

Peterborough's Green Infrastructure & Biodiversity Supplementary Planning Document

Positive Planning for the Natural Environment

This document is a version for Cabinet consideration on 17 June 2019. If approved by Cabinet on 17 June, and if the Peterborough Local Plan is adopted by Full Council on 24 July 2019, then this text box will include the following text on the final publication SPD:

This Supplementary Planning Document was approved by a meeting of Peterborough City Council's Cabinet on 17 June 2019, and brought into effect as an adopted document for the purpose of decision making on 25 July 2019.



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1 Introduction

1.1 Purpose of the SPD

This Supplementary Planning Document (SPD) sets out a vision for how Peterborough's network of green infrastructure and associated biodiversity should be protected and enhanced during the next 20 years. It seeks to raise the profile of the natural environment and ensure its value is recognised in key decision-making by all those involved in delivering Peterborough's sustainable growth during the period of the new Local Plan.

It aims to provide practical guidance and advice on how Green Infrastructure (GI) and biodiversity considerations should be integrated into the development process, primarily to planning applicants, developers and land owners, as well as decision makers such as planning officers. However it will also be of interest to a broad range of other stake-holders including conservation organisations, community groups and interested local residents.

1.2 Status of the SPD

As SPD, this document does not introduce new policy and does not form part of the Development Plan. Rather it explains how policies in the Peterborough Local Plan should be implemented. It will be a material consideration when determining planning applications.

1.3 Structure and Content of the SPD

Guidance and information on the following are covered in this SPD:

- Provision of straight forward and effective guidance and advice regarding biodiversity and GI for developers and those considering applying for planning permission, as well as decision makers.
- Priority GI focus areas and the identification of a range of priority GI projects to take forward and deliver the Council's GI vision on the ground.

1.4 A Collaborative Approach

This SPD has been produced by the City Council working in close partnership with a small working group, established in 2015, consisting of a range of conservation organisations and land managers. The Council would particularly like to thank and acknowledge the following partners and organisations who have contributed towards this strategy document: Clare Freeman (Nene Park Trust), Justin Tilley (Natural England), Martin Baker (The Wildlife Trust BCN), Silviu Petrovan (Froglife) and Jamie Robins (Buglife).

In July 2016 a wider stakeholder engagement workshop was held, attended by 40 people, representing 33 different organisations, which further informed the priorities and areas of focus for this strategy. The success of this event demonstrated a real interest in GI and determination to continue the excellent partnership collaborative working approach. This then led to the inaugural Peterborough Nature Partnership meeting in November 2016.

In July 2016 a presentation was also made at the City Council's Planning Customer Forum to inform and invite feedback to the strategy. This well-attended event included a range of interested parties including Parish Council representatives, land owners, developers and agents as well as specialists such as ecological consultants and architects.

1.5 Definitions

Green Infrastructure is a strategically planned and delivered network of high quality green spaces and other environmental features (known as **Natural Capital** areas). It should be designed and managed as a multifunctional resource capable of delivering a wide range of environmental and quality of life benefits (**Ecosystem Services**) for local communities. Green infrastructure can include parks and natural green spaces, wildlife sites, playing fields, woodlands, allotments and private gardens.

It should be noted that GI and open space (as defined in Peterborough's Open Space Strategy) are complementary but distinct: GI has a much greater focus on wildlife, biodiversity, ecosystem services and countryside access and may include both public and private land.

Green infrastructure networks have previously been identified at both strategic and local scales across Peterborough in the 2007 Green Grid (GG) Strategy which remains a valid evidence base in highlighting GI resources and where deficiencies in GI can be found. Therefore this document aims to refresh rather replace the GG Strategy, seeking to provide an up-to-date deliverable GI plan for Peterborough.

Biodiversity is the "wealth of wildlife" incorporating both rare and common species and habitats; all of which play a vital role in ecosystems. A healthy ecosystem can provide a variety of **ecosystem services** such as soil formation, nutrient recycling, climate regulation, flood control and social benefits such as education, recreation and tourism. Biodiversity also has an intrinsic value which we have a responsibility to protect for future generations.

1.6 Benefits of Green Infrastructure

Green infrastructure provides multiple benefits to Peterborough, not only to the natural environment but also for the economy and people. In fact GI provision is now considered as important as the provision of grey infrastructure such as transport, food and energy supplies, water and waste management systems.

Seven key benefits of green infrastructure have been identified for Peterborough which are supported by numerous studies and evidence:

1) Supporting Healthy lifestyles and thriving communities:

There is strong evidence, from a large number of high-quality studies that nature promotes recovery from stress and attention fatigue, and that it has positive effects on mood, concentration, self-discipline, and physiological stress (*Health Council of the Netherlands, 2004*).

Proximity to greenspace is generally associated with increased levels of physical activity. This effect is particularly marked in the under 25s, who are more likely to be obese if they do not have access to greenspace.

Residents who live near nature generally cope better with the stress of everyday life and are considered as happier than those who do not have easy access to green spaces.

Education involving the natural environment and green spaces can positively influence the functioning of communities through reducing anti-social behaviour, increasing self-esteem and improving skills.

2) Providing active access to the outdoors

Well designed, attractive and welcoming walking, cycling and equestrian routes connecting people with green-spaces help to maximise health benefits and people's enjoyment and appreciation of the natural environment.

Physical activity in natural environments, or 'green exercise', is estimated to provide health benefits of £2.2 billion a year to the English adult population, according to research published in the journal *Preventive Medicine* (2016).

3) Conserving and enhancing landscape character and built heritage

Well designed GI can assist in conserving and enhancing heritage assets such as historic landscapes and archaeology, and improving the setting of historic buildings and monuments and other assets.

Integrating access to green spaces and historic places into the everyday lives of communities can help to develop a connection with the local area, increase community participation and reduce anti-social behaviour.

4) Enhancing biodiversity

High quality, planned GI offers opportunities for creating and enhancing Priority Habitats with associated benefits for Priority Species, connecting sites via wildlife corridors and networks, protecting and enhancing landscape character, and improving the quality of rivers and streams.

5) Supporting healthy ecosystems

A robust and resilient ecological network can help to mitigate the impacts of extreme weather events, for example by providing shading and natural cooling and improved air quality from urban trees as well as storm water storage in upstream catchments and floodplains.

GI can play a key role in sustainable drainage, drought mitigation, and in flood and water stress reduction, through providing opportunities for attenuation or infiltration that can help to recharge aquifers as well as to maintain levels in watercourses or other wetland features. Green infrastructure can influence water quality through limiting diffuse pollution and controlling water levels in watercourses.

6) Providing climate change solutions

In Tony Juniper's book "What has nature done for Britain" he demonstrates significant carbon storage benefits using a local example to Peterborough:

"...the Great Fen will bring a number of benefits. One is in relation to the job of carbon capture. Reversing the drainage and returning this area of the Fens to wetland will arrest the continuing degradation of the peat. Over the 80 or so years when the peat would have continued to disappear (with much of it expected to be gone long before then), each re-wetted hectare of the Great Fen will on average result in avoided emissions of 10,000 tonnes of carbon dioxide equivalent. By my rough calculations 2,000 hectares of re-wetted land will save 20 million tonnes of CO₂ over 80 years or the equivalent of 2.5 million tonnes per year (the emissions of 1.5 medium sized cities)".

