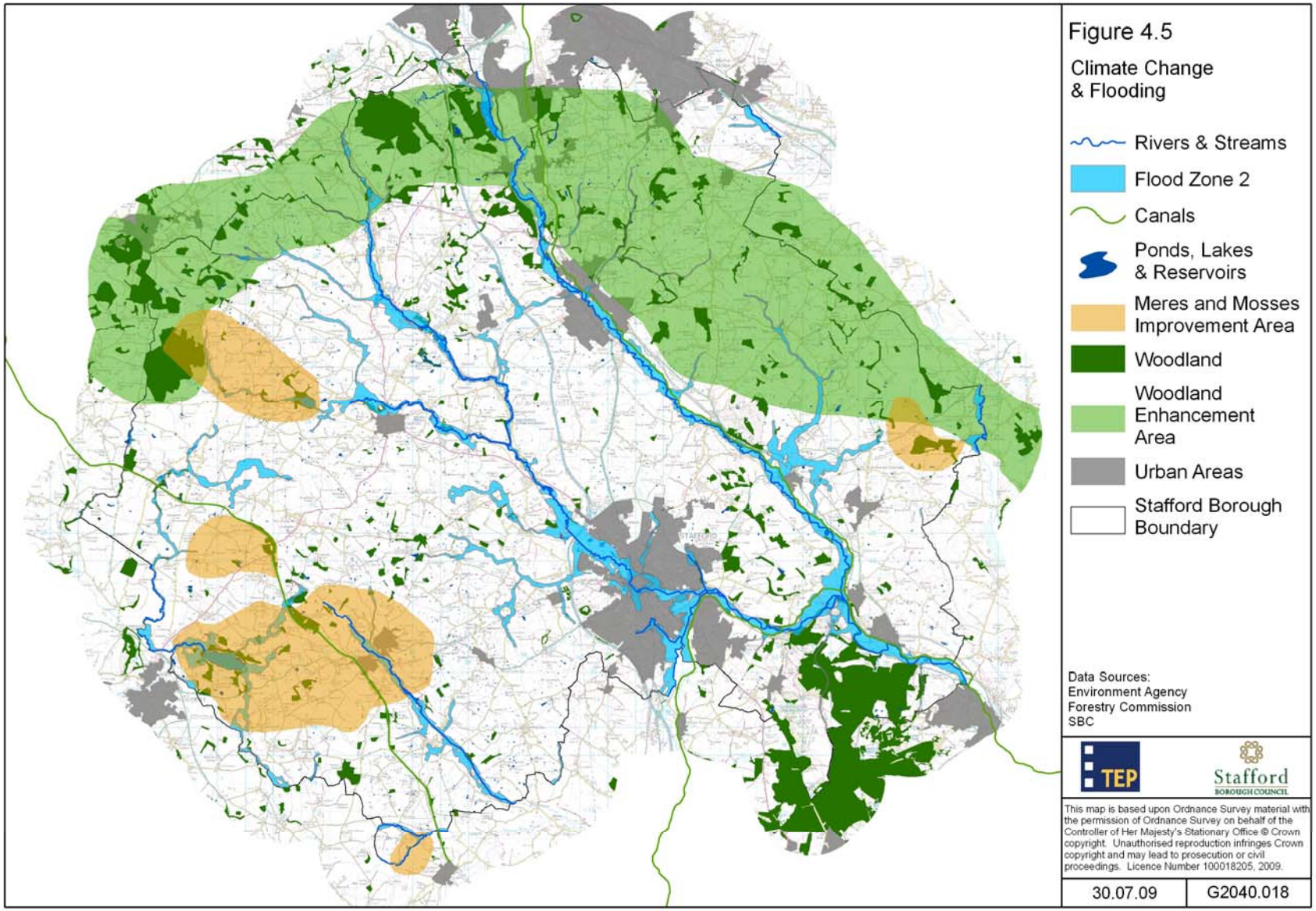
Figure 4.5
Climate Change
& Flooding
Rivers & Streams
Flood Zone 2
Canals
Ponds, Lakes
& Reservoirs
Meres and Mosses
Improvement Area
Woodland
Woodland
Enhancement
Area
Urban Areas
Stafford Borough
Boundary
Data Sources:
Environment Agency
Forestry Commission
SBC
TEP
Stafford
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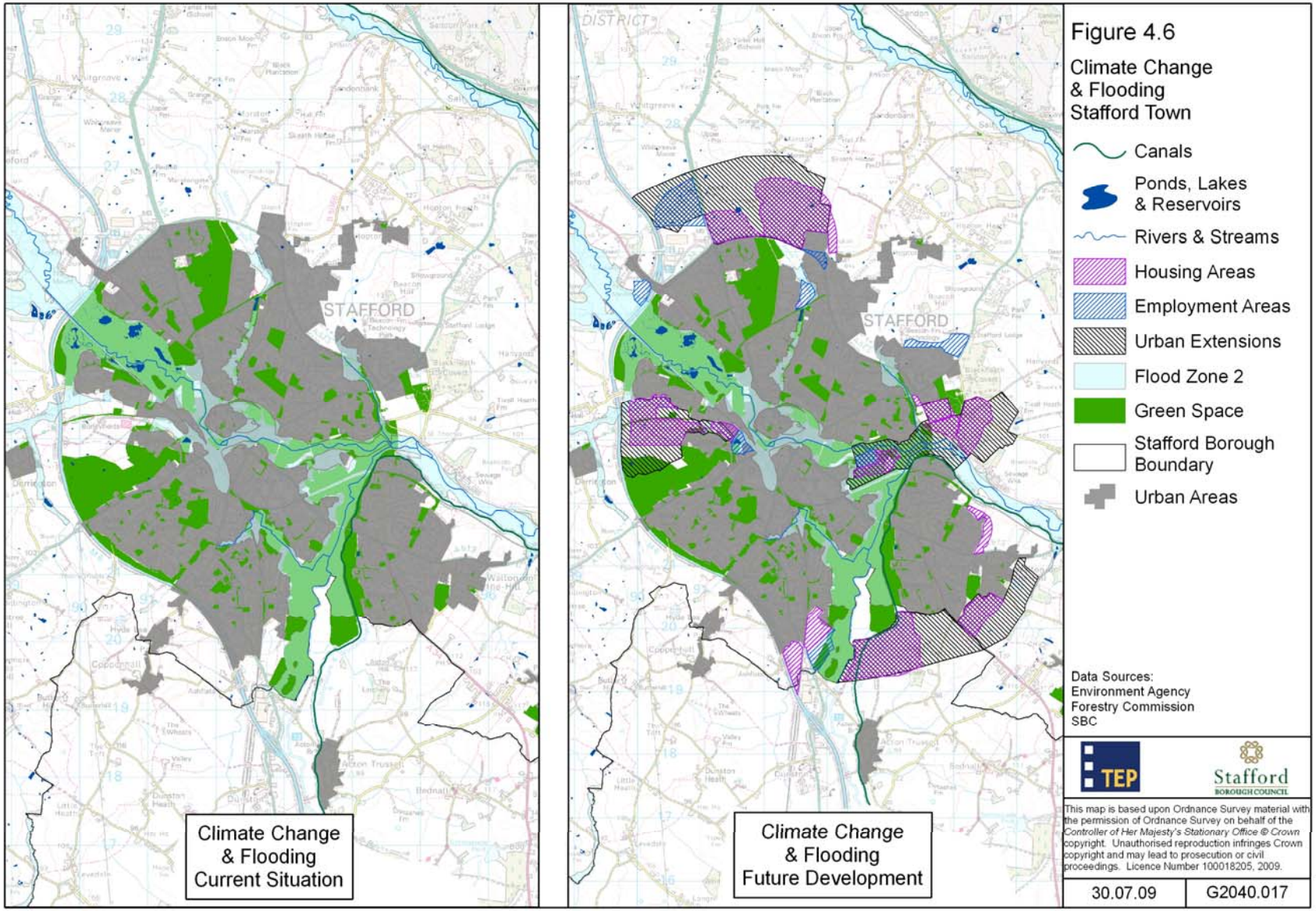
Figure 4.6
Climate Change
& Flooding
Stafford Town
Canals
Ponds, Lakes
& Reservoirs
Rivers & Streams
Housing Areas
Employment Areas
Urban Extensions
Flood Zone 2
Green Space
Stafford Borough
Boundary
Urban Areas
STAFFORD
STAFFORD
Climate Change
& Flooding
Current Situation
Climate Change
& Flooding
Future Development
Data Sources:
Environment Agency
Forestry Commission
SBC
TEP
Stafford
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Low levels of green space provision in parts of the Borough and/or ineffective access to green spaces will affect the ability of communities to deal with increased summer temperatures. This is particularly important for less mobile people who require green and open spaces close to their doorsteps.

In the predicted drier summers it is likely that we come to rely on underground aquifers for our water. Increased surface cover will affect the ability of this important water resource to replenish itself through percolation. This could lead to water shortages and increased abstraction from more ecologically sensitive rivers. Increased flooding can also affect water quality as pollutants are washed into watercourses.

Increased numbers of people has the potential to increase the level of vehicle on the Borough's roads, not only contributing to carbon emissions but also reducing the air quality which is made more potent during hot weather.

Opportunities

Understanding the location and potential improved functionality of green space will allow a reassessment of how the Borough's public green spaces are managed for public benefit. This is not only through recreational provision but in their function in reducing the negative effects of climate change such as flood storage and urban cooling.

The negative effects of the urban 'heat island' can be combated through increasing the amount of green space in the urban area. Increased tree planting, as recommended in the Borough's PPG17 assessment[62], provides cooling through shade and evapotranspiration and has the additional effect of improving the street scene making it more attractive. This will also support local businesses by making the Borough a more attractive destination to visitors, investors and new residents. Town centre improvement schemes in Stone and Stafford have the potential to drive forward this approach.

New development at all scales (figure 4.6) has the potential to reduce the occurrence of flooding, through Sustainable Drainage Systems (SUDS) and other rainfall storage methods. As part of a network that connects to existing access and natural networks, these measures can have added value.

In the north of the Borough it is planned to improve the connectivity of the woodland resource (figure 4.5). Increased tree cover has the effect of slowing down the amount of water entering the river systems through storage in the canopy foliage. This again will have multiple benefits for climate change, recreation and biodiversity issues. Managing riverside areas as floodplains and marshland reduces the rate at which water passes along the river's course, reducing downstream flooding and benefiting biodiversity. Those areas that have been identified as meres and mosses improvement areas will also help reduce the problems associated with flooding.

Enabling urban and rural economic growth and sustainable prosperity

A high quality environment is seen as one of the Borough's key assets that will need to capitalise on in order to support the Borough's vision for sustainable prosperity:

> *"Ensuring that throughout the Borough communities and citizens have and maintain the best available prospects for prosperity, choice & quality of life"* [63]

As the County Town for Staffordshire and as home to the Mid Staffordshire General Hospitals NHS Trust, the Borough has a proportionally very large concentration of jobs in the public administration, education and health sector (36.6% or 20,400 jobs). However, it has proportionally less jobs than comparison areas of Staffordshire County and the West Midlands Region in the manufacturing sector (14.1% of all employment at 2004 or 7,900 employee jobs) whilst the banking, finance and insurance sector (which is seen as a key driver for the future growth of the service sector in local economies) employs proportionally less people than for Staffordshire County, Nationally or the West Midlands Region[64].

The banking, finance and insurance sectors tend to demand high quality working environments, both as an encouragement to invest in a location and as an attractor for skilled, professional workforces (who are often the most mobile and in demand so can be selective about settlement choices). The identification of a balanced supply of high quality employment land will therefore be a key element to the sustainable development of the area for future years, with green infrastructure having a particular in supporting growth proposals.

Tourism is a significant element of the Borough's economy, with the distribution, hotels and restaurants sector providing 13,300 employee jobs or 23.8% of the employment in Stafford Borough. Key sites include Stafford Castle, Trentham Gardens, Shugborough Park Estate and Cannock Chase AONB, with the extensive canal network having potential for restoration and expansion. There is also a range of smaller local attractions across the Borough. Improving biodiversity, increasing accessibility and providing better quality leisure facilities are roles that green infrastructure can fulfil that will contribute to the tourism sector, alongside the direct enhancement and perhaps creation of tourism assets.

The former RAF Stafford site (now known as Beacon Barracks & MoD land at Stafford) is a major landholding on the north eastern edge of the town along with a number of freestanding sites in the rural area beyond the main site. The site is the focus of plans by the Ministry of Defence which includes providing homes and associated infrastructure for around 1,300 troops (and their families) by 2013. Whilst this would provide opportunities for integration of army personnel into local communities, it may also increase pressure on public services, environmental assets and functions and there will be an increased demand for employment.

<u>Threats</u>

Sustainable prosperity is as much about quality of life and quality of place for existing businesses, communities and visitors as it is about attracting new investment, residents and tourism. Poor quality housing areas and unattractive work areas, including town centres, are as likely to deter growth, inward investment and in-migration as much as the new development is intended to encourage it.

Simply increasing the housing stock and the availability of employment land is therefore not enough to secure the future growth and prosperity of the Borough. Infill development in the more urban areas will increase demands on existing open and green spaces and with other implications on wildlife, landscapes, flooding, climate change and other elements of the natural environment that can have an important role in providing a good quality of life. Of land identified as being able to deliver 11,000 dwellings, this includes significant green field urban extensions[65] around Stafford Town (figure 4.7). The location of these residential and employment areas located on the edge of Stafford creates issues with transport such as congestion and pollution, particularly relating to daily activities such as commuting or going to school. Increased sustainable transport infrastructure such as dedicated cycle and pedestrian access will be needed to cope with this extra demand.

Failure to improve urban areas may lead to out-migration to the peri-urban and countryside areas compounding to the difficulties experienced by rural communities such as being priced out of the housing market. This could lead to the loss of traditional skills and would alter the social make-up and culture of the rural area. It is likely that those out-migrants would remain employed in the urban areas, creating issues of increased traffic and associated problems and turning villages into dormitory settlements.

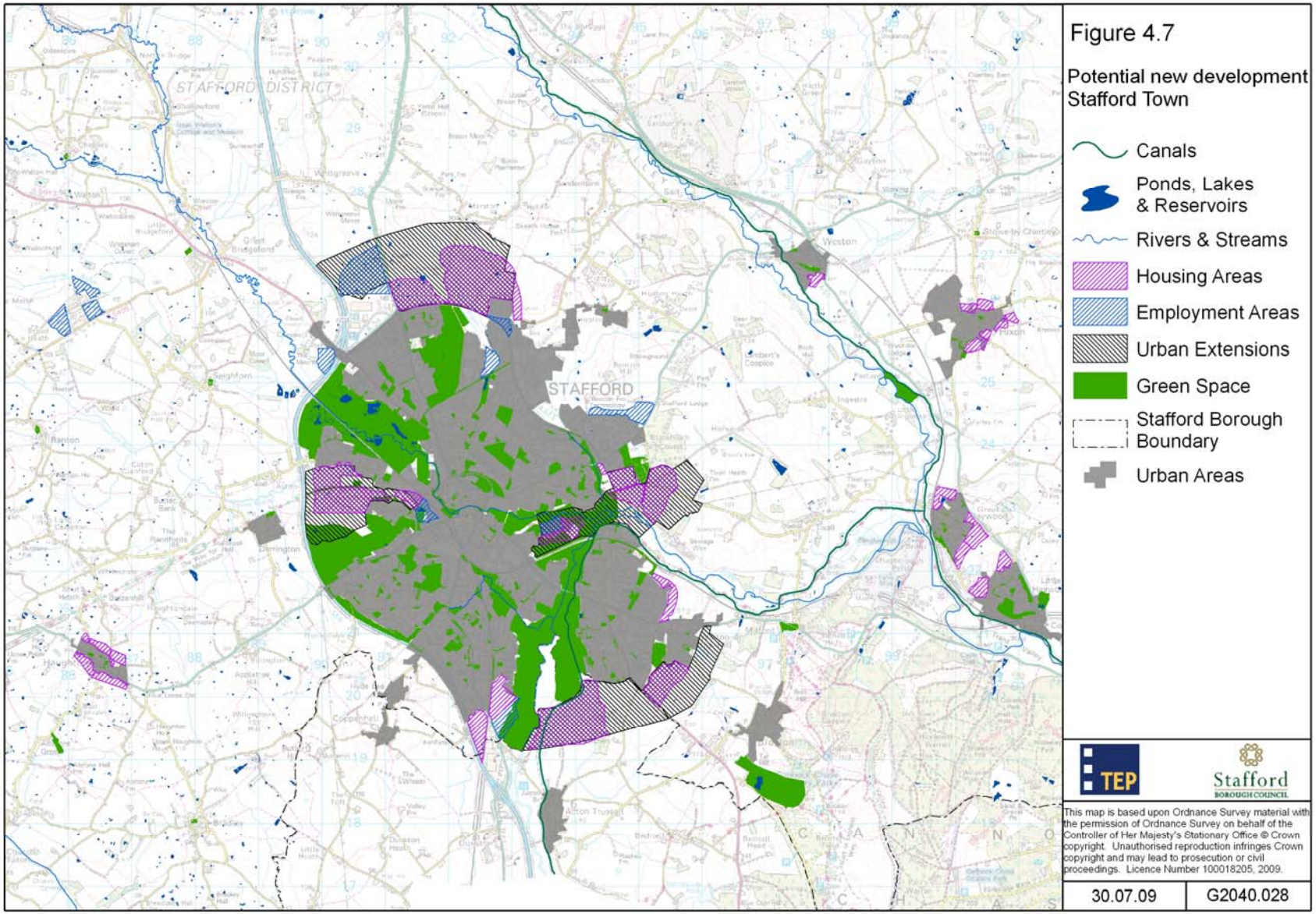
Increased population may exert pressure on some of the Borough's key recreation and tourism sites leading to a decline in quality and accessibility (due to traffic congestion). Over crowded areas unable to withstand increased visitor traffic are likely to become less favoured by visitors, reducing income and exposure to outsiders.

Opportunities

Green infrastructure planning is essential in new development, creating places and spaces in which we will want to work and live. Investing in new and existing green spaces and access networks and protecting existing spaces and networks within new development will be a key part of enhancing the Borough's image as a setting for growth and promoting sustainable prosperity.

Providing accessible green space and multifunctional access networks that connect the new and existing housing areas, attractive town centres and the countryside is likely to increase the appeal to potential new communities and provide an asset for existing residents. The concept statements[66] produced for the four alternative urban extension options are a good example of the way in which natural and human access networks can be integrated within development.

The rural economy could benefit through farm diversity such as biofuel (short rotation coppicing) in areas of poor soil quality and the promotion of local produce. In some instances, opportunities for alignment with nearby tourism assets could provide additional income – for example providing local produce for hotel and restaurants or in some cases providing additional tourism facilities such as accommodation and/or attractions.


STAFFORD DISTRICT
STAFFORD
Figure 4.7
Potential new development
Stafford Town
Canals
Ponds, Lakes & Reservoirs
Rivers & Streams
Housing Areas
Employment Areas
Urban Extensions
Green Space
Stafford Borough Boundary
Urban Areas
TEP
Stafford
BOROUGH COUNCIL
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Tourism development and/or improving the access to and the quality of existing assets such as the canal network and Cannock Chase can provide the setting for an increase in tourism. This is not restricted to visitors from outside the area and must include provision for the residents of the Borough to visit and use these assets such as proposed in the Stone Town Centre Vision. This in turn supports the local economy through localising spending habits.

Green infrastructure should be an integral part of design and layout of development that understands and is sympathetic to the needs of existing communities and the demand placed on existing assets by new residents.

Improving accessibility and use of green/blue spaces

Stafford Borough has a variety of green and blue space typologies from neighbourhood green spaces such as playgrounds and parks through to much larger areas such as the National Nature Reserve at Aqualate Mere and Shugborough Park (figure 4.8).