7) Invigorating the local economy and natural tourism

It is estimated that a property located within 450 metres of a park can be worth up to 19% more than houses not in such a location (Neil Dunse et al., 2007). Views of forests or water can increase house values by 7% and 5% respectively (Garrod and Willis, 1992).

The natural environment provides an enormous range of products and services worth £15 billion to the national economy and supports a wide range of economic sectors including agriculture and horticulture with pollination services being of particular value. Protecting natural areas can deliver economic returns that are 100 times greater than the cost of their protection and maintenance.

Green infrastructure also supports the green economy through the provision of goods such as biofuels, which offer renewable energy opportunities. Technological innovation in this area will enable business growth, skills development and new employment opportunities.

Locally, there are significant opportunities for Peterborough's economy to benefit from natural tourism, for example in relation to the high profile Great Fen Project which is located in close proximity to south of the city.

1.7 Who should think about GI and Biodiversity?

GI and biodiversity should be considered and incorporated at every scale of planning, from the strategic level down to individual buildings. Everyone has a role to play. From householder applicants, to community groups, to developers designing new housing sites and new communities. For strategic level schemes, such as sustainable urban extensions and large scale allocations, it will be important that a collaborative and multi-disciplinary approach is taken to develop solutions that will work on the ground. Of equal importance is seeking input from local communities. Not only could they provide useful information on existing GI and biodiversity assets that are important to them, but also what new GI they would like to see in their area.

2 Setting the Scene

2.1 Background to developing the SPD

This SPD builds on a range of previous strategies including Peterborough's Green Grid Strategy (2007) as well as Developer Guidance Advice (2012) and Biodiversity Checklist Guidance (2013). By refreshing and bringing these documents together for the first time, it is envisaged that this new document will provide a helpful and straight forward "one stop shop" source of guidance and advice relating to GI and biodiversity for Peterborough.

It should be noted that a revised **Council-specific Biodiversity Strategy** was adopted in December 2018 which aims to demonstrate the Council's commitment to having due regard to biodiversity in the exercising of its functions under the key headings of:

- 1) Promoting Biodiversity in Planning;
- 2) Showing Regard for Biodiversity on Council Managed Land & Buildings;
- 3) Protected Sites and
- 4) Green Infrastructure

The Council's Biodiversity Strategy references and fully supports the vision and approach set out in this SPD.

Peterborough's Open Space Strategy (OSS) has also recently been refreshed in parallel with this document and now provides a comprehensive up-to-date assessment of the supply and demand for open space, and given the obvious cross-over with GI, should be referred to alongside this document.

In addition Peterborough's recently revised Rights of Way Improvement Plan is a key document for identifying and taking forward a range of strategic access-related projects to benefit cyclists, horse-riders and pedestrians.

Peterborough's Trees & Woodland Strategy has clear links to this SPD, for example as one of the drivers for key projects such as the Forest for Peterborough initiative and the evolving Ward-based Tree Canopy Cover approach to tree planting.

2.2 National Policy Context

The National Planning Policy Framework (NPPF), first published in 2012, with the latest version published in February 2019, sets out the Government's planning policies for England with a presumption in favour of sustainable development and conserving and enhancing the natural environment as a core planning principle. The NPPF states that local planning authorities should "set out a strategic approach in their local plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure".

In addition the NPPF requires local authorities to "plan for biodiversity at a landscape scale across local authority boundaries" and "identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation".

This SPD is also prepared in the context of the National Planning Practice Guidance (NPPG), published in March 2014 and periodically updated, which expands on national policy. It defines GI as a network of multifunctional green space, urban and rural, which is capable of delivering a wide

range of environmental and quality of life benefits. It goes on to state: “Green infrastructure is not simply an alternative description for conventional open space. As a network, it includes parks, open spaces, playing fields, woodlands, but also trees, allotments and private gardens. It can also include streams, canals and other water bodies and features such as green roofs and walls”.

The core principles of this SPD are driven by the objectives of the [Natural Environment White Paper, The Natural Choice: Securing the Value of Nature](#), the aims of which include halting biodiversity loss by 2020, supporting healthy functioning ecosystems, and establishing coherent ecological networks. [The Lawton Review Making Space for Nature](#) which informed the White Paper concluded that England’s collection of wildlife sites, diverse that it is, does not comprise a coherent ecological network even today, let alone one that is capable of coping with the challenge of climate change and other pressures.

The White Paper refers to the role of urban GI as completing ‘the links in our national ecological network’ and ‘one of the most effective tools available to us in managing environmental risks such as flooding and heat waves’. It advocates that green spaces should be factored into the development of all communities.

The White Paper also introduced a number of policies and initiatives including [Nature Improvement Areas \(NIAs\)](#), intended to enhance and reconnect nature on a significant scale, which, locally, led to the [Nene Valley NIA](#) being designated in 2012. Consequently the Nene Valley forms one of the key ecological areas in this document (see **section 3**).

The White Paper also introduced [Local Nature Partnerships \(LNPs\)](#), intended to work at a strategic scale for a better natural environment. Locally, [Natural Cambridgeshire](#) was established in 2012 as the LNP for Cambridgeshire and Peterborough, and has more recently developed a [vision](#) and action plan.

The [Biodiversity Strategy for England, Biodiversity 2020](#), builds on the Natural Environment White Paper, setting out how the approach of the planning system will guide development to the best location, encourage greener design and enhance natural networks.

More recently in 2018 the Government produced [A Green Future: Our 25 Year Plan to Improve the Environment](#). This Plan sets out a number of relevant key targets and actions including:

- Developing a Nature Recovery Network to protect and restore wildlife;
- Embedding an environmental net gain principle for development, including housing and infrastructure;
- Creating or restoring 500,000 ha of wildlife rich habitat outside the protected site network, focussing on priority habitats;
- Increasing woodland in England to 12% cover;
- Making sure there is high quality, accessible natural spaces close to people.

The [National Pollinator Strategy](#) (2014) sets out a 10 year plan to help pollinating insects survive and thrive across England, and promotes the need for “more, bigger, better, joined up, diverse and high quality flower-rich habitats (including nesting places and shelter) supporting our pollinators across the country”.

The [State of Nature Report](#) (2013 and updated in 2016) is the first of its kind to document the status and population trends of animals and plants in the UK, with an alarming overall decline in species recorded. However the report also identifies ways in which to stop the losses and ‘bring back nature’.

The [UK Action Plan for Biodiversity](#) was launched in 1994 with action plans produced for nationally important species and habitats. These were subsequently reviewed and replaced by the UK Post-2010 Biodiversity Framework, leading to the [UK Priority Habitats and Species List](#). This forms

the basis of [Cambridgeshire and Peterborough's Action Plans](#), and associated [list of important local species](#), which are an important consideration in local habitat and species-focussed projects.

2.3 Legislation

The Council is required to have regard to the safeguarding of species and habitats protected under UK, European and International legislation when determining all planning applications. The main legislation includes:

- [the Wildlife and Countryside Act 1981 \(as amended\)](#)
- [the Hedgerows Regulations 1997](#)
- [the Natural Environment and Rural Communities Act 2006](#)
- [the Conservation of Habitats & Species Regulations 2017 \(The Habitats Regulations\)](#)
- [the Protection of Badgers Act 1992](#) and [Wild Mammals \(Protection\) Act 1996](#)

2.4 Local Policy Context

The Local Plan sets out the plans and policies for sustainable growth and regeneration in Peterborough over the next 20 years. This SPD expands on the Local Plan to provide detailed guidance to help implement policies LP22 Green Infrastructure Network and LP28 Biodiversity and Geodiversity Conservation.

LP22 requires all development proposals to ensure that existing and new green infrastructure is considered and integrated into the scheme design from the outset. Development proposals that are consistent with and support the delivery of the opportunities, priorities and initiatives identified in the Peterborough Green Infrastructure and Biodiversity SPD will be supported.

Policy LP28 requires development proposals to ensure no net loss to biodiversity and that a **net gain in biodiversity** is achieved wherever possible. In addition, all proposals are required to follow the "mitigation hierarchy", by seeking to avoid impacts to biodiversity in the first instance, then to mitigate unavoidable impacts, and, as a last resort, to compensate for unavoidable residual impacts that remain after avoidance and mitigation measures.

3 Peterborough's Approach to Green Infrastructure and Biodiversity

3.1 GI and Biodiversity in Peterborough; the Current Situation

Green Infrastructure: Within the urban areas of Peterborough, the city has benefited from enlightened green infrastructure planning by the Peterborough Development Corporation during the late twentieth century, which incorporated significant areas of green spaces throughout the new townships.

It was also during this period that the Nene Park Trust (NPT) was established which has resulted in the provision of a significant area of connected green spaces along the river Nene corridor; today NPT is an exemplar of a well-run and managed Country Park, and welcomes over 1m visitors annually.

The Trust's recently published Master Plan builds on this foundation, setting out an exciting vision for the park over the next 20 years; in fact many of the projects and initiatives identified in the [Master Plan](#) are likely to be taken forward through the delivery of this strategy.

During the 1990's Peterborough became an Environment City, a period which also saw the establishment of Peterborough Environment City Trust. More recently, Peterborough has set out its ambition to become the UK's Environment Capital with an associated [Environment Action Plan](#).

Biodiversity: Despite its relatively small geographical area, Peterborough supports a number of distinctive landscapes and rich mosaic of habitats including woodland, parkland, limestone grassland, river valleys and wetlands.

Approximately 10% of the Unitary Area is of at least county significance for its wildlife and 2% of the area is of national importance. This includes 3 sites (Barnack Hills & Holes, Orton Pit and The Nene Washes) which are also of international importance.

Of particular note is Orton Pit which supports the largest known population of great crested newts in Europe; Castor Hanglands National Nature Reserve (NNR) has nationally notable woodland habitat and species rich grassland and supports numerous rare birds and invertebrates as well as a pond that is considered to be the most valuable for aquatic invertebrates in England; Barnack Hills and Holes is renowned for its grassland flora including one of the best displays of pasqueflower and an international significant array of orchids; the Nene Washes holds one of the most significant wintering bird populations in Europe.

Peterborough also supports a rich geological resource with a number of designated sites including Eye Gravel Pit Geological Site of Special Scientific Interest (SSSI) and six Local Geological Sites.

Access to the Natural Environment: There are currently a number of strategic long distance routes available to cyclists, equestrians and pedestrians including the Green Wheel cycle network which provides a unique continuous 50km cycle path around the city with connecting "spokes" connecting the route to the city centre, as well as the Nene Way, Hereward Way and Torpel Way, which are complemented by an extensive network of other rights of way.

It should be noted that the [Rights of Way Improvement Plan](#) identifies specific gaps and deficiencies in the network which are being addressed via the Peterborough Local Access Forum (PLAF).

This SPD promotes the **Accessible Natural Greenspace Standard** (ANGSt), as developed by Natural England and further information on this standard can be found in [Peterborough's Open Space Strategy](#) as well as the document [Nature Nearby: Accessible Natural Greenspace](#).

One key aspect of ANGSt that is particularly relevant to this SPD is the recommendation that everyone, wherever they live, should have an accessible natural green-space equivalent to "a minimum of one hectare of statutory Local Nature Reserves (LNR) per thousand population". Peterborough's OSS has identified that there is currently 0.42ha of LNR per thousand population (equating to 82ha). Therefore an initiative that seeks to increase the current provision of LNRs has been identified as a specific project in the Schedule of Priority GI Projects (**Appendix 1**). This initiative will be taken forward by the City Council in partnership with other relevant organisations.

3.2 Peterborough's Vision for the Future:

It is important to recognise that many of the City's habitats (and associated species) have declined in quality and extent during the past few decades, and without careful forward planning, the city's planned growth has the potential to significantly impact on these natural resources through both direct and indirect impacts such as reduced habitat connectivity and fragmentation, increased visitor disturbance and a reduction of wildlife habitat features.

With significant development growth proposed in the Local Plan, it is important that Peterborough's growth ambitions deliver not just housing and employment targets, but enable the provision of a high quality, robust GI network (please refer to figure 1) which provides the natural services required to support the sustainable development of the city.

It is therefore Peterborough's ambition to ensure that:

By 2036 the Council and its partners will have helped to create an ecological network across Peterborough that is rich in wildlife, providing connectivity of valuable habitats between areas of high quality natural green spaces, delivering multiple benefits to both people and wildlife, whilst enabling the city to grow sustainably and providing a high quality of life for all.

In order to realise the city's vision, the Council and its stakeholders will promote, seek funding for, and deliver projects which maximise the benefits of green infrastructure including:

- Supporting healthy lifestyles and thriving communities
- Providing active access to the outdoors
- Conserving & enhancing landscape character and built heritage
- Enhancing biodiversity
- Supporting healthy ecosystems
- Providing climate change solutions
- Invigorating the local economy and natural tourism

This will involve continued close collaborative partnership working and project delivery between a broad spectrum of organisations including conservation groups and charities, statutory bodies, planners, developers, land owners and the local community.

It is however recognised that it is not always appropriate for every GI project to try to deliver all benefits, for example there can be a conflict between enhancing biodiversity and providing increased public access.