Both Stafford and Stone have large open spaces located within the towns: Stafford town has an extensive green network including the nationally important Doxey and Tillington Marsh SSSI and nature reserve and Stone is bisected by the canal and river corridors and flood plain. In addition to this Stafford town is close to the Cannock Chase AONB, Local Nature Reserves and a large amount of accessible woodland.

Flowing through the Borough are the Rivers Trent and Sow and the Trent & Mersey and Staffordshire & Worcestershire Canals. The Borough is also home to some larger standing water bodies at Trentham Gardens, Aqualate Mere and to the north and west of Eccleshall. Trentham Gardens and Aqualate Mere also serve the settlements of Stoke on Trent and Newport respectively.

The river network and canal corridors are the backbone of Stafford town's green network physically connecting it to the surrounding countryside, although there is limited public access (figure 4.9) in the land between Queensville, Wildwood and Rickerscote in the south of the town along the river corridor. Stone's main green space assets lie alongside the River Trent, which also has limited public access, and similarly although there are multifunctional green spaces in Gnosall and Eccleshall (figure 4.10) there is almost no designated access to the river network. These two settlements and are surrounded by open countryside and there is some access across the landscape, although the south east of Eccleshall has no public access routes.

A disused railway line provides Gnosall with both a national cycle route and a national trail, along which Stafford town can be reached; although Aqualate Mere to the west is close to the line it is not linked up to the trail for cycles.

The Borough has approximately 4,050ha of woodland (6.7% coverage) although accessible woodland is at a premium: 706ha of woodland is accessible and of this some 566ha is located within the Cannock Chase area, leaving the rest of the Borough with only around 140ha of accessible woodland. Stafford town, Stone, Gnosall and Eccleshall do have woodland close by but very little is publicly accessible.

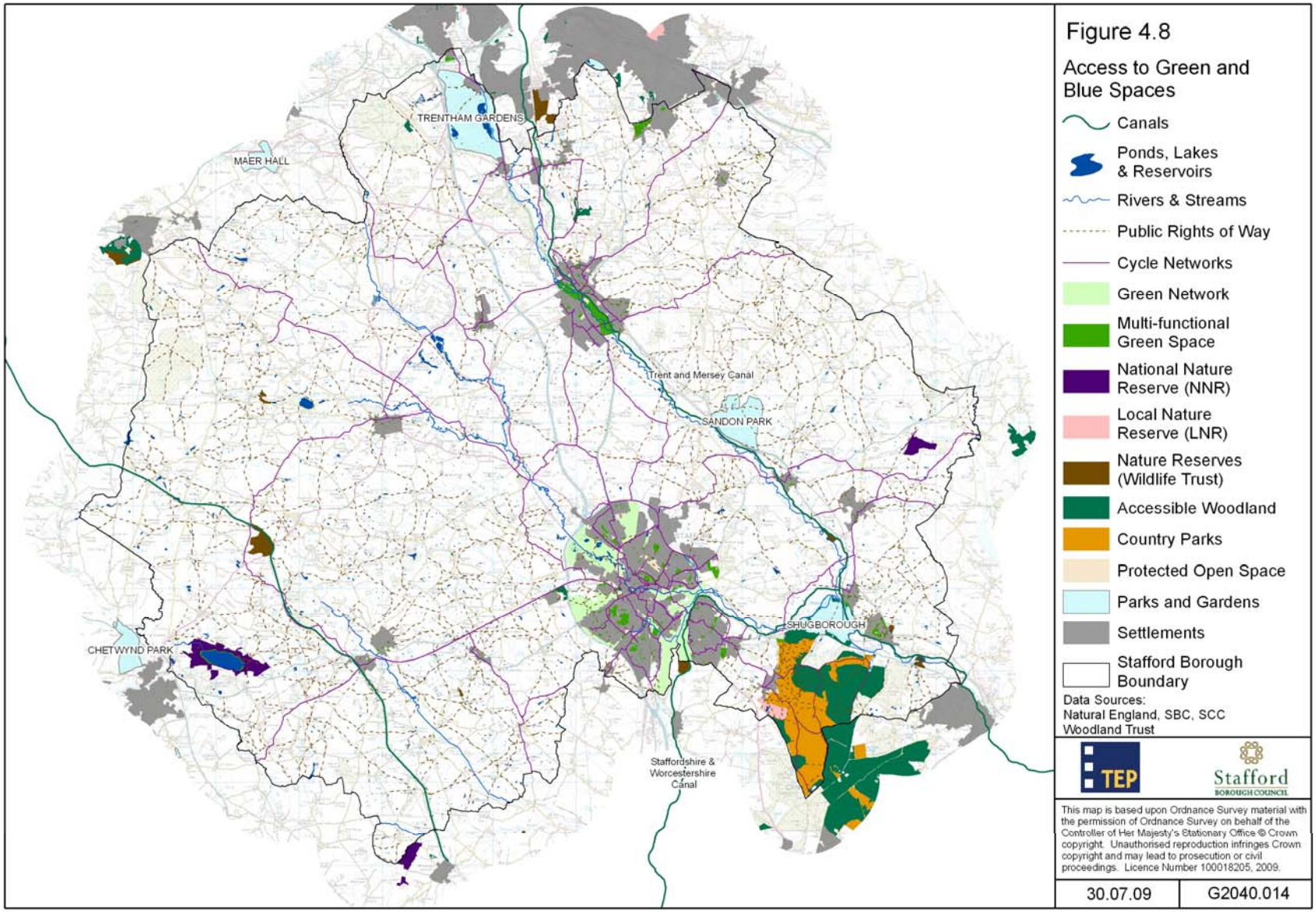

Figure 4.8

Access to Green and Blue Spaces

- Canals
- Ponds, Lakes & Reservoirs
- Rivers & Streams
- Public Rights of Way
- Cycle Networks
- Green Network
- Multi-functional Green Space
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)
- Nature Reserves (Wildlife Trust)
- Accessible Woodland
- Country Parks
- Protected Open Space
- Parks and Gardens
- Settlements
- Stafford Borough Boundary

Data Sources:
Natural England, SBC, SCC
Woodland Trust

TEP

Stafford Borough Council

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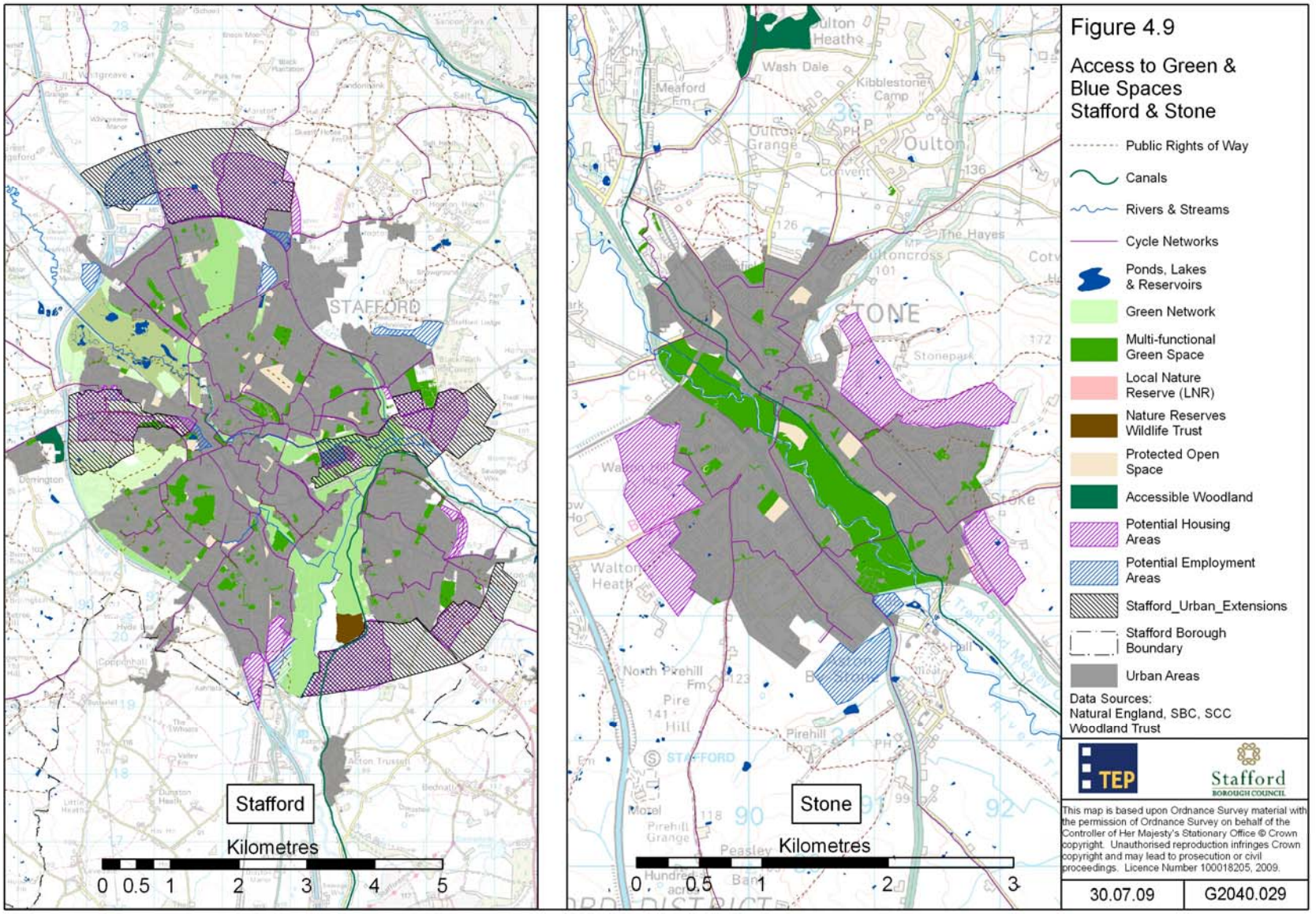
Figure 4.9
Access to Green & Blue Spaces Stafford & Stone
Public Rights of Way
Canals
Rivers & Streams
Cycle Networks
Ponds, Lakes & Reservoirs
Green Network
Multi-functional Green Space
Local Nature Reserve (LNR)
Nature Reserves Wildlife Trust
Protected Open Space
Accessible Woodland
Potential Housing Areas
Potential Employment Areas
Stafford_Urban_Extensions
Stafford Borough Boundary
Urban Areas
Data Sources:
Natural England, SBC, SCC
Woodland Trust
STAFFORD
Stafford
Kilometres
0 0.5 1 2 3 4 5
STONE
Stone
Kilometres
0 0.5 1 2 3
TEP
Stafford
BOROUGH COUNCIL
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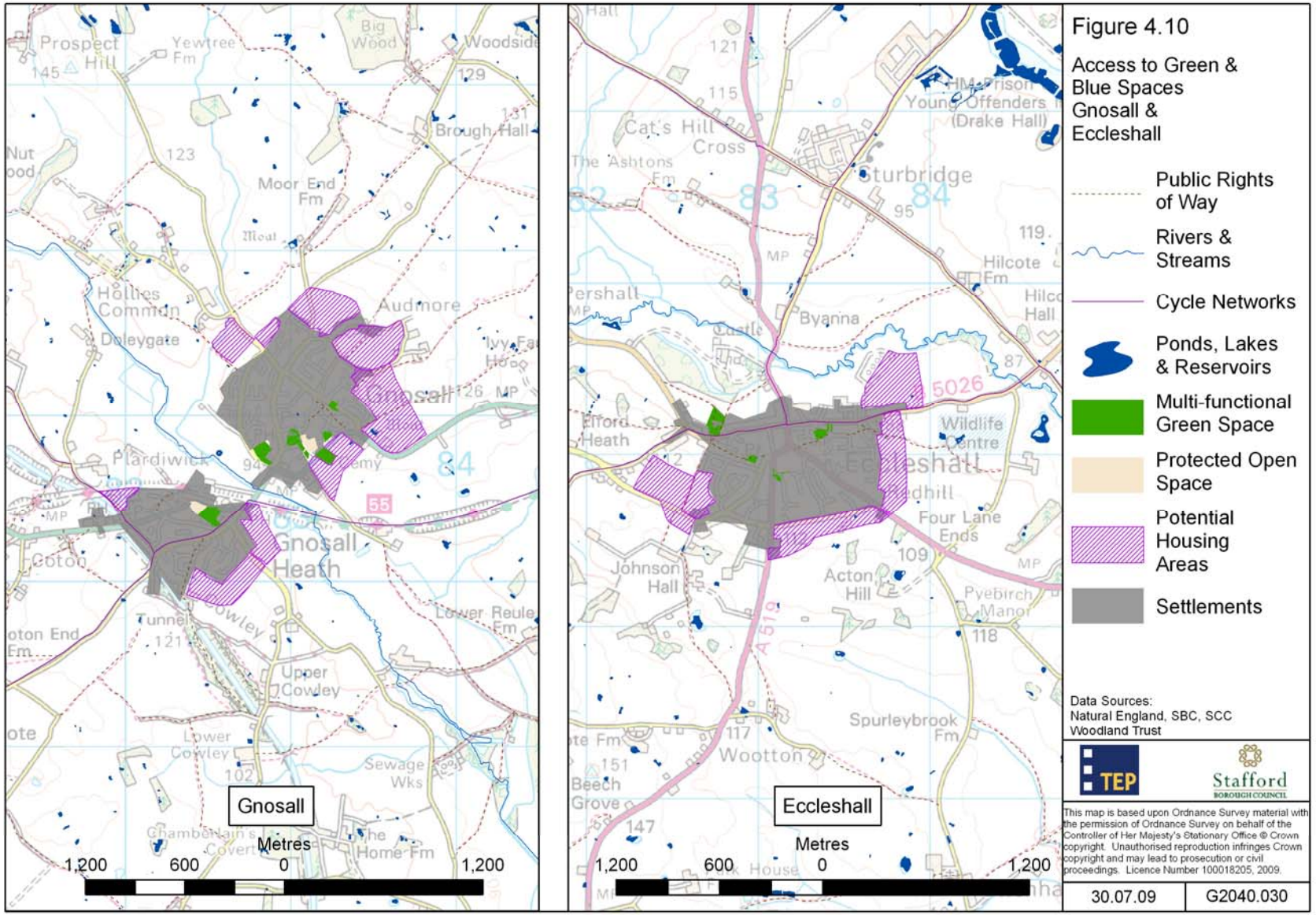
Figure 4.10
Access to Green & Blue Spaces Gnosall & Eccleshall
Public Rights of Way
Rivers & Streams
Cycle Networks
Ponds, Lakes & Reservoirs
Multi-functional Green Space
Protected Open Space
Potential Housing Areas
Settlements
Data Sources:
Natural England, SBC, SCC
Woodland Trust
TEP
Stafford Borough Council
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30.07.09
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Gnosall
Metres
1,200 600 0 1,200
Eccleshall
Metres
1,200 600 0 1,200

It also has relatively few natural green spaces within its settlements; only 50% of households are within 10 minutes of a natural space, although there is good access to the countryside in the rural and urban fringe areas. Areas for improving access to natural green space highlighted in the PPG17[67] are improved signage, interpretation and parking and provision for the disabled, which are also highlighted in the Borough's Cultural Strategy[68].

The PPG17 assessment also made several recommendations regarding the future use and management of the Borough's green and open spaces, including (amongst others) increasing the biodiversity of spaces, altering the uses of some spaces to better reflect the local community needs and endeavouring to link up those spaces to the wider cycle and walking network to enable better access. The assessment also noted a lack of quality and function of some types of green space, particularly children's play areas, natural green space and provision for teenagers.

Threats

The most immediate threat to the Borough's green and open space is development and how this will affect existing spaces and the access networks that connect them. Growth will be a challenge for the Borough and ensuring that the green space needs including access for (new and existing) residents are addressed will be an important part of sustainability for the Borough. Several suggested potential development areas will in fact reduce the amount of open space of a natural essence especially those located around the Sow, Penk and Tixall Heath.

The potential over use of existing spaces could result in damage to popular sites and to increases in traffic congestion, which could be exacerbated by the effects of climate change (warmer drier climates encouraging greater use of outdoor spaces which are already under pressure from temperature changes and increased flooding events).

Lack of functionality and quality of spaces can lead to disinterest from the community, which in turn often leads to abuse and instances of anti-social behaviour in spaces deemed of little worth. This leads to better quality and more functional sites attracting greater numbers of people and to further neglect and vandalism on less popular sites, leading to increased maintenance costs to cater for increased visitor in some areas and to make good damage to less popular sites.

Opportunities

The largest and most significant of the opportunities for provision and access to green spaces are offered by the proposed Country Parks in the north and the south of Stafford town. Both of these areas are located in or adjacent to neighbourhoods with high levels of deprivation and a high percentage of young people. Ensuring that the Parks meet the needs of these neighbourhoods can realise many benefits such as improving exercise levels and health, and offering a quiet place for relaxation to help mental well-being.

Such Country Parks can be multifunctional with room enough for biodiversity initiatives and flood control measures such as rainfall storage or overflow catchments for the adjacent water courses. Linking these Parks with other assets and access networks will increase the town's attraction to visitors and reduce pressure (from visitors and residents alike) on existing assets such as Victoria Park and Cannock Chase AONB.

A southern Country Park would provide a large open green space in between Stafford town and the AONB, which could help reduce the overuse of this sensitive area. In addition sustainable access routes designed into the Park could better connect Stafford town to Cannock Chase, improving the interest for visitors to the Borough. These two new Parks would also enhance Stafford's image as an attractive proposition for would-be residents and investors.

New development could improve access in areas that currently have limited access to the countryside. One example could be the northern extension where currently there is no access to the countryside, but could link up to the Public Rights of Way network that travels between Marston and Whitgreave (see figure 4.9). Another could be the western extension that sits astride the National Cycle Route and National Millennium Trail. Improvements to this trail could be the extension of the cycle route towards Aqualate Mere and Newport, providing better access to one of the Borough's key assets and linking Newport with Gnosall and Stafford town.

Work planned in Stafford town centre will give traffic-free access between Newport-Gnosall-Derrington and Stafford town. Equally development around Eccleshall to the north of the B5026 could provide access to the river corridor and development in Gnosall could improve access to the Way for the Millennium and National Cycle Route. For Stone there is a real need to improve access to the central waterway corridor. Development on the periphery of the town will need access to green space and in combination with the Stone Town Centre Vision there is a real opportunity to create this much needed provision.

Trentham Park is a popular area with not only attractions but facilities for staying guests. For Stone with its attractive town centre, river and canal heritage this is an opportunity to put itself forward as an extra destination for those visiting the park. Improved access along the river and cycle links will make Stone more accessible for the community of the town, visitors at Trentham Park and the communities of Stoke on Trent.

Currently access to the Borough's water networks is limited with many rivers and streams lacking footpath provision. Creating access networks alongside some of these natural networks will allow for a greater range of activities such as cycling, angling or simply walking.

Both Stafford and Stone towns have areas allocated as employment sites on the transport corridors leading into the settlements. Creating attractive settings in these areas not only provides employees with attractive and healthy work environments, but can become gateways into the towns helping to attract investment.

Protecting, enhancing and extending biodiversity resources and natural networks

Stafford Borough has a wide variety of natural and semi-natural habitats, including woodland, marshland, heath and grasslands. Many of these habitats have declined over the last few decades resulting in a loss of biodiversity. Some 50% of marshy grassland was lost between 1979 and 1999[69] and almost all of the flower rich meadows have been destroyed since the end of the Second World War. Lack of traditional management in the Borough's woodland and heathland such as coppicing and grazing has reduced the biodiversity of these nationally important habitats.

Loss of grassland and changes in management has also caused a decline in the number of wetland birds such as the lapwing (a 52% decline between1982 and1998) and snipe (a 40% decline between 1978 and 1998)[70]. The Borough is also home to several nationally important mammal species including the otter and the European polecat (*Mustela putorius)* re-establishing from Wales after persecution in England.