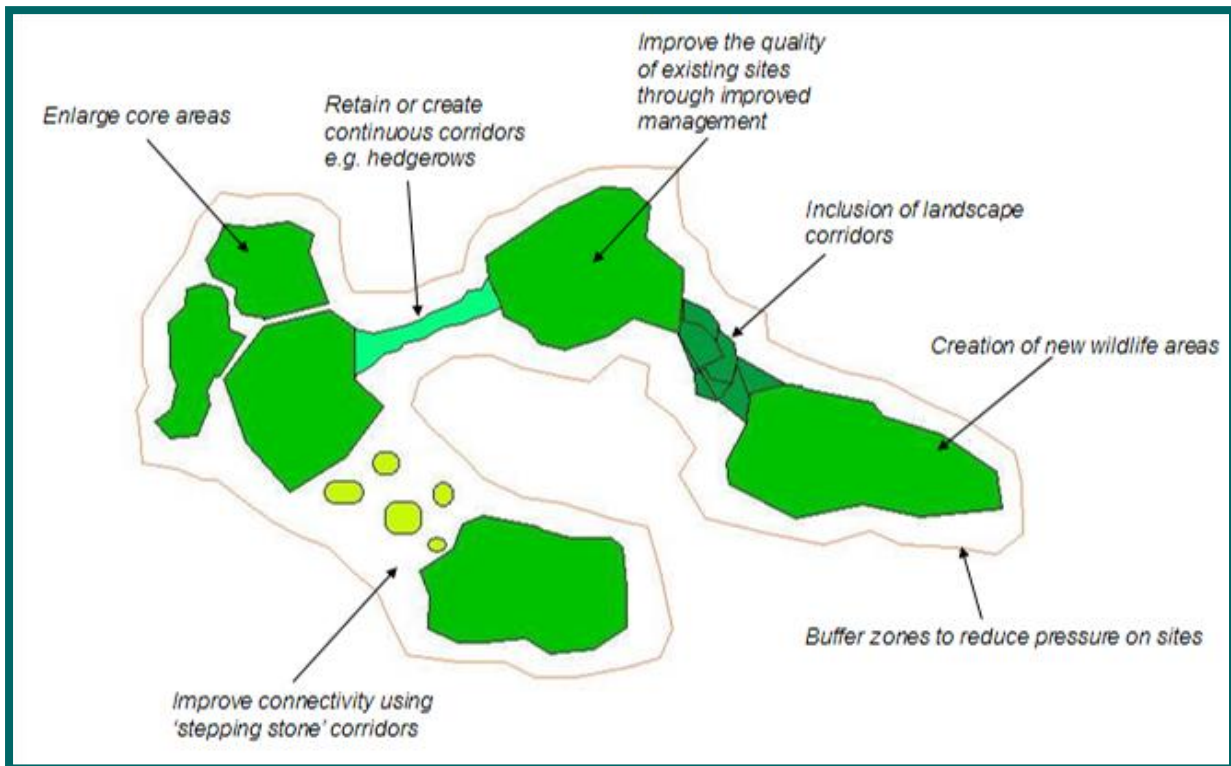


Figure 1 above highlights the principles of how green infrastructure networks may be created and enhanced at a strategic planning level

3.3 Peterborough's Key GI Focus Areas:

An analysis of Peterborough's distinctive landscapes and geology has helped to identify the key areas which will provide the focus for delivering green infrastructure-related projects and initiatives going forwards. In addition it is recognised that there are a number of strategic outcomes which are better addressed at a city-wide scale, therefore these projects are included within the "urban and city-wide" heading. The focus areas are as follows:

Nene Valley: a key wildlife corridor which passes through the heart of Peterborough and presents significant opportunities for biodiversity and landscape enhancement and creation, as well as excellent opportunities to promote greater public access to nature

Welland Valley: forming much of Peterborough's northern boundary with Lincolnshire, the catchment actually covers a surprising amount of Peterborough and provides good opportunities for biodiversity and landscape enhancement and creation

South Peterborough Green Parks: located to the south of the city, this area of former brick works supports some significant wildlife sites and links closely to the Great Fen area as well as the Nene Washes. It is now a major urban extension growth area which presents excellent opportunities to promote access and recreation opportunities whilst ensuring that the network of wildlife sites are carefully managed and better connected

The Fens: a significant landscape to the east of the city, much of the fens are now intensively managed for agriculture, however there are real opportunities to restore and re-create traditional habitats and associated species via agri-environment schemes as well as through major projects such as the Great Fen Restoration Project

John Clare Country: the mosaic of limestone grassland meadows, hedgerows and woodlands, associated with poet John Clare, presents opportunities to restore and create a better connected network of wildlife sites including former minerals sites

Urban & City-Wide Area: There are significant opportunities to enhance urban biodiversity and provide greater, improved access to nature, helping to reconnect people and wildlife and the associated health benefits that brings. In addition, many outcomes are better achieved by taking a more encompassing city-wide approach, delivering projects at a more strategic scale to benefit key species and habitats as well as addressing wider impacts that may result from planned housing growth

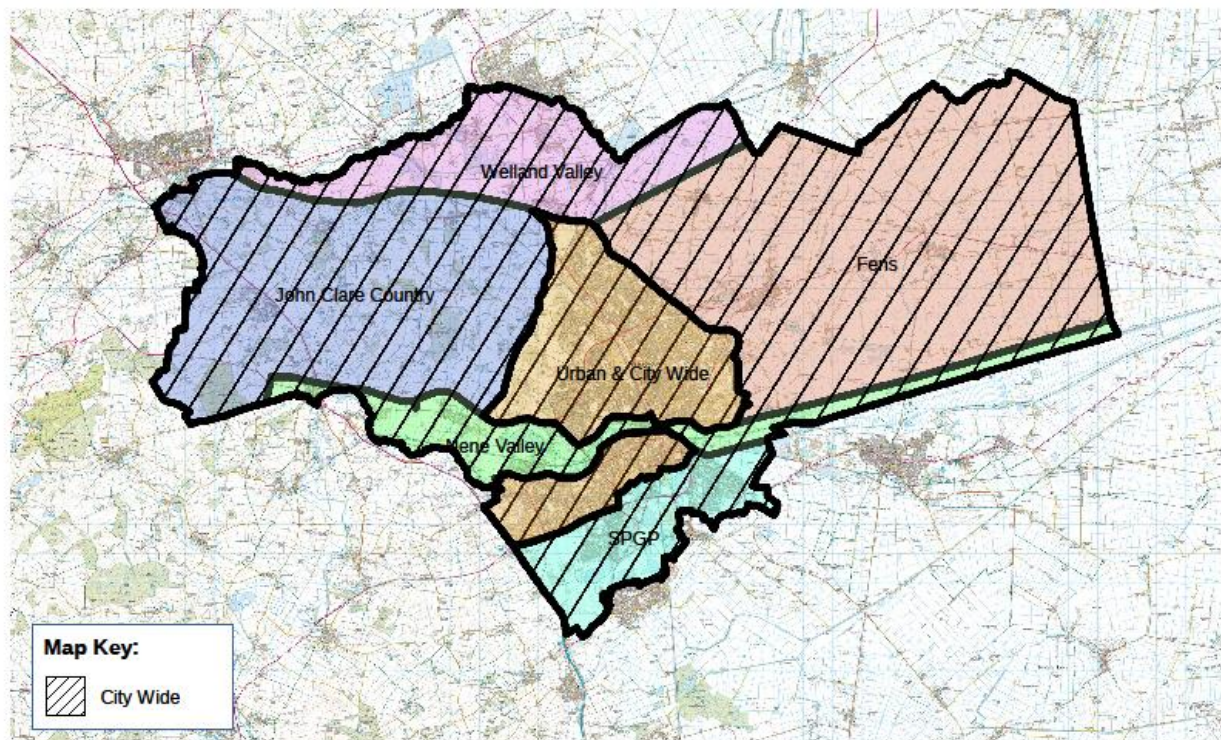
Whilst this area-focussed approach has been developed to focus and group initiatives and projects around distinctive and recognised local landscapes, it is important to note that there are definite and clear connections between these areas, for example there are strong historic links between the Nene and Welland Valleys which are linked geographically through the John Clare Country area. It is also recognised that cross-boundary working is a key principle of GI, for example the South Peterborough Green Parks area has obvious and strong connections beyond the Peterborough boundary towards the Great Fen in Huntingdonshire District.

The Nene Valley connects upstream to Northamptonshire and Peterborough's continued involvement in the development and delivery of the Nene Valley Catchment Partnership is vital to ensure enhancements to the river corridor are achieved at a landscape scale. The Fens

area of Peterborough forms a relatively small but valuable component of the overall Fens natural area; close partnership working with the Fens for the Future Partnership is therefore key to developing and delivering significant enhancements to this landscape. The Welland Valley is also a landscape well connected to neighbouring areas including Northants, Rutland and Lincolnshire; continued partnership working with the Welland Valley Catchment Partnership is vital to realising the benefits to this GI corridor.

The following section describes the key features and associated issues relating to these focus areas, sets out what approach will be taken to address the issues identified and how this will be achieved. Figure 2 below summarises those areas, geographically.

Figure 2: Peterborough's Green Infrastructure Focus Areas



The Nene Valley

The Nene Valley rises in the west of Northamptonshire before flowing through Peterborough then out to the Washes. The Nene supports a wide range of natural habitats including wet grasslands, marshes, wetlands and wild-flower meadows, which are valuable for many species such as kingfishers, otters, herons, as well as overwintering birds including large flocks of swans and geese.

However the habitats and associated wildlife face many threats in the future due to pressures from planned population growth and anticipated climate change expected to result in increased flash floods and more frequent droughts. Non-native invasive species (such as Himalayan and Orange Balsam) are also relatively widespread along the river corridor. Many of the most valuable habitats are also often isolated from one another, being surrounded by intensively farmed land or urban areas.



Marginal (© Carry Ackroyd)

Historically many of the wet grasslands have been drained and flower-rich meadows sprayed with herbicides as part of agricultural improvements which in turn has led to a significant decline in associated wildlife.

There is also a strong and valued historic archaeological interest to the Nene Valley from the Roman settlement of Dvrobriavae and Ermine Street Roman Road to the west of the city and the Bronze Age site at Flag Fen on the edge of the Fens. However there remains scope to better interpret these sites and also to enhance access particularly from the city centre.

The Nene is also an important navigable route for boating and is popular with canoeists and anglers, who all share an interest in improving the water quality of the river. The Nene Way is a long distance footpath popular with walkers. However opportunities exist to further enhance the quality and connectivity of routes for the benefit of walkers, cyclists and equestrians.

What we plan to do:

Taking a landscape-scale approach, the Nene Valley will be promoted in partnership with the [Nene Valley Nature Improvement Area](#) project as a “[Living Landscape](#)”, with the aim of working with farmers and land owners to better connect habitats and manage land in a more wildlife-friendly way.

Opportunities to provide more suitable areas of well-connected open spaces for public enjoyment will be sought. Improving people’s understanding and interpretation of the historic, archaeological and geological interest of the area will be promoted.

How we will achieve this:

- Restoration & enhancement of flood meadows & associated habitats
- Delivery of “urban study” projects such as coir roll installation, fish refuges and back-water restoration
- Enhancing recreation & access opportunities such as the Thorpe Meadows and Boardwalks nature reserve area



The Welland Valley

The Welland Valley forms, in part, the northern boundary of the Peterborough unitary authority area, however its catchment extends much further south towards the city. The river's naturally meandering course becomes significantly more modified east of Glinton village, with the Maxey Cut forming a major canalised section of the river within Peterborough.



Kingfisher (© Carry Ackroyd)

What we plan to do:

The [Welland Valley Partnership](#) has developed a River Improvement Plan which sets out a clear vision for the river valley and its tributaries which will:

- Be cleaner and healthier
- Continue to provide drainage and manage flood risk
- Support more fish, birds and other wildlife
- Meet the needs of drinking water suppliers and businesses
- Provide a more attractive place for people to enjoy
- Be sensitively managed by everyone whose activities affect it

How we will achieve this:

- Promote as a corridor for biodiversity and landscape enhancement & creation including promoting wet woodland habitat creation where appropriate
- Enhancing habitat connectivity including habitat protection and enhancement along Maxey Cut Drain
- Improving the Water Framework Directive status of Werrington Brook and Brook Drain tributaries by delivering the Werrington Brook Improvement Project
- Promoting enhanced public access from Werrington Brook to the river Welland including a new footbridge over the Welland

John Clare Country

The limestone country to the west of the city was home to 19th century poet John Clare who wrote passionately about changes to the open landscape that took place here during the time of the Enclosure Acts.

The area includes wild-flower rich grassland, ancient woodlands and hedgerows and several wildlife-rich limestone quarries. There are a number of large traditional estates as well as historic features such as Ermine Street (Roman road). The more undulating terrain here provides warm and sheltered conditions for many reptiles and insects such as common lizard and the green tiger beetle.

There is an extensive network of road-side verges as well as several existing and former railway lines that support species-rich limestone grassland and provide connectivity through the landscape.



Swaddywell field (© Carry Ackroyd)

Future threats to this landscape include pressures from planned population growth, and in particular from potential recreational visitor pressures to existing wildlife sites such as Castor Hanglands NNR and Barnack Hills and Holes SSSI & SAC. The connectivity of access routes is also limited in places due to physical constraints such as the A1 and A47 roads and the river Nene.

What we plan to do:

Taking a landscape-scale approach, John Clare Country will be promoted as a “[Living Landscape](#)”, with the aim of working with a range of partners including farmers and land owners, conservation groups and the local community to link, extend and better manage existing fragments of meadow and verges, woodland, wetland and former limestone quarries for wildlife.

Opportunities to enhance access routes as well as providing more suitable areas of well-connected open spaces for public enjoyment will be sought.

How we will achieve this:

- Enhancement and creation of limestone grassland habitats
- Extension and buffering of core ecological sites
- Enhancing recreation & access opportunities

The Fens

The Fens was England's largest wetland, however less than 1% of the original wetland habitat now remains. Today the Fens are nationally important for modern productive farming. The provision for wildlife in the farmed landscape increases significantly with the uptake of environmentally friendly farming practices and sensitive ditch and drain management, thereby creating a network of wildlife habitats extending throughout Fenland. The variety and abundance of farmland wildlife increases and iconic Fenland species thrive.