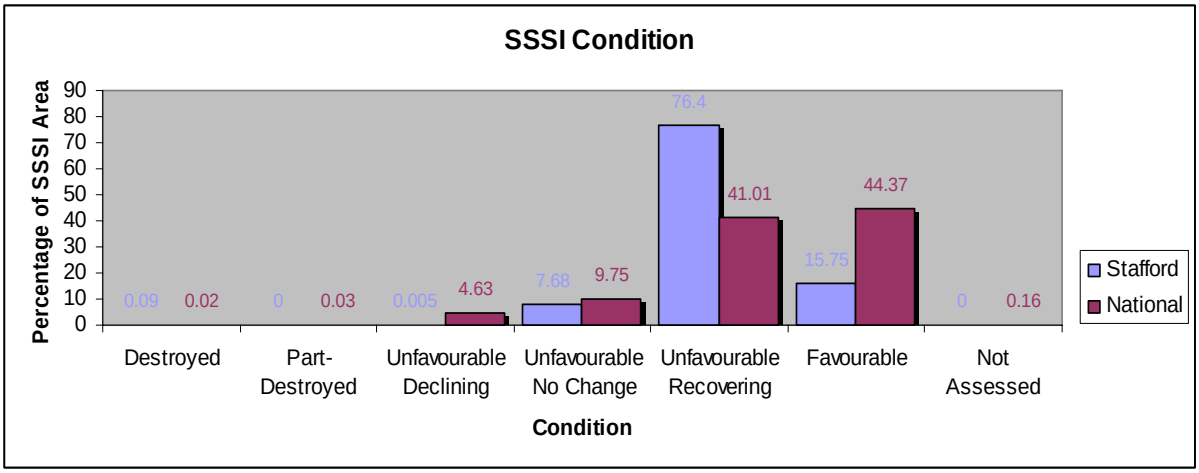
Several important habitat types and species of local and national importance can be found within Stafford Borough, including:

Habitat Typology/Species	UKBAP	SBAP
Ancient Woodlands		•
Peat Bogs	•	•
Lowland Acid Grassland	•	•
Lowland Heathland	•	•
Lowland Wet Grassland	•	•
Wet Woodland	•	•
Saltmarsh/Grazing Marsh	•	•
Nightjar (*Caprimulgus europaeus*) Red List Species	•	•
Black Poplar (*Populus nigra*)		•
Great Crested Newt (*Triturus cristatus*)	•	•
Otter	•	•
Water Vole (*Arvicola terrestris*)	•	•
Grass Snake (*Natrix natrix*)		•
Snipe Amber List Species		•

The Borough has 1,543 hectares (ha) designated as Sites of Special Scientific Interest (SSSI), of which 385ha and 1,001ha have further international designation as RAMSAR and Special Areas of Conservation (SAC) respectively. The Doxey and Tillington Marshes are a 129ha SSSI and Wildlife Trust Nature Reserve that connects the centre of Stafford town with the surrounding countryside and are an important part of natural green space provision in the town. The Borough also has 3192ha of Sites of Biological Interest.

The condition of the Borough's SSSIs is on the whole positive, although the area of SSSIs in favourable condition is lower than the national and the large areas of wilderness SSSI such as The Wash and uplands distort these figures. What is more positive is the high percentage of sites/area that are recovering and the lower than national figure for no-change and declining condition.

Table 4.1: Condition of Sites of Scientific Interest in Stafford Borough



Source: Natural England, 2009

The Borough has two National Nature Reserves at Aqualate Mere and Chartley Moss covering some 258ha between them. At a more local level Stafford Borough has 96ha designated as Local Nature Reserves (LNR) spread out over seven sites, the biggest of which is Brocton, within the Cannock Chase Country Park. Stafford town has 16ha of LNR spread over 4 sites, all of which are to the north of the River Sow. In addition to this there are eight Staffordshire Wildlife Trust sites within the Borough, including the unusual salt-marsh site at Pasturefields, the last remaining site of its type in the Trent valley. Sites of Biodiversity Interest (SBIs) account for 2774 ha, in addition to this there are 467 hectares of Biodiversity Alert Sites (BAS).

The Borough's remaining habitats (particularly woodland - see figure 4.11) are fragmented leaving them vulnerable to climate change and reducing the persistency of species, although the rivers and streams networks are still an important natural connecting feature that covers much of the Borough. Hedgerows are still a popular method of enclosure and also provide a connectivity function, with many kilometres designated as SBIs.

The River Trent is one of the country's most popular fisheries. Angling is one of the UK's most popular pastimes with over 4 million people over 12yrs old participating in 2005 (2.4 million freshwater and 1.6million sea fishing). In the UK this generated £2.75 billion[71] through rod licenses, purchase of tackle/bait and day tickets/membership of clubs, supporting around 20,000 jobs. This income supports not only local employment but also enables the Environment Agency to carry out restocking and improvements to rivers and lakes.

Threats

New development has the potential to further increase the level of fragmentation of habitats and to disturb the natural corridors that exist within the landscape. Development close to the river courses and human activity arising from this proximity could lead to the disturbance of important wildlife species such as otter. This is likely to increase as the population of the Borough increases.

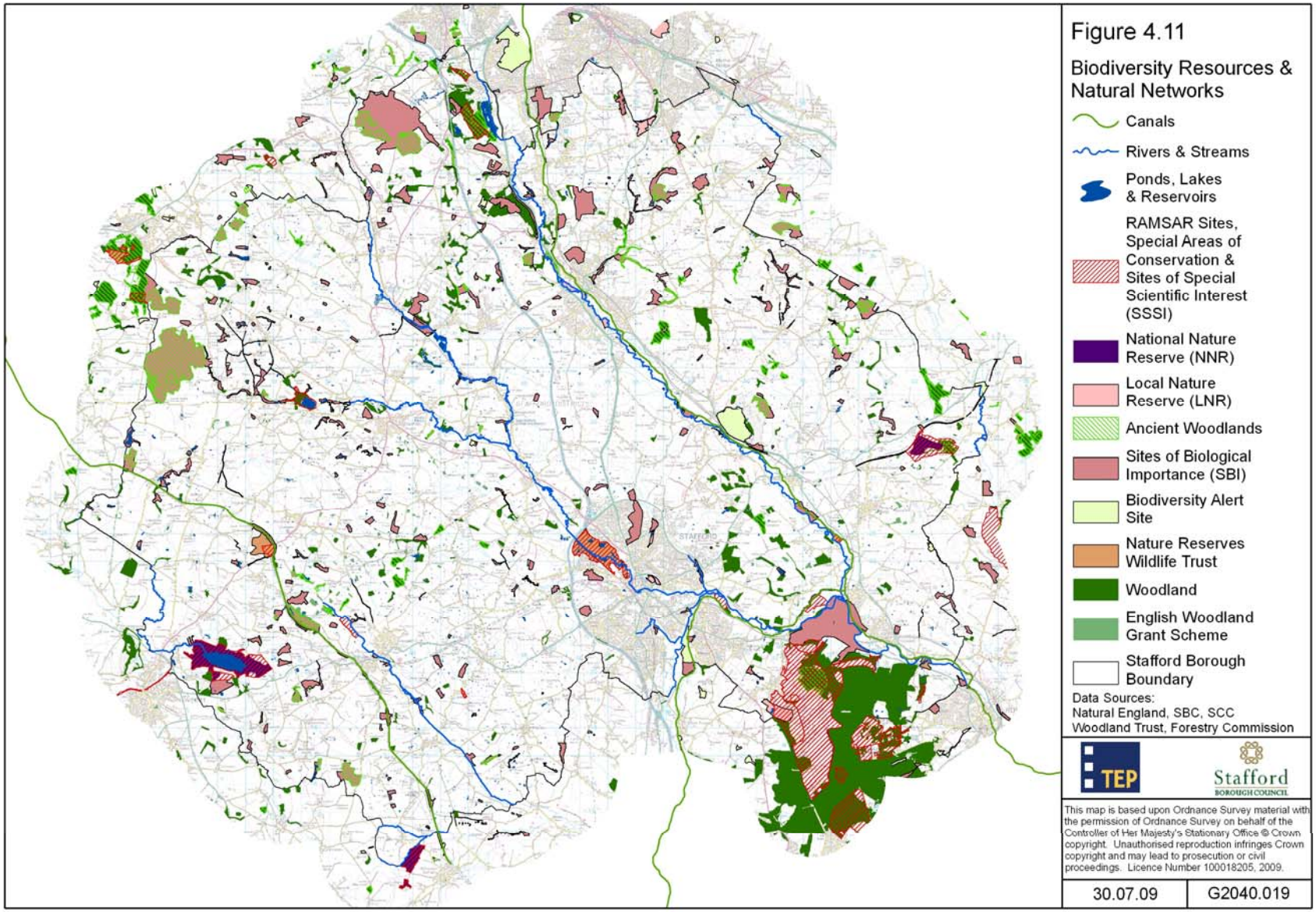


Figure 4.11
Biodiversity Resources & Natural Networks
Canals
Rivers & Streams
Ponds, Lakes & Reservoirs
RAMSAR Sites, Special Areas of Conservation & Sites of Special Scientific Interest (SSSI)
National Nature Reserve (NNR)
Local Nature Reserve (LNR)
Ancient Woodlands
Sites of Biological Importance (SBI)
Biodiversity Alert Site
Nature Reserves Wildlife Trust
Woodland
English Woodland Grant Scheme
Stafford Borough Boundary
Data Sources:
Natural England, SBC, SCC
Woodland Trust, Forestry Commission
TEP
Stafford
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Greenfield sites that are earmarked for development as part of the growth agenda will have an impact on the Borough's wildlife. Even areas thought not to have significant wildlife value as habitat are often used as thoroughfares for forage and dispersal and this needs to be considered in development design and mitigation, as laid out in Stafford Borough Ecological Desk Study 2008[72].

Increased fragmentation and reduced connectivity will become an even greater threat as our climate changes. The need to disperse and find more suitable conditions requires this connectivity in the landscape. Equally small isolated patches of habitat are vulnerable to disturbance such as fire, flooding and disease which are likely to increase as the climate changes.

The increase in flooding that could arise due to poorly designed development could impact upon the water quality in the river system by allowing chemical and organic pollutant to enter the water courses. An increase in the level of flooding could also cause accelerated erosion which can lead to the silting-up of rivers and release of nutrients from agricultural land into the rivers. The quality of the water entering the river system has a direct effect on the species within it and adversely impact on fish stocks. This has consequences not only for the biodiversity of the river which includes around 35 species of fish and top-end predators such as otters and grey heron but also for sport fishing. Disconnection of the river from their natural floodplains has also been shown to reduce the viability of fish stocks and fry survival[73].

Without further intervention the decline in farmland bird species will continue, which will have consequences for the food chain, both below and above the farmland birds. Agricultural pests for instance could become prolific as the food chain above them reduces in efficacy.

Opportunities

Within the urban realm there is an opportunity to increase the biodiversity of public spaces, rivers and waterways and access networks, particularly within settlements. The PPG17 recommends the change of green space management to include more biodiversity improvement measures, such as more natural areas that still have a play and educational value for children.

Guidance for new development at all scales could also increase the level of biodiversity through more naturalised planting, flood storage and protection and improvement of existing wildlife networks. This will help reduce the fragmentation of habitats and improve connectivity. For those developments located on green field sites, the existing areas of biodiversity value could be retained within the layout. Whilst some space will inevitably be lost to development, the improvement of on-site and off-site biodiverse areas could enable a net gain in the biodiversity of the Borough.

The level of connectivity for wildlife and for the communities of the Borough can be increased through their identification, improvement and integration into the access networks to create multifunctional networks. Examples of this could be the stream networks that pass close by or through the new development areas.

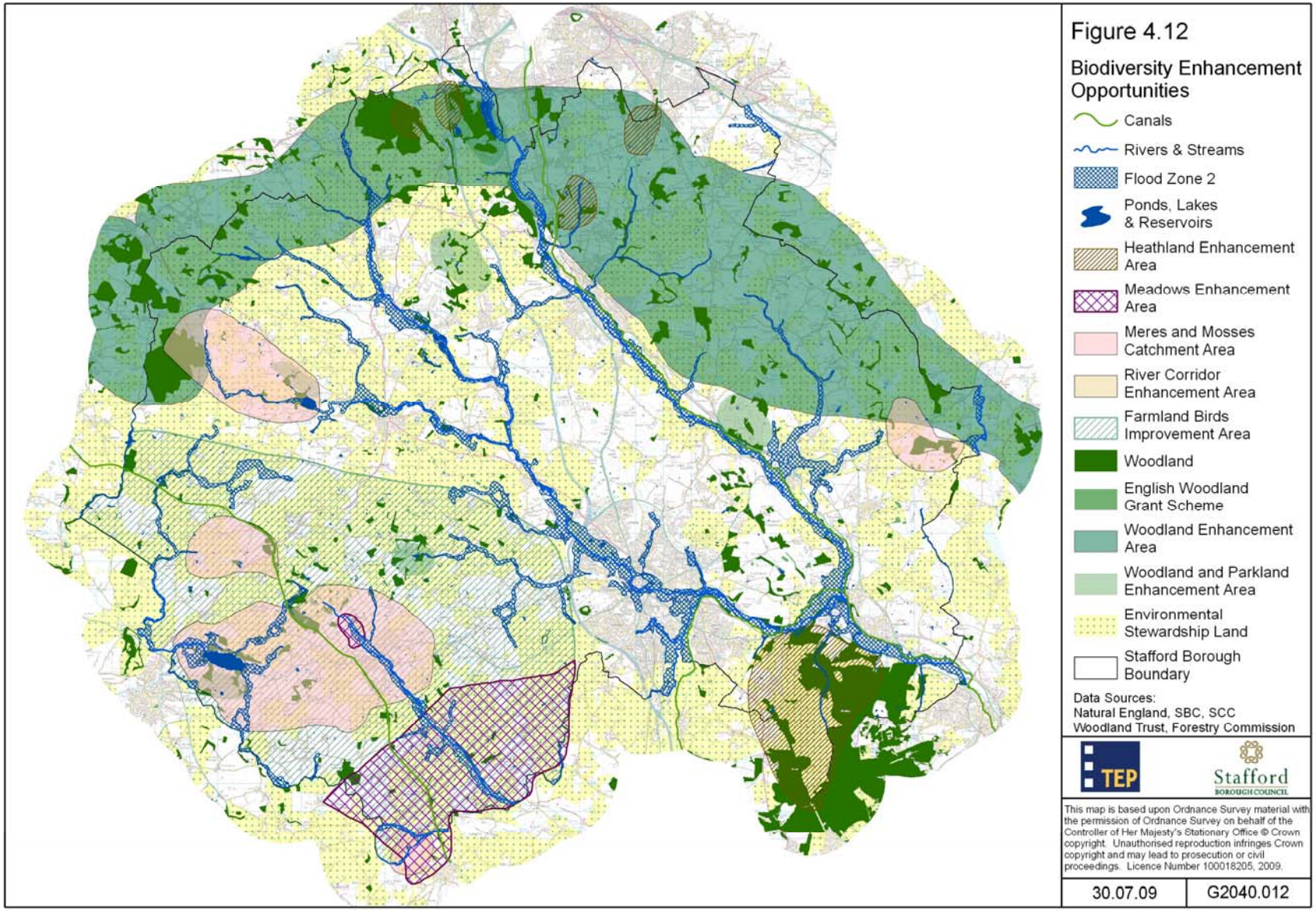
Figure 4.12
Biodiversity Enhancement Opportunities
Canals
Rivers & Streams
Flood Zone 2
Ponds, Lakes & Reservoirs
Heathland Enhancement Area
Meadows Enhancement Area
Meres and Mosses Catchment Area
River Corridor Enhancement Area
Farmland Birds Improvement Area
Woodland
English Woodland Grant Scheme
Woodland Enhancement Area
Woodland and Parkland Enhancement Area
Environmental Stewardship Land
Stafford Borough Boundary
Data Sources:
Natural England, SBC, SCC
Woodland Trust, Forestry Commission
TEP
Stafford
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The Borough's floodplains are important resources, for wildlife and for people. Protecting these areas not only provides space for wildlife and important recreational space, but also helps to reduce the risk of flooding and are vital in maintaining fish stock viability in the rivers. Through the Borough's meadows, meres and mosses improvement areas there is real opportunity to reduce flooding and create larger more stable habitat areas.

The Borough has a large amount of agricultural land that is currently under environmental stewardship schemes. There are areas within the Borough, such as along the river networks, where management between sites could be aligned to deliver the spatial need such as riparian management or increasing the viability and numbers of farmland birds.

Stafford Borough Council has identified areas for improving the connectivity of and amount of woodland, meadows, mosses and meres and parkland, these areas can be integrated into the wider Borough GI Strategy (figure 4.12).

Providing the setting and infrastructure for growth

All of the previous thematic functions, and the benefits that green infrastructure can deliver through them, can be combined under the single function of providing the setting and infrastructure for growth in that:

- Sustainable growth must account for the needs of existing and new communities.
- The setting for growth must respect biodiversity, landscapes, heritage and accessibility needs and characteristics.
- Built infrastructure must respond to the changing climate, and provide measures for mitigation and adaptation in its location, design and layout.
- Quality of the environment links strongly with quality of life – which has implications for healthy communities and sustainable economic prosperity.

As such, this provides the over-arching function for green infrastructure in the Borough, to which all other functions (and their associated benefits) contribute.

The next chapter continues this approach by providing a spatial illustration of each of the green infrastructure functions in a public benefit assessment. These are then brought together under the final function to identify where there are particular needs and opportunities for delivering the various green infrastructure functions and benefits.

Chapter 5: PUBLIC BENEFIT ASSESSMENT

A vital part of any green infrastructure strategy is to identify where green infrastructure can deliver the greatest public benefits.

Public benefit is defined in relation to social, economic and environmental goals acting in combination – i.e. sustainability goals. Public benefit has a spatial dimension: the priorities for green infrastructure in Stafford town are likely to be different to those of the villages such as Barlaston or Hixon. It is also essential that green infrastructure resources and assets are assessed in terms of the potential *multiple* (social, economic and environmental) benefits they can bring to the Borough.

The public benefit assessment presented in this chapter helps to identify those areas that can deliver multiple public benefits in Stafford Borough by:

1. Identifying relevant social, economic and environmental functions of green infrastructure in the Borough
2. Using indicators to produce public benefit maps
3. Identifying areas most in need of the various and multiple benefits that green infrastructure can bring to sustain prosperity and quality of life.

1. Identifying relevant social, economic and environmental functions of green infrastructure

Chapter 4 outlines 7 key functions that green infrastructure can deliver in Stafford Borough. These functions are all couched within sustainable prosperity, and can deliver a range of benefits for the residents and landscape of the Borough:

Supporting healthy, sustainable and cohesive communities	Improves access within and between settlements
	Provides opportunities for social and community cohesion and interaction
	Provides opportunities for improving health and well-being
Protecting and promoting local distinctiveness, heritage and cultural assets	Protects and enhances landscape features
	Safeguards historic and cultural assets
	Provides a distinctive and attractive living environment
Adapting to and mitigating against the effects of climate change	Provides additional flood zones that have alternative uses when not in flood, e.g. biodiversity site, country park, etc
	Combats the urban 'heat island' effect'
	Provides opportunities to reduce urban run-off and risk of flooding
	Provides space for wildlife to adapt to climate change reducing vulnerability to local extinction
	Improves air quality, reducing CO2 and other greenhouse gases and pollution

Enabling urban and rural economic growth and sustainable prosperity	Provides a setting to encourage inward investment
	Provides a local environment resource for education, learning and skills development
	Provides a setting for tourism and visitor assets
Improving accessibility and use of green/blue spaces	Provides safe cycling and walking routes to school, work and for recreation
	Increases access to high quality green and open spaces that deliver a range of functions to meet local needs
	Provision for diverse recreational opportunities
Protecting, enhancing and extending biodiversity resources and natural networks	Restores existing and creates new natural networks and corridors to enhance, expand and connect a variety of habitats at the landscape scale
	Safeguards and extends priority habitats and species
	Reverses habitat fragmentation and decline
	Protects soils and watercourses through reducing erosion, silting-up and nitrification
Providing the setting and infrastructure for growth	*Over-arching*

The final function, "providing the setting and infrastructure for growth", combines social, economic and environmental benefits from across all of the other functions, and as such can be seen as an overarching function of GI in the Borough.

2. Producing public benefit maps

For the second stage of the assessment – producing public benefit maps – we have used the Public Benefit Recording System (PBRS)[1].

The PBRS is a GIS based aid to strategic planning & investment. It is also a philosophy assisting cross-sectoral working, enabling co-operation across social, economic and environmental agendas. As a decision making tool, the PBRS brings together social, economic and environmental datasets to present the greatest public benefit potential through a series of maps. This provides the evidence base from which – *with interpretation, vision and on the ground knowledge* – decision makers can make reasoned judgements as to where to invest in green infrastructure.

The Mapping Process

Public benefit assessment considers the various green infrastructure functions in a coherent way. Using a series of datasets, a spatial analysis is first produced for each of the first 6 functions described above, to highlight where green infrastructure can bring particularly high levels of public benefit to Stafford Borough, considering both needs and opportunities to address those needs. We have then grouped the various functions together in two final maps which represent the over-arching, final function of "providing the setting and infrastructure for growth", to help us to identify co-incidences and correlations between functions (i.e. those areas where *multiple* benefits from green infrastructure investment may be obtained).

[1] www.pbrs.org.uk

The datasets used in the assessment and each of the individual spatial analyses for the individual functions are included in Appendix 1, whilst the final overarching maps are presented and discussed below. On all maps, red shading indicates those areas which have the greatest potential to deliver public benefits, and blue shading those areas with the lowest potential.

3. Identifying priority areas

Figure 5.1 illustrates the combined public benefits needs in Stafford Borough. It combines information across several functions to highlight those areas:

- Where population density is relatively high and communities are experiencing comparatively poor health and combined deprivation (*healthy and sustainable communities*)
- At risk from flooding due to their location within flood zones and the high proportion of sealed surfaces, where air quality is poorest and where denser populations are less mobile due to age or health restrictions (*adapting to and mitigating against climate change effects*)
- Where skills and employment levels are relatively low (*economic growth and sustainable prosperity*)
- Where soils and watercourses are at greatest risk from erosion, and pollution (*biodiversity and natural networks*)

Perhaps unsurprisingly, the assessment shows that the greatest public benefit needs that green infrastructure can be delivered against can be found in the urban areas, with several parts of Stafford town showing particular needs.

For example, communities in Doxey experience relatively high levels of deprivation (combined, health and skills and employment deprivation) and it is a relatively densely populated area. Its location close to the motorway and within a floodzone means that the area could be susceptible to increased impacts from climate change, particularly flood risk and pollution (with associated air quality and 'heat island' implications), whilst adjacent water courses may also be at risk from surface water run off from the motorway.

However, the community has the significant assets of Doxey Marshes, the castle and the golf course in relatively close proximity, with footpath connections to the Way for the Millennium. As one of the potential areas identified for significant housing growth, any developments should respond to the circumstances within the current community to ensure that both development and associated green infrastructure interventions seek to alleviate these needs.

Other broad areas of need are found in the north east sector of Stafford town (particularly Littleworth, Forebridge and the area south of Stafford Common), a southern 'triangle' bridging the north-south rail line (including Rising Brook, Burton Manor and Queensville) and – to a lesser degree – an area to the south west around Western Downs. In comparison to the rest of the Borough, Stone also shows moderate levels of need.

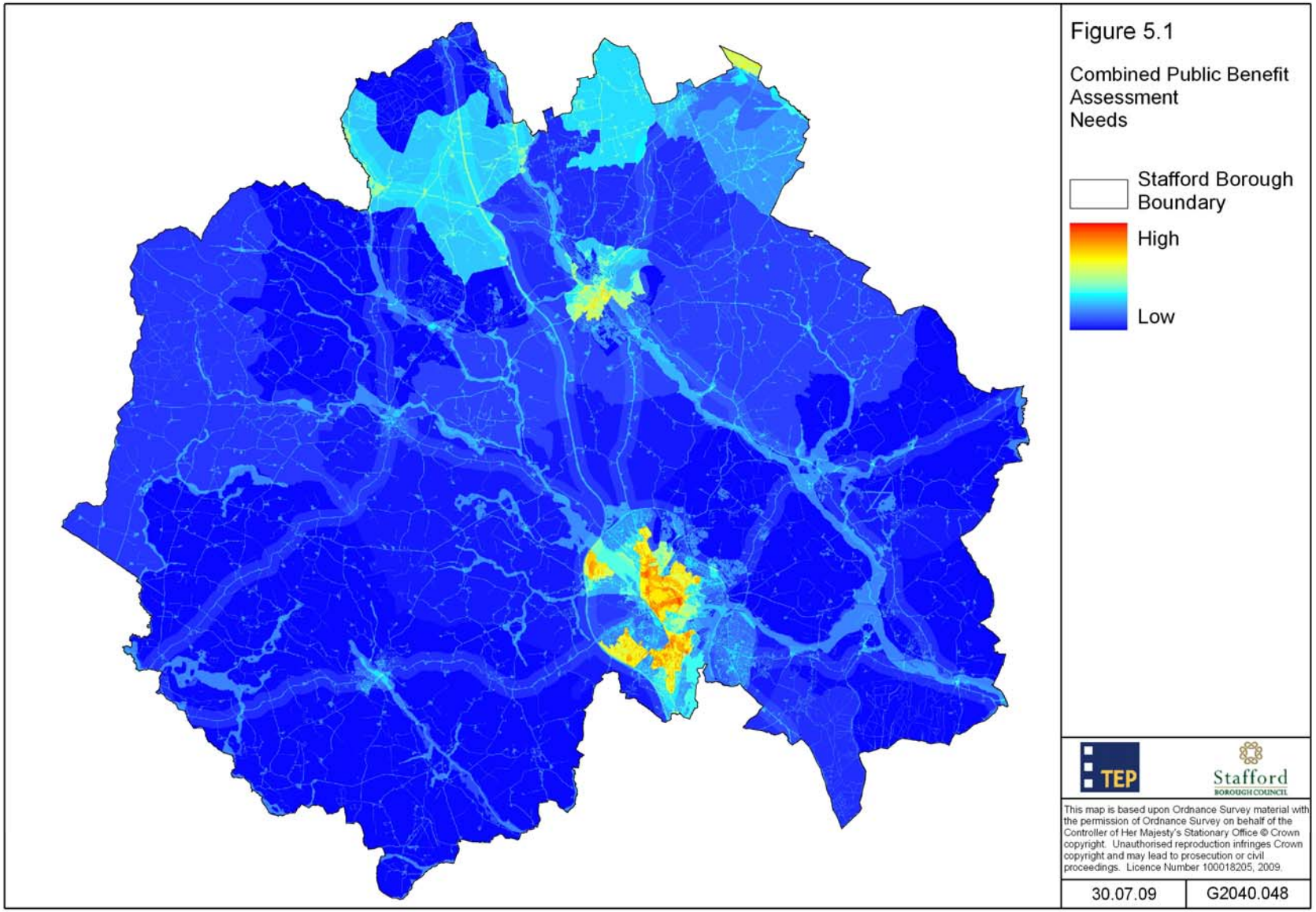
Figure 5.1
Combined Public Benefit Assessment
Needs
Stafford Borough Boundary
High
Low
TEP
Stafford
BOROUGH COUNCIL
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These areas all show very similar characteristics to Doxey: they are relatively deprived (combined, health and skills and education deprivation) with high population densities. There is a higher risk of flooding due to both the high proportion of sealed surfaces and the proximity of flood zones, particularly in Rising Brook which is bounded to the north by the River Sow and Rickerscote on the River Penk floodplain, which also contribute to the risk to watercourses of pollution.

Figure 5.2 in contrast illustrates where green infrastructure presents opportunities for delivering public benefits, particularly those areas where:

- The network of assets and access routes provide opportunities for recreation and interaction (*healthy and sustainable communities, accessibility and use of green spaces*)
- There are natural, historic and landscape features that contribute to local distinctiveness and so should be protected and enhanced (*local distinctiveness, heritage and culture*)
- Options for ameliorating the impacts of climate change on communities and wildlife exist (*adapting to and mitigating against climate change effects*)
- There are attractive environments that encourage investment, education and tourism (*economic growth and sustainable prosperity*)
- Existing biodiversity and habitat network can be enhanced and new habitats created (*biodiversity resources and natural networks*)

Cannock Chase presents a much higher level of opportunity than much of the rest of the Borough, given its biodiversity, landscape and recreational significance. Within the AONB, Shugborough offers particular opportunities for delivering public benefits via green infrastructure, particularly in relation to accessible high quality spaces for recreation and its importance in terms of local distinctiveness and quality of place.

Similarly, the River Sow on the northern boundary of the AONB is particularly important, however while this area delivers access, recreation and distinctiveness benefits it also has important climate change (flood mitigation) potential and biodiversity importance. These critical functions need to be protected from possible recreational impacts which may damage the area's potential – this will be particularly important if the Hanyards potential growth location is selected for development, since increases in recreational use and in sealed surfaces and road use may present particular risks such as increased pollution and damage to sensitive habitats and biodiversity. A similar situation exists where the River Sow enters Stafford town north of Baswich, and here the risk of development at Hanyards would be particularly significant.

Figure 5.2 also illustrates the significance of the Borough's canals and rivers, particularly when considered alongside the key access routes as part of an overall linear network. All other areas of higher opportunity for delivering public benefits within the Borough are located along these features: Sandon Park and Old Hall and parts of Stone along the River Trent/Trent & Mersey Canal, and several areas within Stafford town that link to the River Sow, the Way to the Millennium and the National Cycle Route network in the town centre. This network will be a critical element of

the Borough's green infrastructure, providing a framework of access, biodiversity, recreational and heritage/distinctiveness value – fully demonstrating the multifunctional nature of green infrastructure. Interventions should seek to maximise the potential of the network, but also use it to direct away from more sensitive assets.

This assessment provides an indication of where green infrastructure interventions may best be able to deliver against needs and take advantage of opportunities across the Borough. However, it is important that this assessment and the associated maps are considered as only one layer of the evidence gathered in support of the Green Infrastructure Strategy, and they should be considered alongside the detailed research in previous chapters.

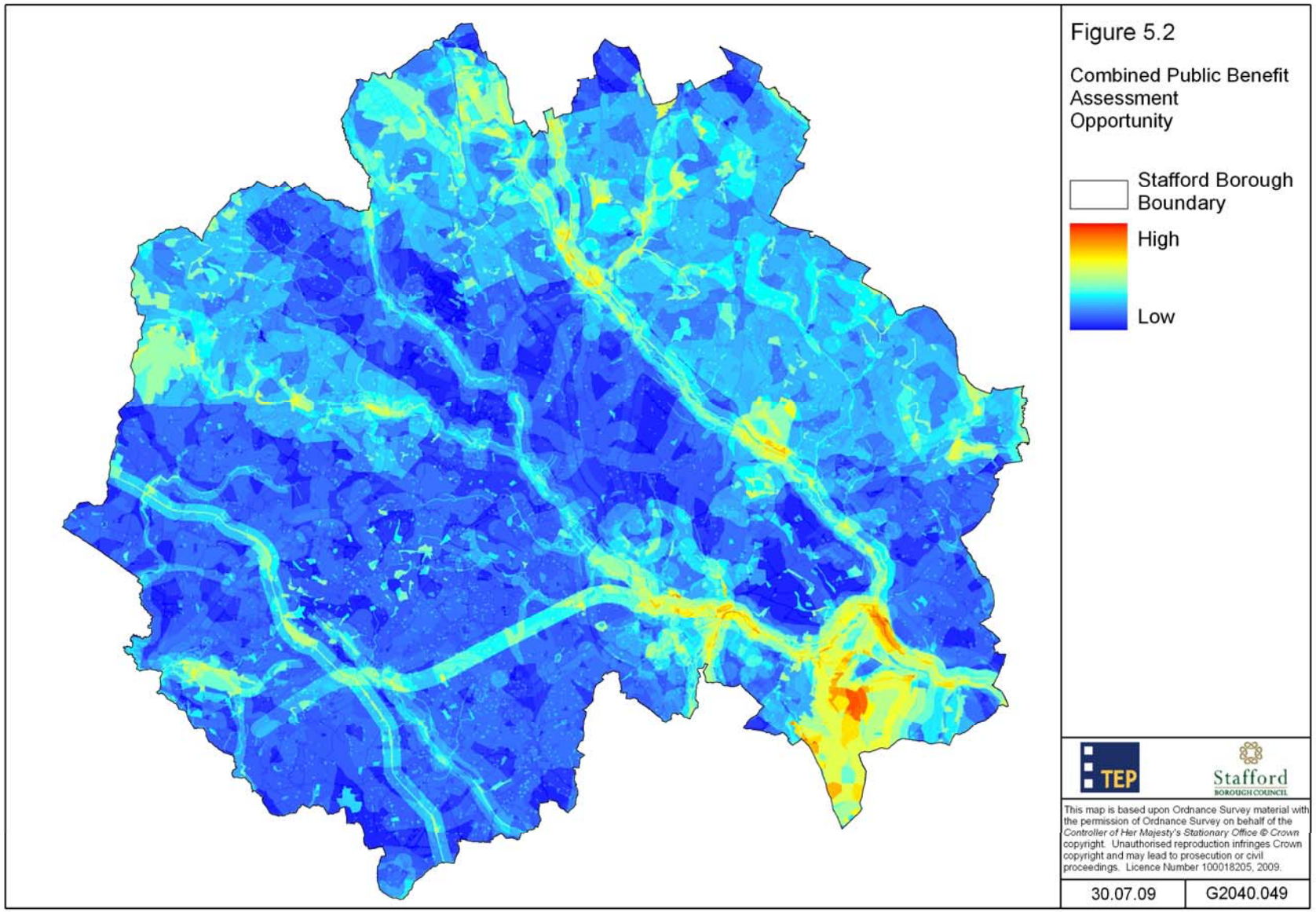
Figure 5.2
Combined Public Benefit Assessment Opportunity
Stafford Borough Boundary
High
Low
TEP
Stafford
BOROUGH COUNCIL
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Chapter 6: SENSITIVITY ANALYSIS OF POTENTIAL GROWTH LOCATIONS

There are four 'directions of growth' proposed for Stafford Borough (see figure 2.1): Marstongate to the north of Stafford town, Hanyards to the east, Lower Walton (South Stafford) and Burley Fields to the west of the town. It is essential that this green infrastructure strategy is able to assess and make recommendations based on the relative sensitivity of each of these sites in relation to their green infrastructure assets and functions.

This process has already begun:

- A green infrastructure 'concept statement' has been produced for each of the proposed growth areas. Green infrastructure concept statements were devised by the Countryside Agency (now Natural England) as a tool for ensuring that new developments bring economic, social and environmental benefits and to ensure that the right development takes place on the right site. The concept statements for Stafford were intended to provide a bold and imaginative approach to green infrastructure within each of the development locations and to form the 'backbone' for development masterplans.
- A Stafford Borough Infrastructure Strategy has made recommendations on the infrastructure requirements for a range of growth scenarios in the Borough, with recommendations for the preferred direction of growth based on the evidence found. Green infrastructure and flooding are two elements of this assessment.

Both the Concept Statements and the Infrastructure Strategy place green infrastructure at the heart of future development.

This sensitivity analysis will bring the findings of those two extensive pieces of research together with the evidence gathered in this research to identify the relative sensitivity – in green infrastructure terms – of each of the proposed directions for growth. It is recognised that there are other development locations across the Borough. However, the four areas listed would be the main focus for development and as such the sensitivity analysis is restricted to those key areas.

Marstongate (North Stafford)

Marstongate is a largely agricultural area lying to the north of the Parkside area of Stafford town and in close proximity to Hopton (to the east) and Marston to the north, with the M6 to the west. Proposals for the area include residential development (up to 3,000 houses at a density of 30 per hectare) alongside 40 ha of employment land. The development location will include district centres, transport hubs, a countryside centre and a school.

The Concept Statement lists existing green infrastructure assets in the area as:

- *Biodiversity and Geodiversity*

  - Marston Brook valley and associated wet grassland
  - New Plantation / Little Gorse woodland complex
  - Common land linking to Stafford town centre
- *Access and Recreation*
  - Areas of common land
  - Accessible routes across M6 motorway to footpath network west of Stafford
  - Existing footpath / bridleway network north and east towards the Trent Valley corridor
- *Cultural Heritage*
  - Common land and historic field systems around Marston including remnant piecemeal enclosure
  - Frequent marl pits identified through associated tree and shrub growth
  - Marston Lane ancient winding route
- *Landscape and Visual*
  - Existing landscape features and topography
  - Visual network comprising sight lines between characteristic high points, including views to Beacon Hill and Stafford Castle
  - Remnant historic field systems and red brick farmsteads

The Infrastructure Strategy recognises the need for green infrastructure to address issues of down stream flooding, link into the existing Stafford Common to the south of the A513 and provide habitat to support existing populations of protected and notable species. This approach is necessary because of the scale of development proposed, the need to meet aspirations for a high quality living environment and to prevent development exacerbating flood problems downstream. Proposals for the provision of a country park (managed as an agricultural tenancy) associated with development is particularly welcomed as an alternative visitor destination to Cannock Chase.

The downstream flooding implications referred to in the Infrastructure Strategy can be seen in figure 4.6. Marston brook runs through the development site, and whilst there is no flood risk in the area at present, the increase in sealed surfaces associated with development and much reduced water infiltration as a result may have significant impact downstream as the Brook enters the urban area.

Apart from a small section around Marston village, the landscape in the proposed development area has a relatively low historic environmental character value (see figure 4.4). Whilst the area includes 4 SBIs, there are no habitats of other national or international designation.

Hanyards (East Stafford)

The Hanyards development area is focused around the River Sow and includes the agricultural grazing land along the lower flood meadows of the River Sow and Staffordshire & Worcestershire Canal. The area extends west to Forebridge and Queensville, with St Thomas Priory to the east and the Stafford University site to the north. An area of former industrial use close to the railway line has also been identified as having potential for residential development.

The development will incorporate a total of 1,850 dwelling (at the same density as Marstongate of 30 per hectare) and will include district centres, transport hubs, a countryside centre and a school.

The Concept Statement for Hanyards lists the following key green infrastructure assets in the area:

- *Biodiversity and Geodiversity*
  - Baswich Meadows SSSI
  - Kingston Pool Covert LNR
  - River Sow and the Staffordshire &Worcestershire Canal
- *Recreation & Access*
  - River Sow and canal towpaths
  - Public footpath linking Stafford and Cannock Chase
  - Tixall Country Park
- *Cultural Heritage*
  - Tixall Country Park (part of historic medieval planned enclosure network)
  - St Thomas' Priory Scheduled Ancient Monument
  - Hopton Heath historic battlefield
- *Landscape & Visual*
  - Lowland river valley and canal (Staffs & Worcs Canal and River Penk)
  - Sandstone estate lands (rural woodlands and parklands)
  - Arable land

The Stafford Borough Infrastructure Strategy recognises that there is a significant area of flood plain through the Hanyards area, as illustrated in figure 4.5, and states that green infrastructure in this area would have to ensure that downstream flooding is not exacerbated by development, forming an integral part of a flood mitigation strategy.