Morton's Leam (© Carry Ackroyd)

What we plan to do:

A vision has been developed by the [Fens for the Future Partnership](#) which is to see sustainable wetlands restored, re-created and reconnected across the Fens for the benefit of people, our natural and historic heritage and the rural economy. Sustainable wetlands will help reduce storm effects, make available clean water and retain peatland soils so helping mitigate the effects of climate change, while at the same time offering a haven for wildlife, protecting our historic heritage and providing exciting areas for people to visit.

Recreational access and tourism increases with more people taking exercise in the countryside. The diversity of the local economy widens and opportunities for employment in local communities are created.

How we will achieve this:

- Supporting the development of practical approaches and techniques for establishing corridors, buffer zones and sustainable use areas
- Maintaining up to date information on the Fens to inform future priorities
- Encouraging the establishment of multifunctional wetlands that support biodiversity, natural heritage and management of water resources
- Raising awareness of the Fens to support development of tourism opportunities to benefit the area's economy and communities

South Peterborough Green Parks

The South Peterborough Green Parks (SPGP) covers an extensive area of land to the south of Peterborough stretching from the A1 in the west, through the Hamptons up to the Nene Washes and Whittlesey in the east. The Great Fen is also located adjacent to the south of this area.



Along the drain (© Carry Ackroyd)

Historically, this area has been dominated by the brick-making industry, however as this industry has declined, many of the former clay extraction sites have developed into important sites for wildlife, the most significant being Orton Pit SSSI & SAC which is now believed to support the largest population of great crested newts in Europe. The area also includes numerous water bodies with excellent water quality that support a range of stoneworts and other aquatic plants.

Much of the area has, or is, scheduled to be redeveloped for residential and employment uses. This presents potentially significant pressures to existing wildlife sites such as Orton Pit SSSI through habitat fragmentation and isolation, increased recreational visitor use and pollution issues.

What we plan to do:

A [vision](#) for SPGP was developed in 2007 by a partnership including Natural England, the Council, local conservation organisations as well as major land-owner O&H Hampton Ltd:

“South Peterborough Green Parks will be an exciting, inspirational place to visit, a mosaic of water, woods, grassland and play areas with surprises around every corner. A place that people will want to visit again and again. A place that people will make their own and call their own”.

How we will achieve this:

- Ensuring that habitat connectivity, enhancement and creation is carefully integrated into planned development.
- Providing plentiful opportunities for people to appreciate, be involved with and enjoy nature close to where they live and work with large areas of well-designed open spaces and promoting natural play.
- Recognising and interpreting the history and culture of the area including the brick-making industry.
- Promoting links to the Great Fen both in terms of physical access and habitat connectivity.

Urban & City-Wide Area

To complement the area-specific focus areas it is important to recognise that many green infrastructure, geo and biodiversity issues are more strategic in nature. This includes key species and habitats, however these projects also recognise the importance and value of engaging with residents to promote the enjoyment and protection of wildlife along with providing access to nature.



Flock and Pylons (© Carry Ackroyd)

What we plan to do:

Develop projects that are “city-wide”. For example, issues surrounding habitat connectivity affecting priority species such as hedgehogs, water voles, amphibians and reptiles are considered, along with habitats important to the whole city such as Open Mosaic (brownfield) Habitats and Ponds. Species associated with the wider built environment such as swifts and house sparrows are also included.

A habitat opportunity mapping project is planned which will cover the whole city; this will look at opportunities to create new habitat that would enhance a) biodiversity, b) water quality and c) air quality, and then bringing everything together to look at multiple benefits (Ecosystem Services) and highlighting the best sites to this take forward. In addition, strategic access opportunities are included to ensure that all residents and visitors have access to good quality, well managed natural green spaces.

How we will achieve this:

- Targeting habitat enhancements for priority species and habitats, informed by identification and mapping of key habitats and opportunities
- Extension and buffering of core ecological sites
- Identifying and delivering projects that improve people’s connectivity to quality natural green spaces
- Developing projects that focus on urban areas of the city including targeted tree planting and enhancements to open mosaic habitats
- Promoting opportunities for residents to help wildlife such as through caring for gardens and allotments

4 Making It Happen – GI Delivery

4.1 Priority Green Infrastructure Projects

The GI projects set out in [Appendix 1](#) are considered to represent the most deliverable and beneficial schemes currently identified in Peterborough. These projects are anticipated to provide multiple GI benefits which are highlighted against each specific project. The key principles of these projects however should focus on collaborative partnership working, delivering connectivity for the benefit of wildlife and people as well as between geographic areas as appropriate.

Each specific project includes a brief description, details of the lead and partner organisations, estimated costs, key GI benefits, potential funding sources and its current deliverability status. Projects have been grouped under the relevant landscape area and strategic outcome.

It is also important to recognise that [Appendix 1](#) is a “live” document, and as such, new projects may be added to the table and existing projects may be removed, either upon completion or due to significant impediments to delivery.

Projects will be delivered by a wide range of partners, who must be prepared to take ownership of and commit to taking forward the specific projects they have proposed for implementation. To be included, there must be reasonable certainty that projects will have both human and monetary resources available over a realistic timescale.

4.2 Governance

It is anticipated that the emerging Peterborough Nature Partnership will lead on the coordinated delivery of the priority projects listed in [Appendix 1](#), supporting the project lead organisations in addressing specific delivery issues as well as in seeking appropriate funding.

It is also important to recognise the vital role that the City Council has in ensuring momentum is maintained and that projects and initiatives are delivered on the ground. The specific actions that the Council intends to take forward in managing its own land and resources are set out in the Council’s [Biodiversity Strategy](#).

A draft version of this SPD was subject to public consultation in March 2018, and all comments were carefully considered and updates as necessary have been included in this final document.

4.3 Funding

The Peterborough Nature Partnership will wherever possible support the project lead organisations in seeking appropriate funding. Such funding may be available from a wide variety of sources including, but not limited to, the Community Infrastructure Levy (CIL), Specific Planning Contributions (via Section 106 Agreements), growth-related sources e.g. Local Nature Partnership, Agri-environment Schemes and Woodland Grant Schemes, The Health and Education Sectors, Lottery Funding and Charitable Trusts.

5 Integrating GI and Biodiversity with Sustainable Development

This section of the SPD describes how biodiversity and GI should be considered as part of all development proposals within the Peterborough Unitary Authority area.

The wider benefits of green infrastructure to society have been set out earlier in [section 1](#), however it is also important to recognise that biodiversity and GI can also bring many opportunities to individual development proposals; rather than acting as a constraint, well designed GI can provide a significant asset to new and existing communities, raise the value of new developments and may also help address local objections to schemes.

5.1 GI and Biodiversity Design Principles

Providing Habitat Connectivity

It is important that existing natural features such as hedgerows, woodlands and water courses are identified and then incorporated into development proposals at the outset, around which connectivity of habitats can be further enhanced, benefiting priority habitats and species.