An important function of green infrastructure in this area will be to relieve pressure on nearby Cannock Chase. The public benefit assessment also shows that Hanyards development area lies within an area of high opportunity for public benefits via green infrastructure, particularly in relation to the recreational, access and biodiversity value of the River Sow and Baswich Meadows. However, the value and sensitivity of Baswich Meadows and St Thomas' Priory in particular would need to be protected from increased visitor and recreational use. The area lies within the highest value historic environment character area, and any development would need to be very sensitively planned and designed to minimise any potential damage.

Lower Walton (South Stafford)

Lower Walton is located to the south of Stafford, adjacent to the residential areas of Walton on the Hill to the west and Wildwood to the north with the Staffordshire & Worcestershire canal running through the western edge of the area and the A34 roughly bisecting the area. It is predominately agricultural, with gently sloping field systems and views across to Cannock Chase AONB.

Development proposals for Lower Walton consist of 2,500 houses (at a density of 30-40 dwellings per hectare) alongside the provision of district centres, transport hubs, a countryside centre and a school.

Lower Walton's Concept Statement lists the following green infrastructure assets:

- *Biodiversity and Geodiversity*
  - River Penk and Staffordshire & Worcestershire Canal corridor
  - Parkland with associated mature trees
  - The Larchery
- *Access and Recreation*
  - Staffordshire & Worcestershire Canal
  - Footpath and bridleway network to east of site linking to Cannock Chase
  - Nearby Cannock Chase Country Park and Forestry Commission woodland
- *Cultural Heritage*
  - Historic parkland and buildings at Acton Hill
  - Staffordshire &Worcestershire Canal
  - Adjacent Walton-on-the-Hill conservation area
- *Landscape and Visual*
  - Views over Cannock Chase
  - Prominent radial ridge lines and wooded stream corridor
  - Transition from river corridor landscape to geometric field pattern

This proposed development area is the closest to Cannock Chase and the Infrastructure Strategy notes that a high quality of green infrastructure is required to mitigate the impact of development on the AONB, and particularly to minimise visitor/recreational pressures and the visual impact of new development on views from Cannock Chase – which is a kilometre away from parts of the development area. Green infrastructure measures should also respond to proposals for the southern link road within this area should also be incorporated into the landscaping structure to reduce its visual impact and to prevent it from becoming a barrier between new residential areas and the surrounding open countryside.

The development area lies adjacent to a broad area of high public benefit need, predominantly relating to the relative deprivation of communities and higher risk of flooding – this in particular could be exacerbated through development in Lower Walton, with an inherent increase in sealed surfaces close to or within floodzone areas.

Lower Walton is also adjacent to Walton on the Hill Conservation area, and is of mid-high Historic Landscape Character value.

Burley Fields (West Stafford)

Burley Fields is located on the western edge of Stafford and is the more urban of the four development locations with the new development of Castletown to the east and Doxey to the north. The development is proposed to sit adjacent to the Castle to the south, with the M6 motorway as the area's western boundary. The area has few existing residential properties and a largely agricultural (arable) land use.

This is a relatively small site, but it will accommodate 2500 houses, at a density of 40 dwellings per hectare. Development will also include district centres, transport hubs, a countryside centre and a school.

The Concept Statement for Burley Fields lists the area's green infrastructure assets as:

- *Biodiversity and Geodiversity*
  - Grassland and wetland areas to north of the area
  - Treed hedgerows associated with old lanes
  - Small field corner spinneys
- *Recreation and Access*
  - Strong footpath and bridleway network linking to Stafford and surrounding countryside
  - National Cycle Route 55
  - Public football pitch
- *Cultural Heritage*
  - Archaeological sites including Roman villa to west, Burley Fields Model Farm and post medieval lodge
  - Stafford Castle directly to south
  - Dismantled railway line
- *Landscape and Visual*
  - Strong east to west ridge lines providing visual separation
  - View to Stafford Castle
  - Characteristic red brick farmstead (Hill Farm)

Both the Concept Statement and the Infrastructure Strategy indicate that the key green infrastructure interventions in Burley Fields relate to accessibility and green infrastructure network provision/enhancement – particularly using access under the motorway as a route to the open countryside to the west. Benefits would primarily be the provision of recreational assets to local communities, using existing assets as a baseline so that there would not be undue cost imposed on or acting as a constraint to development.

The close proximity of Doxey Marshes SSSI and Stafford Castle would benefit from proposals for extending the golf course as a buffer to any development in this area. In addition, the relatively

high levels of need in the existing community at Doxey (as demonstrated in the public benefit assessment) could be addressed via a series of green infrastructure interventions that could promote and enable access and recreation, as well as helping to combat the effects of pollution both from the motorway and as a result of the development itself.

Assessment of Sensitivity

All of the areas have some sensitivity to development that green infrastructure can help to address. However, it is important to compare the relative sensitivity of the development sites to help inform Stafford Borough Council's decision making on the preferred options (alongside the evidence from other studies including the Infrastructure Strategy).

The analysis considers each site against 4 criteria:

- *Landscape & Visual:* relative value of the landscape according to the Historic Environment Character Assessment and proximity to valuable landscape assets
- *Flooding*: the location of the development area in relation to flood zones and risk areas (i.e. downstream flooding implications)
- *Communities*: provision of green infrastructure assets for new and existing communities
- *Biodiversity*: presence of designated sites and relative level of designation (international, national, local)

For each criterion, each development sites is assessed according to their relative sensitivity to the 4 criteria when compared to the others, with a rank of 1 being the most sensitive and 4 the least.

Landscape & Visual

Development Area	Issues	Relative Sensitivity
Marstongate	Predominantly lower Historic Environmental Character Value Landscape restoration policy area	4
Hanyards	Highest Historic Environmental Character Value Landscape enhancement policy area* Landscape at risk of rapid loss of character and quality* Close proximity to Cannock Chase AONB	1
Lower Walton	Mid level Historic Environmental Character Value, with a small area of high HEC value Landscape enhancement policy area* Landscape at risk of rapid loss of character and quality* Closest proximity to Cannock Chase AONB Adjacent Walton-on-the-Hill conservation area	2
Burley Fields	Mid-high Historic Environmental Character Value Landscape restoration policy area* Adjacent to landscape at risk of rapid loss of character and quality* Close proximity to Stafford Castle and grounds	3

* Landscape policy areas and risk as described in the Staffordshire Planning for Landscape Change SPG[2]

Flooding

Development Area	Issues	Relative Sensitivity
Marstongate	Contains no flood zone areas Development would likely have significant implications for downstream flooding (towards Stafford town)	3
Hanyards	Predominantly Flood Zone 2 Includes Rivers Sow and Penk and the Staffordshire & Worcestershire Canal Includes river valley wet meadows including Baswich SSSI	1
Lower Walton	Forms part of the River Penk floodplain Part of the River Penk and Staffordshire & Worcestershire Canal corridors	2
Burley Fields	Small area within Flood Zone 2	4

Communities

Development Area	Issues	Relative Sensitivity*
Marstongate	Proposed Country Park Access routes via footpath/bridleway network	1
Hanyards	Potential negative impacts on the Baswich Meadows SSSI Way for the Millennium long distance footpath Staffordshire & Worcestershire Canal towpath National Cycle Route 5	4
Lower Walton	Proposed Country Park Potential to minimise recreational impacts on Cannock Chase AONB Proposals for marina development on Staffordshire & Worcestershire Canal spur	3
Burley Fields	Proposals for cycleway and access provisions between the town centre and open countryside to the west Under-motorway access to countryside via Way for the Millennium (National Cycle Route 55)	2

* Sensitivity is assessed on the opportunity to create or enhance green infrastructure community assets (access, recreational spaces, etc); areas with the least opportunity have the highest sensitivity

[2] Planning for Landscape Change: Supplementary Planning Guidance to the Staffordshire and Stoke on Trent Structure Plan, 1996 – 2011 (2000) Staffordshire County Council Development Services Department

Biodiversity

Development Area	Issues	Relative Sensitivity
Marstongate	Limited areas of ecological or biodiversity importance (4 SBIs) Includes Marston Brook	3
Hanyards	Proximity to Cannock Chase SAC Includes Baswich Meadows SSSI Abuts one and includes one SBI Rivers Penk and Sow corridors and associated waterways	1
Lower Walton	Closest proximity to Cannock Chase SAC Biodiversity Alert Site (adjacent to Wildwood) River Penk corridor and associated waterways	2
Burley Fields	Adjacent to 2 SBIs Proposed wetland Local Nature Reserve to the south of Doxey Proximity to Doxey Marshes SSSI	4

Conclusions

Combining the sensitivity 'scores' under the 4 criteria provides an indication of the relative sensitivity of each proposed development area, with the lowest score indicating the highest sensitivity (and so the highest score indicating the least sensitivity) of the area's green infrastructure to development.

	Landscape & Visual	Flooding	Communities	Biodiversity	*total*
Marstongate	4	3	1	3	*11*
Hanyards	1	1	4	1	*7*
Lower Walton	2	2	3	2	*9*
Burley Fields	3	4	2	4	*13*

The results of the analysis are presented spatially in figure 6.1.

The analysis indicates that Hanyards is the most sensitive of the proposed areas to development, considering its landscape, flooding, communities and biodiversity functions. Whilst the Infrastructure Strategy states that there are no green infrastructure issues that would prevent development, the areas highly sensitive landscape in a floodplain and biodiversity value are all at risk from development, and any development would need to be carefully designed and delivered to avoid adverse impacts on these assets – including direct damage or loss through building and indirect damage to sites through, for example, increased use or increased risk of flooding and pollution to watercourses due to rainwater run off from sealed surfaces.

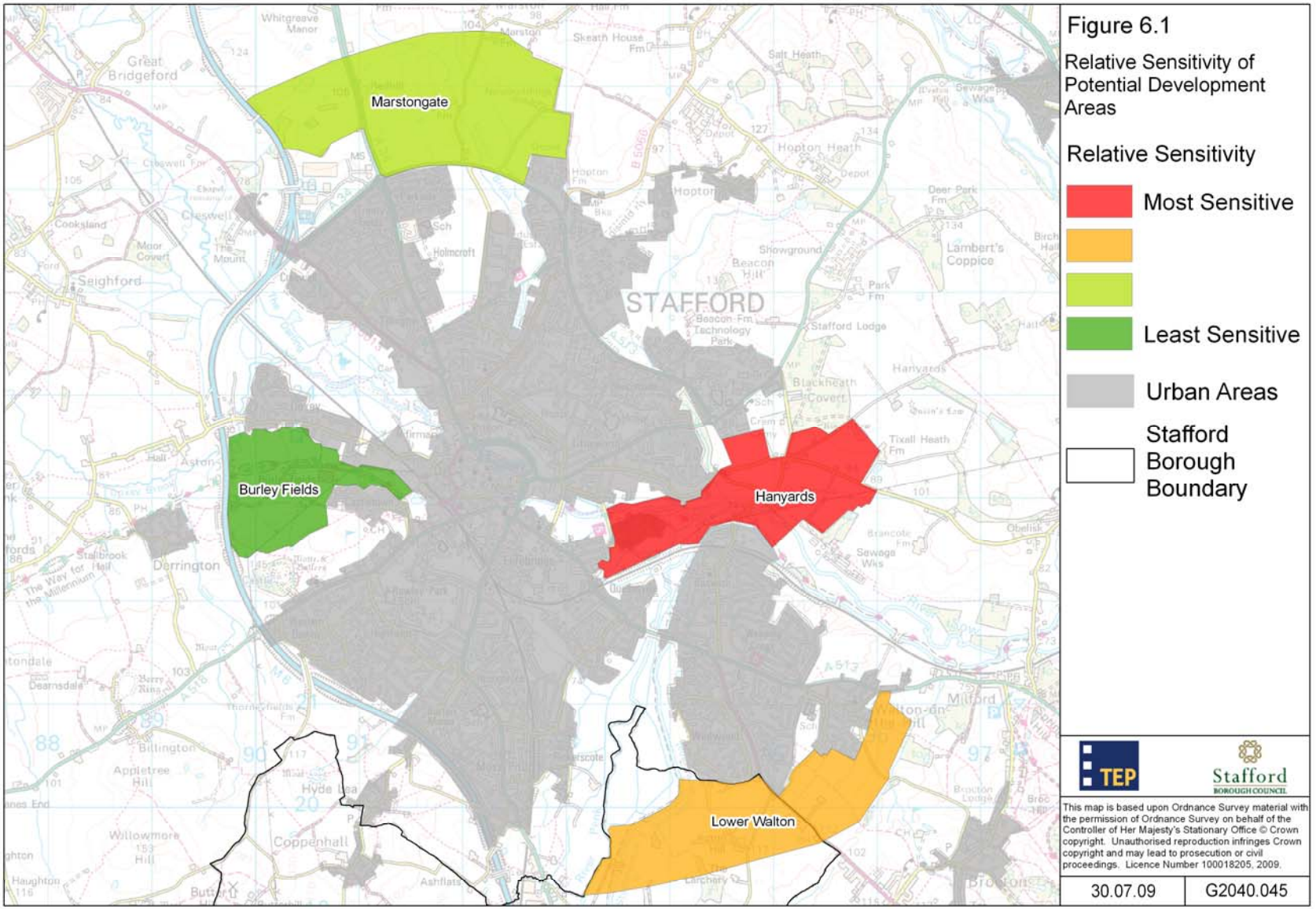
Figure 6.1
Relative Sensitivity of Potential Development Areas
Relative Sensitivity
Most Sensitive
Least Sensitive
Urban Areas
Stafford Borough Boundary
Marstongate
Burley Fields
Hanyards
Lower Walton
STAFFORD
TEP
Stafford
BOROUGH COUNCIL
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The Concept Statement for Hanyards does recognise the importance of the area's green infrastructure assets, and proposes their enhancement and creation of further associated assets (such as footpath links) to make the most of the area's high potential for provision of community assets (for recreation, tourism) and to consolidate the green infrastructure network within this area.

Lower Walton's green infrastructure is second to Hanyards, with relatively high landscape, flooding and biodiversity scores reflecting the area's proximity to Cannock Chase SAC and the valuable assets the area contains, as well as its floodplain function. In comparison, Marstongate has limited green infrastructure functions or assets that would be sensitive to development, with the potential of the area to provide community assets is largely limited to the proposed country park – an expensive intervention.

Burley Fields is considered to be the least sensitive of the proposed areas for development. Although like other areas it does have some flooding sensitivity this is relatively limited, and biodiversity in the area is not particularly sensitive. Its landscapes are also considered to be of a lower value or at lower risk than other development areas, although – as described in the area's Concept Statement – views to and from Stafford Castle should be protected in the face of future development. The area has a lot of community green infrastructure assets and these can easily be integrated into future development plans and built landscapes to make the most of their functionality and value. As stated in the Infrastructure Strategy, these interventions would not impose undue cost on development nor act as a constraint to development. As such, Burley Fields would be the least constrained and sensitive to development in green infrastructure terms.

Chapter 7: RESOURCES FOR DELIVERY

This chapter reviews a range of potential funding, partnership and other resources that may be needed to deliver green infrastructure interventions in Stafford Borough. It particularly considers:

- Planning conditions, obligations and tariffs
- Partnerships & co-provision
- Community and voluntary sector engagement
- Funding

We also look at how other Local Authorities have included green infrastructure in their local planning systems, particularly the inclusion of strategic recommendations within Local Development Framework documents, and consider how Stafford Borough Council should respond within its own LDF.

Planning conditions, obligations and tariffs

Green infrastructure can be delivered as a co-product of investment in new or refurbished infrastructure. Such developments create both opportunities in the form of new or improved assets and threats related to the loss, damage or other alteration of environmental features. This justifies seeking contributions from developers to assist in both the continuing management of existing green infrastructure assets and in the creation of new GI assets – particularly where deficiencies have been identified.

Planning obligations traditionally take the form of Section 106 (s106) agreements. These are private agreements negotiated between local planning authorities and persons with an interest in a piece of land (usually in the context of planning applications), and are intended to make acceptable development which would otherwise be unacceptable in planning terms.

The Community Infrastructure Levy (CIL) will be a new charge which local authorities in England and Wales will be empowered, but not required, to charge on most types of new development in their area. Based on simple formulae which relate to the size and character of the development paying it, the proceeds of the Levy would be spent on local and sub-regional infrastructure that is appropriate to support the development of the area – including transport, flood defences, play areas, parks and other green spaces – although it is unlikely that CIL will be able to be used to remedy existing deficiencies. Local Authorities may also have the freedom to work together to pool contributions from CIL within the context of delivering the RSS and local development plans.

Detailed proposals and draft regulations for the introduction of the CIL are currently at public consultation, which closed in October 2009. When the CIL does come into force, it will still be possible to use s106 agreements to ensure that the specific impacts of a development can be mitigated, allowing it to be granted permission where permission would otherwise be refused.

As a means of supporting green infrastructure s106 agreements and the emerging CIL can generate the finance and provide the land for not only the implementation of new green space assets, or improvements to existing greenspace assets, but also endowments for long term management. Subject to Stafford Borough Council's lead, a flexible approach to the application of such financial contributions to priority areas across the Borough rather than being restricted to the particular locality of the development would be beneficial.

Green infrastructure will of course be one of many competing interests so a realistic level of support for green infrastructure must be advocated during negotiations on tariff-setting.

Partnerships & co-provision

CABE Space has produced many documents[74] that demonstrate the value of parks, open spaces and the natural environment to residents and businesses, whilst central government now recognises that a quality environment accessible to all contributes strongly towards the establishment of sustainable communities and can contribute towards many local indicators relating to health improvement, biodiversity targets, community safety and wider environmental sustainability.

In respect of green infrastructure, much of the government funding that Local Authorities receive for implementation depends on setting and meeting performance targets largely through Local Area Agreements (LAA) and Local Public Service Agreements (LPSA). The majority of LAA and LPSA related funding is dedicated to health, education, social and business support services. There is scope, particularly in the more flexible LPSAs, to set green infrastructure in the context of these targets and thus draw down government funding for capital and (sometimes) revenue projects.

Staffordshire's LAA[75] includes an improvement target for 'a protected, enhanced and respected environment' which clearly the green infrastructure strategy can link into. However, green infrastructure can also contribute towards the other LAA targets for the Borough's economy, communities and health and well being. Demonstrating that green infrastructure investment delivers these wide-ranging public benefits will help to advocate for 'co-provision' of green infrastructure within funding programmes and increase opportunities for working in partnership with other stakeholders: influencing delivery and adding value by introducing match-funding, joining-up initiatives and stimulating community action.

Table 7.1 illustrates the documents and partnerships which should be influenced positively, summarising how each might be influenced, and what outcomes might be anticipated. As business and action plans tend to be reviewed on a rolling basis, it is important to ensure appropriate levels of representation on Partnership Boards, to maintain close working relationships with partners, and to provide them with information and evidence to bid for funding to implement green infrastructure.

Table 7.1: Translating Strategy to Implementation at the Local Governance and Partnership level

Green Infrastructure Strategy							Green Infrastructure Implementation
	»	– Shows how green infrastructure supports local social, economic and environmental objectives	»	**Sustainable Community Strategy**	»	• Incorporates GI into cross-cutting strategies • Sets GI priorities for Local Partnerships • Sets framework for LAA / LPSA targets to uplift GI	»	
	»	– Shows how GI can contribute to LAA Key Objectives – Shows how service delivery can be improved through partnership-working	»	**Local Area Agreement**	»	• Secures funding for improved service delivery (including GI projects)	»	
	»	– Defines local needs and identifies opportunities to improve quality of life through investment in GI	»	**Local Public Service Agreement (LAA Stretch)**	»	• Secures funding for GI projects	»	
	»	– Defines investment priorities for sustainable growth	»	**Local Authority Corporate Plan**	»	• Sets GI investment priorities • Commits to GI on corporate estate & in corporate activity • Advocates co-provision of GI with other infrastructure	»	
	»	– Shows how GI will contribute to neighbourhood objectives – Defines green networks for the neighbourhood	»	**Neighbourhood Partnership**	»	• Encourages co-provision of GI with neighbourhood improvement and regeneration projects • Builds community capacity to fund and undertake GI projects	»	
	»	– Defines GI deficiencies for area – Defines GI investment priorities – Provides evidence for environmental funding bids	»	**Environmental Partnership**	»	• Secures funding and implements GI projects • Advocates for consideration of GI during planning and infrastructure decision • Identifies opportunities for work with allied Partnerships	»	
	»	– Shows how GI can contribute to "non-environmental" objectives of a socio-economic nature	»	**Allied Thematic Partnership e.g. children, older people, safety, health, business**	»	• Encourages co-provision of GI with other programmes	»	

Community and voluntary sector engagement

The involvement of voluntary and community sector groups is essential for the delivery of green infrastructure, particularly at the local level.

Local communities are critical to the success of any plan or project, and their views should be sought at the earliest stages of development through to long term management and maintenance of sites. Green infrastructure functions such as community cohesion, providing connections with nature, recreational choices and options for improving health will be best delivered where community needs and aspirations are considered and integrated into site designs and development. This is particularly vital in the proposed new development areas, where Stafford Borough Council has the opportunity to engage with local people (from existing and new communities) so that they can help shape their environment – building a sense of ownership and engendering community cohesion.

CASE STUDY: Neighbourhood Signposting

Kirkholt is a large interwar social housing scheme in Rochdale. It is troubled by issues of poor health, low employment and limited mobility amongst its working age population. Despite being near attractive countryside and the town centre, many residents are reluctant to use the footpaths and cycleways in the area. Using neighbourhood renewal fund monies, the Pennine Edge Forest works directly with community groups to encourage greater countryside access, using guided walks and involving community associations. This has led to greater use of the nearby Rochdale Canal, a multi-million pound regeneration initiative.

CABE's guidelines for delivering successful housing growth[76] set out a series of steps for working effectively with communities. These could be applied within Stafford Borough, led by the Borough Council working with those organisations with particular expertise in facilitating community involvement (such as BTCV, Groundwork, etc) to ensure the key principles in this strategy are considered as a critical part of the planning consultation process.

Another implementation strategy is through stimulating positive action for the environment. This can be achieved at individual, corporate and societal level. At individual levels, bodies such as Staffordshire Wildlife Trust, Parish Councils, and Groundwork etc are most capable of engaging with local community groups and individuals. National and local publicity campaigns can also stimulate positive green infrastructure outcomes e.g. Jamie Oliver's healthy eating campaigns have greatly increased the uptake of local food growing and procurement in schools.

Many environmental trusts and Parish Councils have aspirations to own or lease land as green infrastructure and there would be benefit in facilitating such bodies to purchase land in priority areas. Such facilitation might be through direct financial contribution and/or through assistance with legal and publicity costs. Notwithstanding the above whenever Parish Councils are involved they would have to consider the possibility of increasing the Parish Precept to support their local green space assets.

Corporate behavioural change is also possible, particularly where the corporate body is owned or influenced by a major public sector stakeholder. This can sometimes be a matter for contractual negotiation. For example PFI contracts for waste management and educational provision can incorporate "carbon-neutral" clauses which require woodland planting.

Funding

As a designated New Growth Point, Stafford will benefit from increased funding from central government to put into place the infrastructural requirements associated with growth point housing development. Infrastructural funding is essential, particularly because of the "front-loaded" need for investment ahead of development – both for major capital projects and continued revenues support for the planning and organisation of green infrastructure delivery.

Stafford's Growth Point Programme of Development[77] has requested funding from the Government's Communities & Local Government department (CLG) for medium term (to 2011) green infrastructure/environmental enhancement projects. These include specific projects for the improvement of Victoria Park, Local Nature reserve creation and enhancement and the creation of the Country Park south of Stafford town alongside a broader allocation for green infrastructure strategic planning. Although these funds can provide an essential 'kick start' to activities, the range of recommendations and interventions are such that further funding measures will be required both for capital works and ongoing maintenance of sites.

Natural England has also recently announced £486,000 of funding for the Midlands Meres and Mosses Revival Project (from a £4million pot under the Wetland Vision programme[78]) which covers Aqualate Mere and Cop Mere. The project aims to restore and reconnect the Meres and Mosses landscape, with partners including Natural England, English Heritage, the Wildlife Trusts, the RSPB and Local Authorities carrying out restoration work to achieve immediate biodiversity gain for lowland raised bog, fen and wet grassland habitats.

Natural England's Green Infrastructure Guidance and CABE's 'Paying for Parks'[79] set out a range of additional sources and models for funding green infrastructure provision. Some of these reflect the approaches already discussed above, particularly the models relating to traditional local authority funding, multi-agency public sector approaches, planning and development opportunities and voluntary and community sector involvement as outlined in the CABE publication.

However, some of the funding sources presented by CABE and Natural England lie outside of these traditional areas, and Natural England's review of funding and governance models looks

beyond Local Authority funding, due to competing demands on budget allocations and the lack of a statutory duty for green infrastructure provision and management. It arranges funding sources under four headings which also cover the remaining elements of the CABE review:

- *Tax Initiatives*
  Although Local Authorities are often restricted in imposing additional taxes, funds can be raised by imposing additional levies via Business Improvement Districts (BIDs) where local businesses can vote for a levy on their rates bill to be used to fund improvements in the local environment that will address BID business needs (environmental improvement, crime and safety, attracting more visitors).

- *Planning & development opportunities*
  In addition to planning conditions and obligations, the Guidance suggests roof taxes (a standard tariff per dwelling on new developments) and private management charges (where a publicly accessible site remains in private ownership and management is funded via services charges paid by leaseholders) as a means of funding green infrastructure measures.

- *Multi agency public sector grant funding*
  With a similar rationale as outlined above for co-provision, these funds respond to the multifunctionality of green infrastructure and reflect the pivotal role of Local Authorities in forming public sector partnerships to deliver shared objectives. Funds include:
  - Safer & Stronger Communities Fund (SSCF) – CLG and Home Office, until 2010
  - Heritage Lottery Fund (HLF) and BIG Lottery fund – particularly Parks for People and Access to Nature
  - Environmental Stewardship – Natural England
  - English Woodland Grants Scheme – Forestry Commission
  - Aggregates Levy Sustainability Fund – Natural England

  CASE STUDY: Forward with Leicestershire Aggregate Grants (FLAG)

  FLAG is designed to offer communities and private landowners the opportunity to plan and implement a range of projects that will compensate local communities for the environmental impacts of mineral extraction. It is administered by the Rural Community Council (Leicestershire and Rutland) and operates in the parishes of Cadeby, Groby, Markfield and Stanton under Bardon.

- *Bonds & commercial finance*
  Options exist under the UK local government financing system that allow Authorities to raise finance from any source, including mechanisms such as bonds or endowments (interest on assets such as property or shares), on-site income generation (car parking, concessions, rental income), carbon offset activities.

Taking Forward Green Infrastructure Policy

Robust planning policy will enable refusal of development which does not deliver high standards of green infrastructure both on and off-site. This will require commitments in Core Strategy and other LDF and associated policies, while supplementary guidance can provide Stafford Borough Council with the flexibility needed to guide and control delivery across a broad range of development locations, footprints and types.

PPS12 (published 2008) sets out government policy on Local Development Frameworks (LDFs). Guidance notes state that LDFs must create a strong relationship between service delivery and planning for the built and natural environment in order to create strong and prosperous communities. Table 7.2 shows the different documents and processes associated with development planning, indicating how green infrastructure might be promoted as a policy objective, and delivered through planning decisions.

CASE STUDY: Hinckley & Bosworth Core Strategy

A green infrastructure strategy for Hinckley & Bosworth was undertaken in 2008. This looked at existing green infrastructure resources and assets and key issues which could affect the provision, protection or delivery of green infrastructure in the Borough, and included a Borough wide strategic green infrastructure plan to provide the overall spatial framework for green infrastructure. This green infrastructure plan is illustrated on the Borough's Core Strategy Key Diagram, and the implementation of the Green Infrastructure Network as a key priority of the council is emphasised with the inclusion of a specific policy and associated strategic interventions for green infrastructure in the Borough.

Stafford Borough's Issues & Options paper sets out a vision for the Borough that has the natural environment at its heart:

> *"The Borough will have a rich natural environment which is resilient to the effects of climate change, is well maintained and enhanced with more people enjoying the area through a greater sense of health and well being. A high quality strategic network of accessible green space will have been developed in and around Stafford, Stone and other areas as well as an enhanced and managed built and natural resources providing a clean, safe and fun place to live."*

This is supported by a range of key objectives, including specific measures for green infrastructure in Stafford town and Stone alongside measures for environmental enhancement across the Borough.

Following the recent period of consultation, the Issues & Options paper will guide preparation of the Borough's Local Development Framework through a Preferred Options Report which will set out the broad direction for future development and the implementation of planning policies across the Borough. It is essential that the resulting Core Strategy for the Borough follows the example set in the Issues & Options paper by setting policies to ensure that green infrastructure is considered as a fundamental part of the planning process.

A review of other Core Strategies (at various stages of development – see Appendix 2) indicates that specific green infrastructure policies tend to include strong reference to other policies relating to the constituent parts of green infrastructure, such as landscape, biodiversity, green belt, geodiversity, access and so on. With an overarching statement setting the policy objective, they hen tend to include key principles or thematic priorities as bullet point with some degree of spatial reference from general to site or area specific levels. Policies are often accompanied by a spatial plan or diagram of key green infrastructure assets and/or opportunities, and refer to other supporting documents such as green infrastructure strategies and other LDF documents.

Considering these commonalities and the approach already seen in Stafford Borough's Issues & Options paper, the following may be a suitable Core Strategy Green Infrastructure Strategy for the Borough. It is adapted from the vision, objectives and priority interventions set out in the Green Infrastructure Strategy, and should be accompanied by the Green infrastructure Framework map presented in the Strategy:

The Borough's green infrastructure network will be protected, enhanced and expanded to enhance quality of life, increase sustainability, reduce the impacts of climate change and improve health and well being across these overarching objectives:

- Networks of open spaces, natural corridors, access routes and watercourses will be enhanced and created to:
  - protect the setting of landscape, heritage and natural (biodiversity and geodiversity) assets
  - reverse habitat fragmentation
  - provide recreational opportunities for new and existing communities
  - provide open breaks between neighbouring residential areas and business developments.
- The network of existing access routes will be improved and expanded to allow sustainable commuting, including:
  - shared surfaces to reduce vehicle speeds
  - providing safe, attractive and well-signed walking and cycling routes between residential areas, employment centres, green spaces and the wider countryside.
- Local landscape and heritage features should:
  - be retained as focal points for new neighbourhoods,
  - have their historic nature protected
  - act as attractive green and open spaces where communities can come together.

- To alleviate the effects of climate change:
  - measures such as Sustainable Drainage Systems and street trees must be included in new developments and should be 'retro-fitted' into existing developments
  - green spaces will provide a flood storage/management function (where appropriate).
- All new developments will:
  - be set within a well designed, attractive, green setting
  - provide a variety of spaces to mete the needs of people and nature
  - provide safe opportunities for sustainable transport
  - achieve at least the green infrastructure standards laid out in the SPD

Key strategic interventions include:

- Biodiversity intervention zones
- Watercourse corridors
- Movement corridors
- Strategic open spaces
- Landscape quality

Key delivery projects are:

- Penk & Sow Natural Parklands
- Stafford Common Community Park
- Stone Canal & Riverside Park

These are illustrated on the Green Infrastructure Framework Strategic Map.

This sets out the key principles, areas and projects for green infrastructure in the Borough arising from the Green Infrastructure Strategy in a clear and concise way. It reflects the multifunctional nature of green infrastructure and the benefits it can deliver and so, despite specifying the key interventions and projects, is not confined to a set of actions that may restrict activity in the future.

The suggested approach also sets a good foundation for the Green Infrastructure Supplementary Planning Document (SPD). These have been used in other areas to give guidance to developers and planners as to how the impact of development on green infrastructure can be assessed and addressed. This green infrastructure study includes the development of an SPD that provides guidance on how green infrastructure standards will be applied to development proposals, and so – alongside the Core Strategy policy - sets green infrastructure firmly within the Borough's planning system and development control.

However, it will be important that this Green Infrastructure Strategy does not stand alone and remain just the responsibility of Stafford Borough Council as the Local Planning Authority to implement. It needs to be integrated with other Borough wide strategies and research findings and progressed in tandem. For example the first housing development to receive planning approval should be a 'best practice' example of how the implementation of enhancing or creating new green space assets can be achieved, whether or not it is located in a high priority area. That would set the standard and demonstrate that the Borough Council is determined to encourage and if necessary push forward the creation of an improved green infrastructure for the Borough.

Table 7.2: Embedding Green Infrastructure into Local Development Frameworks and Planning Decisions

Core Strategy	– Defines and promotes GI concept for the area, referring to sub-regional strategy and national/regional planning context – Illustrates broad areas of GI priority in the area – Commits to considering GI during planning decisions, describing how this will be done, and evidence base to be used – Includes a reference to GI functions and assets in the area in over-arching "sustainable development" policy
Development Plan Documents	– Allocates and maps sites, initiative areas, corridors which collectively make up the Green Network (at an appropriate level of detail) – Identifies and maps areas of GI deficiency; probably on a functional basis e.g. ANGSt deficiency, rivers of low quality, impermeable catchments, areas of fragmented biodiversity. – Identifies relevant strategies and plans which will inform planning decisions e.g. the sub-regional green infrastructure strategy, local greenspace strategy, biodiversity plans, landscape character assessment – Includes development-related policy for all GI functions relevant to the area. This could be achieved through policies on biodiversity, landscape, open space, heritage etc (rather than as bespoke GI policy) – Refers to SPD for detailed guidance on how developers and planners can assess GI and design for its enhancement
Supplementary Planning Documents	– Provide guidance on which design and sustainability codes are to be used for different types and locations of development – Provide guidance on how to assess the impact of development on GI, and how to (re)build GI in conjunction with development proposals – Provide guidance to developers on how to present the GI assessment in supporting statements. – Describe how planning conditions can be used for GI, and details how financial contributions (by obligation or tariff) for green infrastructure provision and management will be calculated
Supporting Statements	– Produced by developers to demonstrate how they have considered green infrastructure, their impact on it, and their proposals to (re)build it in the area affected by their proposal. This could be presented through the medium of established design and access statements, supporting planning or sustainability statements, or a bespoke "Environmental Standards Statement"
Design & Sustainability Codes	– Produced at national/regional level by external specialist bodies, or may be locally written and adopted – Set standards and guidelines for layout, design quality, biodiversity impact offsetting, sustainable drainage etc – Planning conditions can require compliance with all or part of codes and ensure design meets guideline standards
Environmental Impact Assessment	– EIA considers development impacts on a set of topics required by statute (human beings, flora and fauna, air, water, soil, landscape, material assets and the cultural heritage; and interactions between these). The EIA process seeks to optimise design and minimise effects. By thorough scoping and holistic EIA, better outcomes for green infrastructure associated with the locale in which the development occurs can be achieved. Guidance to developers and planners on how to achieve favourable GI outcomes through the EIA process is needed.
Habitats Regulation Assessment	– Habitats Regulations require planners to consider development effects on the Natura 2000 network of European nature conservation sites and the species therein. Guidance to developers and planners on how and when contributions to creating and maintaining the Green Network (which includes Natura 2000 sites) can offset negative effects is needed.

Chapter 8: GREEN INFRASTRUCTURE STANDARDS

It is important that Stafford Borough's Green Infrastructure Strategy considers what the appropriate standards for green infrastructure provision in the Borough should be, reflecting on the urban/rural nature of the Borough, and the multifunctional and holistic nature of green infrastructure. Such standards will need to outline what is required for planning a high quality sustainable environment associated with new development, informing development managers and planners as to what is required to deliver high quality green infrastructure provisions that suit the needs of the Borough.

The agreed Green Infrastructure Standards will be incorporated into the Green Infrastructure SPD, advising applicants on the strategic integration of countryside recreation, landscape character and biodiversity.

Existing Green Space Standards

Whilst there are no set national standards for the provision of green infrastructure, standards do exist for the many elements that combine to create a green infrastructure network, considering the accessibility, quantity and quality of green, open and natural spaces. Stafford Borough's GI standards should draw on existing standards and complement site or typology specific recommendations from existing strategies, including:

National Standards:

- Accessible Natural Greenspace Standards (ANGSt)
- Natural England's Green Infrastructure Guidance
- Design Codes
- Green Flag Criteria

Local Standards:

- Stafford Borough's PPG17 Assessment
- East Staffordshire's Green Infrastructure Study

Detailed explanations of some of the standards are included in Appendix 2, with the key points from all and their relevance to Stafford Borough's GI Strategy and SPD outlined below.

National Standards:

- *Accessible Natural Greenspace Standards (ANGSt) & "ANGSt Plus"*

The ANGSt model was originally developed by English Nature to measure the spatial distribution of natural greenspace and its accessibility, as well as the hectarage of Local Nature Reserves per head of population, thus providing a clear guide for the provision of green space within regional and local authority development plans.

The ANGSt criteria are that:

- No person should live more than 300 m[80] from their nearest area of natural green space of at least 2 ha in size
- There should be provision of at least 1 ha of Local Nature Reserve per 1,000 population
- There should be at least one accessible 20 ha site within 2 km from home
- There should be one accessible 100 ha site within 5 km
- There should be one accessible 500 ha site within 10 km.

Similar quantitative standards include the National Playing Fields Association (NFPA) recommendation that 6 acres (2.4ha) of recreational space is available for every 1,000 people, and the Woodland Trust proposal that everyone should be within 500m of a 2ha woodland site and no less than 4km from a 20ha site.

As a simple provision standard, ANGSt is quite useful: it clearly demonstrates where communities have limited or no access to a range of natural spaces, in line with its aim of securing access to natural greenspace close to where people live. However, there are drawbacks/deficiencies in applying the standard to Stafford Borough: it is very settlement focused, and so has little relevance to the largely rural nature of the Borough. It does not consider the quality of the greenspace in its current form, nor does it consider green infrastructure assets other than natural green spaces (although it could be used as a proxy for other greenspace provision).

These factors have led to lack of uptake of ANGSt within Local Authority PPG17 assessments and other spatial plans[81]. As a result, an updated version of ANGSt (ANGSt+) is being developed by Natural England. Currently in the testing phase, ANGSt+ aims to address some of the limitations of ANGSt by providing a framework for:

1. Assessing supply: identifying opportunities to improve supply by considering natural/non natural and accessible/inaccessible greenspaces
2. Assessing use: connection between greenspaces and communities
3. Applying the ANGSt standards: mapping site provision against population/homes
4. Assessing a range of delivery models, tools and partners.

This does address some of the deficiencies of ANGSt (in relation to Stafford Borough's green infrastructure approach), such as the importance of mapping non-natural spaces, although an appraisal of ANGSt+[82] has highlighted areas of further work that are pertinent to Stafford Borough, including the potential for additional guidance on assessing quality, accessibility and community 'connectivity', and for demonstrating the social, economic and environmental benefits of natural greenspaces.