Habitat fragmentation is a significant issue for wildlife; the transfer of species is necessary to maintain healthy, self-sustaining ecosystems. Poorly planned development which fails to take adequate account of the principles of habitat connectivity may result in significant impacts to priority habitats and species.

New developments can play a vital role in bridging these gaps in urban areas to the wider countryside. Those species which may particularly benefit from well designed and integrated GI provision include amphibians (e.g. common toad and great crested newt), reptiles (e.g. common lizard and grass snake) and mammals including water voles, hedgehogs and bats.

An interesting case study in Peterborough is the small adder population (UK Priority Species) which, due to isolation factors, has led to concerns over in-breeding and lack of genetic diversity amongst this local population. Conservation charity Froglife is currently carrying out research identify how to best address these concerns which is likely to include measures to better connect suitable adder habitats, enabling the population to spread further in the area.

Delivering Ecosystem Services

Ecosystem services are defined as services provided by the natural environment that benefit people. Some of these ecosystem services are well known including food, fibre and fuel provision and the cultural services that provide benefits to people through recreation and appreciation of nature. Other services provided by ecosystems are not so well known. These include the regulation of the climate, the purification of air and water, flood protection, soil formation and nutrient cycling.

Ecosystem services contribute to economic welfare in two ways – through contributions to the generation of income and wellbeing and through the prevention of damages that inflict costs on society. By focussing on valuing the benefits provided by ecosystems, it is increasingly recognised that investing in natural capital can make economic sense.

The National Planning Policy Framework states that the planning system should recognise the wider benefits of ecosystem services; the Council therefore wishes to see development proposals coming forward that recognise the value of ecosystem services to Peterborough, for example by providing suitable habitats that support pollinating insects (in line with the National Pollinator




Strategy) and addressing flood protection issues utilising natural habitat features. Further information about ecosystems services is in [Biodiversity 2020: A strategy for England's biodiversity and ecosystems services](#).

Adhering to the Ecological Mitigation Hierarchy

The Council expects all development proposals to adhere to the ecological mitigation hierarchy to help avoid or minimise any negative environmental impacts and to demonstrably achieve net biodiversity gain.

As set out in LP28 Biodiversity & Geological Conservation, all developments should avoid adverse impact on existing biodiversity and geodiversity features as a first principle. Where adverse impacts are unavoidable they must be adequately and proportionately mitigated. If full mitigation cannot be provided, compensation will be required as a last resort where there is no alternative. Please see **Table 1** below for further information.

Table 1: Applying the mitigation hierarchy:

<p>Information: It is essential that sufficient information is gathered at the outset to properly assess the impact of any given development on biodiversity. It is recommended that professional ecological expertise is appointed at start of concept design process for all major schemes and that the Cambridgeshire and Peterborough Environmental Records Centre www.cperc.org.uk is contacted at the earliest stage to ensure information about the site's biological resource is understood along with its potential effects and their significance.</p>

<p>Avoidance: Seek to avoid significant harm to wildlife species and habitats by selecting sites with less harmful impacts and identifying, retaining, buffering and connecting priority habitats at the outset of the development process.</p>

<p>Mitigation: Where significant harm cannot be wholly or partially avoided, minimise by design or by the use of effective mitigation measures e.g. carrying out vegetation clearance outside the bird nesting season and providing suitable alternative nesting features and feeding habitats, ensuring lighting schemes are carefully designed to minimise disturbance to bats and other nocturnal animals and providing gaps in fencing to enable hedgehogs to continue to roam freely.</p>

<p>Compensation: Where, despite whatever mitigation would be effective, there would still be significant residual harm, as a last resort, this must be properly compensated for by measures to provide for an equivalent value of biodiversity e.g. provision of new habitats such as native woodland, hedgerows or wildlife ponds, or translocation of habitats in certain circumstances.</p>

5.2 Recommended Approach to GI & Biodiversity for all Planning Applications

Table 2 (below) aims to provide clear guidance to applicants as to how the Council will expect a development proposal to consider biodiversity and GI at each stage during the development process, to ensure no net loss to biodiversity and achieving an overall biodiversity net gain. Following the steps set out in the table will ensure biodiversity and GI is properly assessed through the development management process.



Table 2: Recommended Approach to GI & Biodiversity for all Planning Applications

		Planning Stage
STEP 1	<ul style="list-style-type: none"> Seeking pre-application advice from the Local Planning Authority (LPA) and relevant agencies and organisations is strongly recommended. In addition it is advised that Natural England is contacted at the earliest stage possible where a development is likely to impact on a National or International Site as there may be a requirement to carry out an Appropriate Assessment under the Habitats Regulations. <p><i>This will ensure all potential ecological and/or GI issues and requirements are considered before a planning application is submitted and help prevent delays.</i></p>	Pre-application
STEP 2	<ul style="list-style-type: none"> Complete Biodiversity Checklist (required for all applications other than those creating no additional floor space) <p><i>Two versions available which apply to either Minor Proposals (up to 10 dwellings or less than 0.5 hectares and for non-residential development is less than 1000m² floor area or less than 1 hectare) or Major proposals (more than 10 dwellings or more than 0.5 hectares and for non-residential development is more than 1000m² floor area or more than 1 hectare).</i></p> <p><i>It should be possible for a non-specialist member of the public, planning agent or developer to complete the checklist.</i></p> <p><i>The Checklists can be found in Appendix 2 and 3 and are also available on the Council's website for major and minor proposals.</i></p> <p><i>Guidance on Specific Species (and Habitat) Questions can be found in Appendix 4.</i></p>	Pre-application
STEP 3	<ul style="list-style-type: none"> If the checklist identifies the potential presence of protected species and/or habitats, relevant ecological survey(s) must be undertaken by a suitably qualified ecologist in accordance with British Standard BS42020 and details of this must be submitted with your application. Provision of this information is a pre-requisite to the planning validation process. 	Pre-application

	<p>It is also recommended that professional ecological expertise is appointed at start of concept design process for all major schemes.</p> <p>The Chartered Institute of Ecology and Environmental Management (CIEEM) provides a professional directory of qualified, regulated ecologists which can be found at www.cieem.net/members</p> <p>This will help to avoid potentially costly delays at a later date and allow a planning decision to be made in a timely manner, which is beneficial for both the applicant and the planning authority. It is also important to consider that some species can only be surveyed at certain times of the year, for example bat roost emergence and activity surveys may only be carried out between May and September. Figure B in Appendix 4 outlines ecological survey seasons for the species identified in the biodiversity checklist. Failure to address this aspect at the onset of the application could result in costly time delays for the developer and may potentially result in the application being rejected at a later date.</p>	
<p>STEP 4</p> <p>161</p>	<ul style="list-style-type: none"> Carefully design scheme in context of wider landscape and ecological networks, ensuring development contributes towards enhancement of relevant strategic green infrastructure focus areas that the application site is located within i.e. the Nene Valley, Welland Valley, John Clare Country, the Fens or South Peterborough Green Parks. Alternatively the scheme may contribute towards the objectives for the City-wide area. Full details are provided in section 3. This may be achieved on site where appropriate or alternatively the use of CIL or S.106 contributions may be sought to assist in delivery of a nearby GI priority project identified in Appendix 1. <p>Plan green and hard infrastructure at same time, following the ecological mitigation hierarchy by retaining existing natural features such as hedgerows, woodlands and mature trees, ponds and water courses wherever possible, around which connectivity of habitats can be further enhanced, benefiting priority habitats and species.</p>	<p>Strategic Concept Design Stage</p>