- *Natural England's Green Infrastructure Guidance*

In addition to the "green test" (see Chapter 2), Natural England's guidance[83] for Local Authorities on producing green infrastructure strategies recognises that specific green infrastructure

requirements will vary considerably, although it goes on to provide generic 'good practice pointers' that can be used as a checklist to evaluate planning applications in relation to GI provision. The checklist covers several criteria, under a variety of themes:

i) Landscape character, setting and management
European Landscape Convention (ELC) 'whole landscape' approach, key characteristics identified in landscape character assessments and strategies; landscape management plans and techniques; conservation of existing structural landscape, geological or topographical features, key views or visual relationships; interface between the development and the landscape; the setting and restoration of historic landscape elements, delivering opportunities for interpretation

ii) Biodiversity and access to nature
Conservation and enhancement of designated nature conservation sites; accounting for non-designated sites, habitats and species; creation of new wildlife corridors and habitats; achievement of ANGSt standards; use of native plant material, planting of local provenance or locally sourced seed populations; providing an educational resource; production of a nature conservation management plan

iii) Water management
Water balancing measures (stormwater ponds or lagoons) to recharge groundwater; incorporation of SuDS; provision for green roofs

iv) Climate change adaptation
Tree planting to fulfil shading and cooling functions; microclimate creation; creation of habitat corridors and linkages to allow movement of wildlife; use of street trees; use of SuDS

v) Healthy, cohesive communities
Meeting ANGSt standards; provision for local food production (allotments, community orchards, gardens); provision for active and passive recreation; enhancing social interaction

vi) Green travel
Connection to or incorporation of existing or planned low carbon transport or recreation network

vii) Green specifications
Use of locally sourced or grown plant material, site won material, reclaimed materials

viii) Standards and facilities
Adoption of standards for the quality and accessibility of facilities and visitor services

ix) Ensuring green infrastructure delivery
Planning conditions to secure green infrastructure actions and funding; proposals for adoption, long term management and governance

The broad scope of the Guidance does reflect the broad nature of green infrastructure very well and as such could be a useful baseline for or provide a useful structure from which standards for Stafford Borough's green infrastructure could be developed. However, it is focused towards individual development schemes, and so may be more appropriate to the guidance for developers

as part of the green infrastructure SPD than wholly applicable to the Borough as part of the Strategy. Further, it does not actually include specific standards or targets that progress can be measured against or that developers can specifically deliver, and would need to be combined with other approaches in order to practically guide delivery.

- *Design Codes*

CABE (the Commission for Architecture & the Built Environment) is the Government's advisor on architecture, urban design and public space. It includes CABE Space: a specialist unit that aims to bring excellence to the design and management of parks and public space in urban areas. Guidance on standards has been produced by CABE and CABE Space in several publications:

Open Space Strategies: Best Practice Guidance[84]

This guide for Local Authorities and their stakeholders on the development of open space strategies states that the best way to set out standards is to consider:

- Quantity standards: area of open space per thousand population
- Quality standards: a description of the required design and management standards, including inclusive design standards. Green Flag criteria are highlighted as a good basis for a quality standard for green spaces that can be adapted to suit other open spaces
- Accessibility standards: a distance threshold (for example, ANGSt) that also takes into account any physical barriers to movement and the location of entrances to open space.

Start with the Park[85]

A good practice guide for people involved in developing and managing sustainable green spaces in housing growth and housing market renewal areas, Start with the Park again suggests that the criteria set out by Green Flag could be used as a local benchmark against which the quality of management and maintenance of a range of sites can be measured. However, it also recommends that for green spaces in or around housing, Building for Life qualitative standards could apply.

Building for Life[86]

As the national standard for well-designed homes and neighbourhoods, Building for Life recognises the role good quality housing design can have in improving social well being and quality of life. It sets out 20 criteria to evaluate the quality of new housing developments across 4 thematic areas:

- Environment and community
- Character
- Streets, parking and pedestrianisation
- Design and construction

Building for Life was introduced as Communities and Local Government's (CLG's) indicator of housing quality (Indicator H6) in July 2008, and Local Authorities are required to use the standard as part of their annual monitoring report where assessments are scored as follows:

- Very good: 16/20 or higher
- Good: 14 or 15/20
- Average: 10-13/20
- Poor: 9/20 or lower

Developments can be informally (by the developer) or formally (usually by the Local Authority) assessed, although it is only those developments that pass the formal assessment that are endorsed under the Building for Life Criteria. Support is available to developers undertaking an informal assessment in the form of 3 key publications[87] that explain the criteria and their relevance to planning policy, give examples of how the criteria work and supporting evidence, and provide a template for scoring against the criteria.

Although primarily focused on the built elements of new developments, there is relevance to green infrastructure across at least 8 of the 20 criteria. These include the provision of community facilities (including parks), the inclusion of features that reduce its environmental impact, 'fit' with landscape and local character, integration of safe non-vehicle transport routes and open spaces and the design and management of public spaces – all fundamental features that a planned approach to green infrastructure should encourage and enable.

Building for Life's use as a CLG monitoring indicator also adds significant value and relevance to its use as a standard for GI planning.

BREEAM Communities[88]
BREEAM Communities helps planners and developers to improve, measure and independently certify the sustainability of development proposals at the planning stage. It consists of environmental, social and economic sustainability objectives that are linked to core planning policy requirements used to guide and support the delivery of national, regional and local policy targets, including:

- climate and energy – built form mitigation and adaptation issues
- place shaping – local area design and layout
- community – consultation and local community involvement
- ecology – protection of the ecological value of the site
- transport – sustainable transport options
- resources – sustainable use of resources
- business – local and regional economic issues
- buildings – overall sustainability performance of buildings

As BREEAM Communities is a discrete scheme that also includes factors outside of the green infrastructure field, it is not suitable in itself as a green infrastructure standards framework for adoption in Stafford Borough. However, elements of it are very relevant, and should be reflected within the Borough's standards framework.

- *Green Flag Criteria*

Launched in 1996, Green Flag is now recognised as the national standard for parks and green spaces and is widely accepted measure of quality. It encourages the provision of good quality parks and green spaces that are managed in environmentally sustainable ways by awarding those that can meet established standards across 8 judging criteria:

1. A Welcoming Place: equal access, adequate and appropriate signage
2. Healthy, Safe, and Secure: equipment and facilities, dog fouling
3. Clean and Well Maintained: litter, grounds and buildings maintenance
4. Sustainability: pesticide use, recycling of waste, high horticultural and arboricultural standards
5. Conservation and Heritage: natural, landscape and structural features, buildings
6. Community Involvement: levels and patterns of use, community involvement, appropriate facilities
7. Marketing: marketing strategy, provision of information to users, promotion
8. Management: management plan or strategy in place, actively implemented and regularly reviewed

Victoria Park is Stafford Borough's only Green Flag site.

Whilst these are recognised and established criteria that Local Authorities recognise and respond to, the Green Flag criteria are very site specific, may not be appropriate to all green infrastructure typologies (particularly rivers, canals, access routes, public realm), and can be costly to achieve and maintain (submission costs alone range from just over £200 to £345 per year per site depending on its size). However their thoroughness and broad understanding of criteria means that they do provide a good baseline from which Stafford Borough's GI standards can be developed.

Local Standards:

- *Stafford Borough's PPG17 Assessment*

PPG17 Guidance[89] sets the framework for understanding and setting open space standards. It states that Local Authorities should use the research from PPG17 assessments to set locally derived standards for the provision of open spaces in their area, accounting for local circumstances and characteristics. These standards should form the basis for redressing quantitative and qualitative deficiencies, and should include:

i. quantitative elements (how much new provision may be needed)

ii. a qualitative component (the need for enhancement of existing facilities, including consideration of multi-functionality)

iii. accessibility (including distance thresholds)

Delivering these standards is the combined responsibility of the planning system, design and maintenance: accessibility and quantity are delivered and protected primarily by the planning system (in relation to the location and use of land), whereas quality and multifunctionality are delivered initially through good design – with all elements are sustained by good management and maintenance.

The PPG17 Assessment sets out quantitative, qualitative and accessibility standards for several different typologies, although given the nature of green infrastructure we have particularly considered recommendations in relation to "the green network" - multifunctional green spaces that include:

- Amenity greenspaces
- Green corridors
- Parks and gardens
- Churchyards and cemeteries
- Natural greenspaces
- Open access playing fields

Appendix C of the PPG17 Assessment report summarises accessibility, quantity and quality provision standards for various types of green and open space[90] that Stafford Borough Council will use as a guide for developers on the quality of provision the Council will expect them either to provide or fund. Whilst very comprehensive, the standards are generally very specific to individual green space typologies, and tend to focus on the site specific circumstances of a proposed development rather than the more strategic nature of green infrastructure. However, these standards could be combined with, for example, green flag standards to create a tailored set of site specific quality standards that could guide individual site developments, and be considered as a baseline for broader qualitative standards (possibly in combination with ANGSt).

- *East Staffordshire Green Infrastructure Study*[91]

Alongside its strategic plan for green infrastructure, East Staffordshire's GI Study identifies a set of ten standards for green infrastructure that would guide developers in the protection, improvement and delivery of green infrastructure as an integral part of the planning and construction process. Of the ten standards, three are termed 'general' standards which would apply to green infrastructure as a whole, with the remaining seven standards relating to the strategic themes for green infrastructure identified in the study. The seven thematic standards are applied specifically to development, and requirements on developers to introduce, enhance and maintain green infrastructure assets.

The separation of the ten standards between general and thematic recommendations is useful, as it allows core green infrastructure principles (i.e. the general standards) to be applied across the entire Borough, whilst the thematic standards are specific to particular areas or circumstances where that theme occurs. A similar approach may be beneficial in Stafford Borough, accounting for the very different characteristics and needs of the urban and rural areas. However, whilst the standards are valuable in guiding planning and design of both developments and green infrastructure generally, they are in essence aims that are largely not measurable and cannot easily be monitored against.

Green Infrastructure Standards & Performance Indicators

It is important that the green infrastructure standards for Stafford Borough ensure high quality green infrastructure provision across the Borough both as a result of new development and growth, and to protect, enhance and expand existing green infrastructure assets.

Whilst it is intended that the standards form part of the Borough's Green Infrastructure SPD, it would also be beneficial if the standards also help the Council achieve its own broader objectives and have relevance to Local Authority performance indicators. Linking the delivery of green infrastructure and its associated social, economic and environmental benefits to the achievement of national indicators was also recommended in the ANGSt+ assessment, which states that:

> *"A robust case should be made linking the benefits of accessible natural green space (e.g. improved community health) to the attainment of national indicator targets".*

There are two sets of statutory performance indicators of interest: the National Indicator Set and the Core Output Indicators for RSS and LDF.

National Indicator Set[92]

Since April 2008, the National Indicator Set (NIS) has been the only set of indicators on which central government performance manages local government, i.e. those services delivered by Local Authorities both alone and in partnership with other organisations such as health services and the police. Of the 188 indicators within the NIS, several have direct or indirect links to green infrastructure provision:

NI175: Access to services and facilities by public transport, walking and cycling
Includes access to healthcare, education and employment sites. *Performance indicator:* Local Transport Plan indicator LTP1
NI188: Planning to adapt to climate change
4 levels of performance: Level 1: public commitment and prioritised risk based assessment Level 2: comprehensive risk based assessment and prioritised action in some areas Level 3: comprehensive action plan and prioritised action in all priority areas Level 4: implementation, monitoring and continuous review *Performance indicator:* *Year on year improvement*
NI197: Improved local biodiversity - percentage of local sites where positive conservation management has taken place
Requires documented evidence e.g. management plans, relevant Biodiversity or Geodiversity Action Plan, participation in a management scheme (e.g. Environmental Stewardship) *Performance indicator:* *Year on year improvement*

NI199: Children & young people's satisfaction with parks and play areas	
Percentage of respondents (to survey) that report parks and play areas are very or fairly good	
Performance indicator:	*Statistically significant increase in the percentage of respondents reporting fairly or very good*

Of these, only NI 175 and NI197 are included in the March 2009 refresh of Staffordshire's Local Area Agreement[93], although other indicators such as reduction in per capita CO_2 emissions are included where green infrastructure provision would have some influence. However, as this influence cannot be directly attributed to green infrastructure interventions, it would not be suitable for use in setting standards or monitoring.

Core Output Indicators for RSS and LDF[94]

Regional Planning Bodies and Local Planning Authorities are statutorily required to report on a number of core output indicators in their Annual Monitoring Reports (AMRs) to CLG. Unlike the NIS, the AMRs are not used by government to performance manage local areas. However, AMRs are a statutory requirement, with the core output indicators providing a set of consistent and comparable definitions to help planning bodies monitor their own progress and review their own spatial strategies.

Core output indicators with relevance to green infrastructure provision include:

- *H6: Housing Quality – Building for Life Assessments*: showing the level of quality in new housing development against the Building for Life criteria.
- *E2: Change in areas of biodiversity importance:* showing losses of or additions to biodiversity habitat (areas of biodiversity importance recognised for their intrinsic environmental value including sites of international, national, regional, sub-regional or local significance).

Some indicators have been removed from the list of core indicators, but CLG recommends that these are still reported on within AMRs where they are necessary to monitor the implementation of spatial strategies or to reflect requirements of other government guidance. In Stafford Borough's case, the statutory requirements for a green infrastructure strategy in relation to its Growth Point status would suggest that the following withdrawn indicators remain relevant:

- 4c Amount of eligible open spaces managed to green flag award standard: Authorities with green flag policies or signed up to the scheme should continue to monitor against the standard.
- 8 (i) change in priority habitats and species by type: Authorities should continue to monitor the impact of new development on sites of biological importance, noting its close relevance to NI 197.

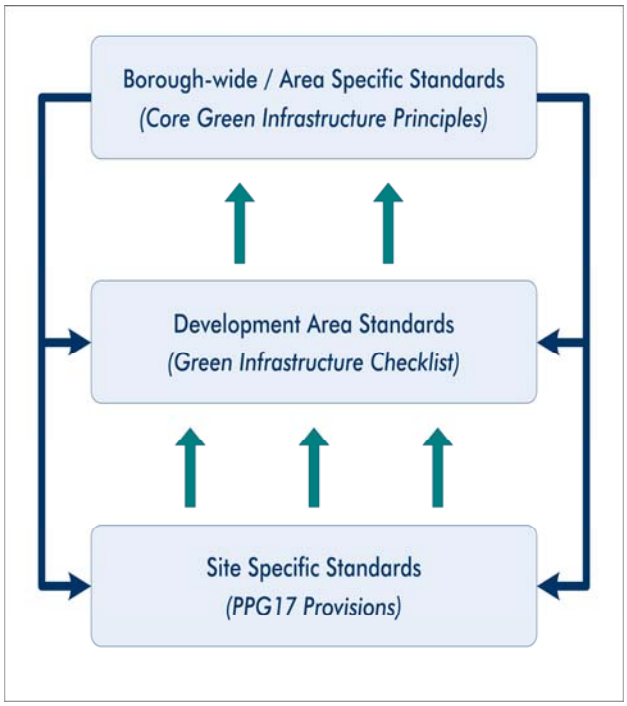
Green Infrastructure Standards for Stafford Borough

The range of national standards provide a useful guideline, but are based purely on the supply of sites and do not take account of local circumstances such as demand, population characteristics (e.g. age structure), the quality and suitability of provision, or the level of accessibility. In some cases, such as ANGSt, it is also impractical to apply standards which apply standards that relate to large areas of land at the Local Authority level, since often the land resource to meet these requirements simple doesn't exist at this geographic scale.

However, it is important to think about the provision and quality of green infrastructure both at the landscape and local scale so that broad green infrastructure functions can be delivered while local needs can also be addressed.

Green infrastructure planning in Stafford Borough can be considered on four levels:

- *Borough wide* measures for the protection, creation and enhancement of the green infrastructure resource and assets
- *Area specific* plans that will respond to existing green infrastructure and enable the creation of new assets specific to specific characteristics, needs and opportunities
- *Development areas* which require particular attention due to their potential both to deliver new assets and interventions and to negatively affect existing green infrastructure assets
- *Site specific* measures that relate to a site's functionality (e.g. biodiversity site) or its typology (e.g. public park)



Given the breadth of the available standards and the scope of the strategy, it would seem appropriate that a series of tailored standards are laid out that will respond to and apply at these different spatial scales. It is envisaged that each scale of standard would contribute to the others:

Borough-wide / Area Specific Standards

We recommend an approach similar to that applied in East Staffordshire that looks to apply a set of core green infrastructure principles to the Borough and to broad spatial areas within it that will incorporate the quality, quantity and accessibility of Stafford's green infrastructure network. These would act as the Borough-wide standards, and are drawn from the priorities set out in the Strategic Plan.

These Borough wide standards would specifically act as a guide to Planning Officers, against which they will evaluate and monitor development proposals. These generic standards will also contribute to statutory reporting requirements under the NIS and AMR, specifically:

- Increases in the provision of walking and cycling routes to services (NI175)
- Area of land under management schemes – particularly through working with landowners and partners to align funding mechanisms and enable and encourage sympathetic land management practices (NI197)
- Habitat expansion (AMR E2)

Development Area Standards

Acting as a guide to developers, the Development Area Standards will ensure that all developers make a commitment to:

a) Not damage or reduce the area or functionality of the Borough's existing green infrastructure, and

b) Make a contribution towards improving or extending the existing green infrastructure, or to create new green infrastructure asset/s, according to standards laid out in the Borough's PPG17 assessment for natural and amenity greenspaces

In addition, and responding to the particular requirements for growth in the Borough, we have also developed a 'standards checklist' for developers and planners that allows them to assess the (positive and negative) green infrastructure impacts of their development, combining elements of the following established standards for new development:

- Natural England's Green Test for New Development
- Natural England's Green Infrastructure Guidance
- Building for Life
- BREEAM Communities

These are particularly relevant as they are targeted towards new development, and can help both developers and planners to identify how schemes can meet Natural England's approval (a statutory consultee for the LDF) whilst contributing to the Council's statutory obligations (NI175 and potentially 197, as well as AMR H6 and 8(i)). Recommendations set out in the GI Concept Statements for the four directions of growth have also been considered, and those outlined in the Stafford Borough Infrastructure Strategy in relation to specific areas identified as potential development sites.

Criteria have been derived from these models, reflected back on the key objectives (priorities) for green infrastructure in Stafford Borough that are set out in the Green Infrastructure Strategic Plan. Criteria in these models were reviewed to assess whether there was duplication (within or across the models), to identify those criteria that were overly technical in language or insufficient in detail, and those which were felt to have limited relevance to Stafford Borough's green infrastructure priorities. In this way, the final set of standards criteria has relevance to both the green infrastructure priorities for Stafford Borough and to established national models and local research.

They are considered to be deliverable and so not act as a barrier to development, yet of sufficient significance to make a demonstrable contribution towards achieving the Borough's green infrastructure Vision.

The checklist is not scored, so there is no 'pass mark' for developers to aim for. However, the inclusion of the checklist in the SPD will mean that each element included within it will have to be considered by the developer and through the planning (development control) process for all sites, and the chosen approach justified in relation to the actual site and its contribution to achievement of the overall Borough-wide standards. All developments must consider all criteria, whilst certain types of developments and developments in some areas must meet or deliver against specific criteria within the checklist - defined by the priorities described in the Green Infrastructure Strategic Plan.

The checklist – including links to monitoring requirements and existing standards as well as policy references - is included as table 8.1.

Site Specific Standards

The provision standards laid out in Stafford Borough's PPG17 Assessment should be applied to the individual green and open spaces within the Borough. These consider accessibility, quantity and quality for different typologies of green space, and as such are useful as a guide for developers, land owners and land managers (including the Council) in providing and maintaining a high quality of those individual green and open spaces within their remit.

Together, the green infrastructure principles (generic standards), development checklist (development site standards) and the PPG17 provisions (site specific standards) set the standard for green infrastructure provision across the Borough. This approach closely reflects the strategic priorities for the Borough's green infrastructure and will provide both an overarching set of principles and a practical tool for planning and development in Stafford Borough.

Table 8.1: Development Specific Standards Checklist

Borough-wide Standard	Development Area Criteria *The development will:*	*example activity*	*monitoring link*	***Developments MUST meet this criteria under the following circumstances:***	*GI Strategy area reference*
Enhancements to existing and creation of new open spaces, green corridors and watercourses will actively:					
Protect landscape, heritage and natural (biodiversity and geodiversity) assets	Fit into surrounding countryside and landscape character & setting	e.g. use of local stone, incorporating existing features, following existing layouts/landform	AMR H6	All developments	Strategic Watercourse Corridors, Maintaining Landscape Quality, Doxey and Stafford Castle, Green Infrastructure in New Development
Reverse habitat fragmentation	Support an increase in priority species & habitats		NI197, AMR E2, CLG Bi	Located in an area shown in the GI Strategy as biodiversity intervention area	Biodiversity Intervention Zones, Strategic Watercourse Corridors, Strategic Open Space, Maintain Landscape Quality, Biodiversity and Access, Doxey and Tillington Marshes, Doxey and Stafford Castle, Green Corridors, Penk and Sow Country Park, Stafford Common Community Park, Accessible Natural Green Space
	Create new wildlife sites and corridors	Includes measures for connecting fragmented habitats, expanding existing wildlife sites	NI197, AMR E2, CLG Bi	Located in an area shown in the GI Strategy as biodiversity intervention area	Biodiversity Intervention Zones, Strategic Watercourse Corridors, Strategic Open Space, Maintaining Landscape Quality, Biodiversity and Access, Doxey and Stafford Castle, Green Corridors, Penk and Sow Country Park, Stafford Common Community Park, Accessible Natural Green Space
Improvements to and expansion of the network of existing access routes will:					
Link residential areas, employment centres and the wider countryside	Integrate with existing streets, paths & surrounding development	Provision of walking/cycling links to neighbouring settlements, to schools, business parks and service centres	AMR H6	Located within an area shown in the GI Strategy as being a priority for access interventions	Strategic Movement Corridors, Gateways to Green Space, Enhancing the Existing Network, Doxey and Stafford Castle, Green Corridors, Penk and Sow Country Park, Stafford Common Community Park, Access to the Countryside and Increased Functionality of Green Spaces, Green Infrastructure in New Development
	Connect to or incorporate sustainable transport routes	Includes existing or planned walking or cycle routes	NI175, AMR H6	Adjacent to existing or planned routes Located within an area shown in the GI Strategy as being a priority for access interventions	Strategic Movement Corridors, Gateways to Green Space, Enhancing the Existing Network, Doxey and Stafford Castle, Green Corridors, Penk and Sow Country Park, Stafford Common Community Park, Access to the Countryside and Increased Functionality of Green Spaces, Green Infrastructure in New Development
Provide safe, managed and well-signed options for walking and cycling	Provide public spaces and access routes that are/feel safe	Ensuring that routes are open and give a feeling of personal safety Includes provision of new routes and improvements to existing routes	NI176, AMR H6	All developments: - Developments of 5 or less housing units or <500m sq floorspace should demonstrate that these issues have been considered in design/development proposals - Developments of more than 5 housing units or greater than 500m sq floorspace should include physical measures to provide/improve routes connecting to or impacted on by development	Strategic River Corridors, Strategic Movement Corridors, Gateways to Green Space, Enhancing the Existing Network, Green Corridors, Penk and Sow Country Park, Stafford Common Community Park, Wildwood Park, Weeping Cross, Baswich and Wildwood, Access to Countryside and Increased Functionality of Green Spaces
New housing developments will:					
Retain natural, landscape and heritage features	Conserve existing landscape, heritage, natural features and structures	Includes: - structural features (trees, hedgerows, etc) - geological/topographical features - key views - historic monuments, landforms	AMR E2	All developments	Strategic Watercourse Corridors, Maintaining Landscape Quality, Doxey and Stafford Castle, Green Infrastructure in New Development
Provide high quality, accessible green and open spaces where communities can come together	Provide public green space - within 5 minute walk (300m) of all dwellings for amenity greenspaces of at least 0.1ha in size - within 15 minute walk (900m) of all dwellings for natural greenspaces of at least 0.1ha in size	Includes measures for providing new spaces or enhancing accessibility to or functions of existing sites		All developments: - Developments of 5 or less housing units or <500m sq floorspace should demonstrate that these issues have been considered in design/development proposals - Developments of more than 5 housing units or greater than 500m sq floorspace should include physical measures to provide new spaces or enhance access to/functionality of existing spaces (commensurate with the size of development)	Strategic River Corridors, Strategic Open Space, Gateways to Green Space, Biodiversity and Access, Doxey and Stafford Castle, Green Corridors, Penk and Sow Country Park, Stafford Community Park, Tillington, Holmcroft, Trinity Fields and Parkside, Access to Countryside and Increased Functionality of Green Spaces, Accessible Natural Green Space, Green Infrastructure in New Development
	Provide opportunities for active recreation	e.g. green gyms, health walks, cycling routes Includes provision for enhancing existing opportunities by providing improved access to, improving or extending current facilities	NI175, AMR H6	All developments: - Developments of 5 or less housing units or <500m sq floorspace should demonstrate that these issues have been considered in design/development proposals - Developments of more than 5 housing units or greater than 500m sq floorspace should include physical measures to provide new facilities or enhancing existing provision	Strategic River Corridors, Strategic Movement Corridors, Gateways to Green Space, Enhancing the Existing Network, Green Corridors, Penk and Sow Country Park, Stafford Common Community Park, Wildwood Park, Weeping Cross, Baswich and Wildwood, Access to Countryside and Increased Functionality of Green Spaces
	Provide public spaces and access routes that are/feel safe	Ensuring that routes are open and give a feeling of personal safety Includes provision of new routes and improvements to existing routes	NI175, AMR H6	All developments: - Developments of 5 or less housing units or <500m sq floorspace should demonstrate that these issues have been considered in design/development proposals - Developments of more than 5 housing units or greater than 500m sq floorspace should include physical measures to provide new routes/improve routes connecting to or impacted on by development	Strategic River Corridors, Strategic Movement Corridors, Gateways to Green Space, Enhancing the Existing Network, Green Corridors, Penk and Sow Country Park, Stafford Common Community Park, Wildwood Park, Weeping Cross, Baswich and Wildwood, Access to Countryside and Increased Functionality of Green Spaces
Include measures to alleviate the effects of climate change	Incorporate SUDS	In the form of permeable paving or swales		Developments in flood zones Developments in areas shown in the GI Strategy as having potential for wetland management Areas with specific proposals for flood water management Areas prone to surface water flooding	Beaconside, Doxey and Stafford Castle, Flood Storage/Rainfall Interception, Ministry of Defence Stafford, Penk and Sow Country Park, Stafford Common Community Park, Town Centre, Strategic Watercourse Corridors, Green Infrastructure in New Development, Access to Countryside and Increased Functionality of Green Spaces
	Include tree planting to provide shading/cooling			Town Centres	Flooding/Rainfall Interception, Town Centres, Tillington, Holmcroft, Trinity Fields and Parkside
New employment areas, office developments and retail developments will:					
Retain natural, landscape and heritage features	Conserve existing landscape, heritage, natural features and structures	Includes: - structural features (trees, hedgerows, etc) - geological/topographical features - key views - historic monuments, landforms	AMR E2	All developments	Strategic Watercourse Corridors, Maintaining Landscape Quality, Doxey and Stafford Castle, Green Infrastructure in New Development
Be well designed within a high quality green setting	Includes spaces which provide opportunities for passive recreation and interaction	Includes provision of new sites and/or routes, enhancing existing sites'/routes quality/functionality/accessibility	AMR H6	All developments	Doxey and Stafford Castle, Stafford Common Community Park, Gateways to Green Space, Green Infrastructure in New Development
Include measures to alleviate the effects of climate change s	Include provision for green roofs			Areas prone to surface water flooding	Strategic Watercourse Corridors, Town Centres, Green Infrastructure in New Development
	Include provision for water balancing measures	e.g. stormwater ponds/lagoons, street trees to reduce run off		Developments in flood zones Developments in areas shown in the GI Strategy as having potential for wetland management/areas with specific proposals for flood water management Areas prone to surface water flooding	Beaconside, Doxey and Stafford Castle, Flood Storage/Rainfall Interception, Ministry of Defence Stafford, Penk and Sow Country Park, Stafford Common Community Park, Town Centre, Strategic Watercourse Corridors, Green Infrastructure in New Development, Access to Countryside and Increased Functionality of Green Spaces
	Incorporate SUDS	in the form of permeable paving or swales		Developments in flood zones Developments in areas shown in the GI Strategy as having potential for wetland management Areas with specific proposals for flood water management Areas prone to surface water flooding	Beaconside, Doxey and Stafford Castle, Flood Storage/Rainfall Interception, Ministry of Defence Stafford, Penk and Sow Country Park, Stafford Common Community Park, Town Centre, Strategic Watercourse Corridors, Green Infrastructure in New Development, Access to Countryside and Increased Functionality of Green Spaces
	Include tree planting to provide shading/cooling			Business Park developments Town Centres	Flooding/Rainfall Interception, Town Centres, Tillington, Holmcroft, Trinity Fields and Parkside
Include provision for sustainable transport	Connect to or incorporate sustainable transport routes	Includes existing or planned walking or cycle routes	NI175, AMR H6	Adjacent to existing or planned routes Located within an area shown in the GI Strategy as being a priority for access interventions	Strategic Movement Corridors, Gateways to Green Space, Enhancing the Existing Network, Doxey and Stafford Castle, Green Corridors, Penk and Sow Country Park, Stafford Common Community Park, Access to the Countryside and Increased Functionality of Green Spaces, Green Infrastructure in New Development
	Provide public spaces and access routes that are/feel safe	Ensuring that routes are open and give a feeling of personal safety Includes provision of new routes and improvements to existing routes	NI175, AMR H6	All developments: - Developments of 5 or less housing units or <500m sq floorspace should demonstrate that these issues have been considered in design/development proposals - Developments of more than 5 housing units or greater than 500m sq floorspace should include physical measures to provide new routes/improve routes connecting to or impacted on by development	Strategic River Corridors, Strategic Movement Corridors, Gateways to Green Space, Enhancing the Existing Network, Green Corridors, Penk and Sow Country Park, Stafford Common Community Park, Wildwood Park, Weeping Cross, Baswich and Wildwood, Access to Countryside and Increased Functionality of Green Spaces
	Integrate with existing streets, paths & surrounding development	Provision of walking/cycling links to neighbouring settlements, to schools, business parks and service centres	AMR H6	Located within an area shown in the GI Strategy as being a priority for access interventions	Strategic Movement Corridors, Gateways to Green Space, Enhancing the Existing Network, Doxey and Stafford Castle, Green Corridors, Penk and Sow Country Park, Stafford Common Community Park, Access to the Countryside and Increased Functionality of Green Spaces, Green Infrastructure in New Development

Chapter 1: Introducing Green Infrastructure in Stafford Borough

[i] Figures taken from: Stafford Growth Point Programme of Development (October 2008) Stafford Borough and Staffordshire County Councils, West Midlands Regional Spatial Strategy Phase Two Revision Report of the Panel (September 2009)

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[iii] Planning Policy Statement 12 (PPS12): Local Spatial Planning (2008) CLG

[iv] Regional Spatial Strategy for the West Midlands (January 2008) Government Office for the West Midlands

[v] Restoring the Region's Wildlife: Regional Biodiversity Strategy for the West Midlands (2005) WM Biodiversity Partnership

[vi] West Midlands Health and Well Being Strategy (2008) WMRA

[vii] Growing our Future: the West Midlands Regional Forestry Framework (2004) Forestry Commission

[viii] Delivering the Plan for Stafford Borough: Issues & Options (February 2009) Stafford Borough Council

[ix] Shaping our Borough for the Future: Sustainable Community Strategy 2008 – 2020 (2008) Stafford Borough Partnership

[x] A Biodiversity Strategy for Stafford Borough (2000) Stafford Borough Council

[xi] PPG17 Assessment and Open Space, Sport and Recreation Facilities Strategy (March 2009) Kit Campbell Associates for Stafford Borough Council

[xii] New Growth Point: Stafford Programme of Development (October 2008) Stafford Borough and Staffordshire County Councils

[xiii] West Midlands Regional Assembly (2006), West Midlands Regional Concordat 3rd Edition, Birmingham

[xiv] As described in the West Midlands Green Infrastructure Prospectus

[xv] Taken from the spatial vision for Stafford as described in Delivering the Plan for Stafford Borough: Issues & Options (February 2009) Stafford Borough Council

Chapter 2: Drivers for Change

[16] Regional Spatial Strategy for the West Midlands (January 2008) Government Office for the West Midlands

[17] West Midlands Regional Spatial Strategy Phase Three Revision: Options Consultation 29th June – 14th August 2009 (2009) WMRA

[18] Delivering the Plan for Stafford Borough: Issues & Options (February 2009) Stafford Borough Council

[19] Figures taken from the Stafford Growth Point Programme of Development (October 2008) Stafford Borough and Staffordshire County Councils

[20] Stafford Borough Local Development Framework Ecological Desk Study (2008) Staffordshire Wildlife Trust for Stafford Borough Council

[21] Concept Statements and Local Development Documents: Practical Guidance for Local Planning Authorities (October 2003) The Countryside Agency

[22] biodiversity & geodiversity; access & movement; cultural heritage; landscape & visual

[23] Housing Growth and Green Infrastructure Policy (2009) Natural England

[24] Green Infrastructure Strategies: An Introduction for Local Authorities and their Partners (2008) Natural England

[25] Start with the Park: Creating Sustainable Urban Green Spaces in Areas of Housing Growth and Renewal (2005) Commission for Architecture & the Built Environment

[26] Shaping our Borough for the Future: Sustainable Community Strategy 2008 – 2020 (2008) Stafford Borough Partnership

[27] PPG17 Assessment and Open Space, Sport and Recreation Facilities Strategy (March 2009) Kit Campbell Associates for Stafford Borough Council

[28] As referred to in the Sustainable Communities Strategy

[29] Strategic Flood Risk Assessment for Local Development Framework: Level 1, Volume 1 – FINAL (January 2008) Halcrow Group for Stafford Borough Council

[30] Zone 3a: High Probability - land assessed as having a 1 in 100 or greater (>1%) annual probability of river flooding or a 1 in 200 or greater (>0.5%) annual probability of flooding from the sea in any year or

Zone 3b: Functional Floodplain land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood

[31] Land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% – 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% – 0.1%) in any year.

[32] Stafford Town Centre Vision: Urban Design Framework (September 2002) Stafford Borough Council

[33] Proud of our Past – Building for the Future: A Framework for Regeneration (Stone Town Centre Vision) (November 2005) Stafford Borough Council

[34] Planning for Landscape Change: Supplementary Planning Guidance to the Staffordshire and Stoke on Trent Structure Plan 1996 – 2011 (Adopted May 2001) Staffordshire County Council

[35] Historic Environment Character Assessment: Draft Final Report for Stafford Borough Council (April 2009) Staffordshire County Council

[36] West Midlands Regional Spatial Strategy Phase 3 Revision (2009) WMRA

[37] DRAFT 1 The Appropriate Assessment of Cannock Chase AONB Management Plan 2009 - 2014

[38] Also recognised as a potential negative impact in the Management Plan's Strategic Environmental Assessment "Compatibility of Objectives" review, see www.cannock-chase.co.uk/assets/downloads/SEAJan09.pdf

[39] www.sbap.org.uk

Chapter 3: Green Infrastructure Assets

[40] PPG17 Assessment and Open Space, Sport and Recreation Facilities Strategy (March 2009) Kit Campbell Associates for Stafford Borough Council

[41] Historic Environment Character Assessment: Draft Final Report for Stafford Borough Council (April 2009) Staffordshire County Council

[42] Stafford Borough Infrastructure Strategy: Stage 1 Final Report (July 2009) Colin Buchanan & Partners for Stafford Borough Council

[43] Index of Multiple Deprivation (2007) Communities & Local Government

[44] i.e. comparing all areas within Staffordshire against each other

[45] Figures are for January – December 2007, as provided by Office for National Statistics

Chapter 4: Green Infrastructure Issues, Opportunities & Threats

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[47] Adult Health and Lifestyles Survey, (2008), South Staffordshire Primary Care Trust

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[49] Figures from Stafford Growth Point Programme of Development (October 2008)

[50] Health and Well Being in Our Community: Draft Health Strategy 2008-2011 Public Consultation Document (2008), Stafford Borough Council

[51] Marstongate (North Stafford) – Green Infrastructure Concept Statement, (2009), Faber Maunsell for Stafford Borough Council

[52] Stafford Borough Community Plan 2003-2006, (2003), Stafford Borough Council

[53] Stafford Borough Local Cultural Strategy 2001-2006, (2001) Stafford Borough Council, Staffordshire County Council, Stafford District Arts Group and Stafford Borough Sports Council

[54] Local Development Framework: Adopted Statement of Community Involvement (SCI), (July 2006), Stafford Borough Council

[55] Stafford Borough Local Cultural Strategy 2001-2006, (2001) Stafford Borough Council, Staffordshire County Council, Stafford District Arts Group and Stafford Borough Sports Council

[56] Historic Environment Character Assessment – Stafford Environs, (2009), English Heritage, Stafford Borough Council and Staffordshire County Council

[57] Cannock Chase Visitor Impact Mitigation Strategy (Draft, September 2009) Footprint Ecology N.B. part of the Cannock Chase SAC Appropriate Assessment

[58] Stone Town Centre Vision – A Framework for Regeneration, (2005), Stafford Borough Council

[59] Stafford Borough Local Cultural Strategy 2001-2006, (2001) Stafford Borough Council, Staffordshire County Council, Stafford District Arts Group and Stafford Borough Sports Council
[60] The Potential Impact of Climate Change in the West Midlands (2004) Entec for Sustainability West Midlands and UK Climate Impacts Programme
[61] UK Climate Projections Science Report: Climate change projections (2009) Met Office Hadley Centre
[62] PPG17 Assessment and Open Space, Sport and Recreation Facilities Strategy (2009) Kit Campbell Associates for Stafford Borough Council
[63] Towards a Prosperous Stafford: A Strategy for Stafford (2004?) Stafford Borough Council
[64] Stafford Borough Council Employment Land Study: Future Land Estimation Summary Report (July 2007) Staffordshire County Council
[65] Figures from Stafford Borough Infrastructure Strategy (2009)
[66] Marstongate Green Infrastructure Concept Statement (2009) Faber Maunsell et al for Stafford Borough Council
[67] PPG17 Assessment and Open Space, Sport and Recreation Facilities Strategy (2009) Kit Campbell Associates for Stafford Borough Council
[68] Stafford Borough Local Cultural Strategy 2001-2006 (2001) Stafford Borough Council, Staffordshire County Council, Stafford District Arts Group and Stafford Borough Sports Council
69 A Biodiversity Strategy for Stafford Borough (2000) Stafford Borough Council
70 Staffordshire Washlands- A new floodplain biodiversity initiative (2003) Staffordshire Wildlife Trust, Environment Agency, English Nature et al
[71] Fishing for the Future- Angling in 2015: Our Plan to Increase Participation (2006) Environment Agency
[72] Stafford Borough Local Development Framework Ecological Desk Study (2008) Staffordshire Wildlife Trust
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Chapter 7: Resources for Delivery

[74] Including: A Sense of Place (2007), The Cost of Bad Design (2006), Start With the Park (2005)
[75] A Local Area Agreement for Staffordshire 2008-2011: Annual Refresh Submission (20th March 2009) Staffordshire County Council & Staffordshire Strategic Partnership
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[77] New Growth Point: Stafford Programme of Development (October 2008) Stafford Borough and Staffordshire County Councils
[78] http://www.naturalengland.org.uk/about_us/news/2009/010909a.aspx
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Chapter 8: Green Infrastructure Standards

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[82] Understanding the Relevance and Application of the Access to Natural Green Space Standard (May 2008) Land Use Consultants for Natural England
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