<p>STEP 5</p>	<ul style="list-style-type: none"> Design a landscaping scheme taking account of local landscape character. Use native species of trees, shrubs and other plants. In addition to being attractive, they will benefit birds, bats and invertebrates, helping to deliver the objectives of the National Pollinators Strategy with trees also providing natural shade in urban developments. <p><i>Incorporating native wildflower species into seed mixes for areas of public open space is also extremely beneficial to invertebrates (as well as being visually attractive to new residents), and should be used wherever possible. Wild-flower grassland will usually require less frequent mowing and therefore can reduce management costs. Flora Locale’s website is a useful source of further information and also provides a link to approved UK wildflower seed suppliers: www.floralocale.org</i></p> <p><i>The RHS has produced the following list of pollinator-friendly plants: www.rhs.org.uk/science/pdf/conservation-and-biodiversity/wildlife/rhs_perfectforpollinators_plantlist-jan15</i></p>	<p>Detailed Technical Design Stage</p>
<p>STEP 6</p>	<ul style="list-style-type: none"> Provide Sustainable Drainage Systems (SuDS) with integral wildlife features. <p><i>The natural features offered by grass swales, infiltration strips, reed beds and ponds may provide habitats for amphibians, birds, mammals and invertebrates. The replacement of open drains and gully pots with surface features will also reduce the number of animals becoming trapped in drains.</i></p> <p><i>Further information may be found on the Council’s website: http://www.peterborough-suds.org/developers/ The RSPB has also produced a useful guide which provides more detailed SuDS information including the use of Green Roofs, Living Walls and Rain Gardens: www.rspb.org.uk/Images/SuDS_report_final_tcm9-338064.pdf</i></p> <p><i>Buglife has produced a best practice guide to creating green roofs for invertebrates: www.buglife.org.uk/sites/default/files/Creating%20Green%20Roofs%20for%20Invertebrates_Best%20practice%20guidance_2.pdf</i></p> <p><i>Green Roof Shelters Ltd provides good examples of integrating habitats within buildings: greenroofshelters.co.uk/</i></p>	<p>Detailed Technical Design Stage</p>

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<p>STEP 7</p>	<ul style="list-style-type: none"> Provide full range of breeding sites, shelter and year-round food resources for protected/ priority species as part of on-site ecological mitigation and enhancement measures. Full details and specifications may be provided as part of the application or, where appropriate, later at the detailed planning stage and secured by condition. <p><i>More detailed guidance is provided in Appendix 4 in relation to Birds, Bats, Water Voles, Amphibians, Reptiles, Badgers, Hedgehogs and other Mammals and Invertebrates.</i></p>	<p>Detailed Technical Design Stage</p>
<p>STEP 8</p>	<ul style="list-style-type: none"> Submit completed Biodiversity Checklist along with Ecological Impact Assessment Report and additional protected species survey reports as required. <p><i>Professional scrutiny from statutory and non-governmental bodies to ensure adequate ecological information has been provided; requests for further information from the applicant may be made should it not be considered adequate.</i></p> <p><i>Statutory obligations including having due regard to biodiversity conservation, must be fulfilled.</i></p> <p><i>Approved applications may be subject to relevant biodiversity planning conditions.</i></p> <p><i>To ensure biodiversity is protected during the construction phase, measures such Construction Environmental Management Plans (CEMP), use of Ecological Clerk of Works (ECW) and restrictions on timings of works may be required.</i></p>	<p>Validation & registration</p> <p>Decision-making</p> <p>Determination</p>
<p>STEP 9</p>	<ul style="list-style-type: none"> Post-development management and/ or monitoring of habitats and species should be carried out as appropriate (may be subject to specific conditions). <p><i>It is important to implement appropriate management of biodiversity features and habitats that are retained or created on site. These may include measures such reducing the frequency of grassland/ wild-flower meadow mowing, avoiding or reducing the use of pesticides and herbicides and retaining rough grassland buffer zones along field margins, hedges and ditches. Details of all such management measures should be clearly identified in an Ecological/ Landscape Management Plan.</i></p> <p><i>Ecological monitoring (and reporting) of natural green-spaces and associated species/ habitats for a period of five or more years may be required to ensure their satisfactory establishment.</i></p>	<p>Implementation</p>

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	<p><i>Options for long-term management of natural green-space may include entering into an agreement with conservation bodies such as the Wildlife Trust or Parish Council as an alternative to the land's adoption by the Local Authority.</i></p>	
<p>STEP 10 (optional)</p> <p>164</p>	<ul style="list-style-type: none"> • Peterborough City Council actively encourages all planning applicants to engage with the Developing with Nature Toolkit, which has been developed by the Natural Cambridgeshire Local Nature Partnership (LNP) and comprises of a simple list of “10 Things to do for Nature”. This is aimed at major developments, generally those that require Environmental Impact Assessment. <p><i>The Developing with Nature Toolkit does not replace planning policies seeking to protect the most important wildlife sites, legal requirements related to protected sites and species, or replace the established mitigation hierarchy. However, it does provide an approach, which if followed, enables developers and infrastructure providers to demonstrate their commitment to achieving a net biodiversity gain to the public, local authorities or shareholders.</i></p> <p><i>The Developing with Nature Toolkit provides the basis for a proposed “LNP Developing with Nature charter mark”. This will judge schemes at the design stage, during construction and post-construction, award the charter mark and monitor continued compliance with the charter mark requirements.</i></p> <p><i>By adhering to the guidance set out in this SPD it is envisaged that schemes which do so are highly likely to meet many of the criteria set out in the Toolkit and are therefore in a positive position to be awarded the Charter Mark.</i></p>	

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Appendix 1: Schedule of Priority Green infrastructure Projects

Strategic Outcome	Supporting Projects & Description & Project Number	Lead Organisation (& other Partners)	Costs S (<£100K) M (£100-500K) L (>£500K)	GI Benefits	Project Status (e.g. business case prepared/ approvals secured)	Potential funding source(s)
NENE VALLEY						
Promote as corridor for biodiversity and landscape enhancement and creation						
Delivery of WFD Urban Study Projects (Report identifies range of specific river enhancement projects e.g. creation of fish refuges, coir roll installation, back-water restoration)	1) Orton fish and eel pass: Installation of fish pass at Orton Lock to meet WFD requirements	EA (RRC)	L	Climate change Biodiversity	High deliverability subject to funding	CIL, EA
	2) Electric Cut Restoration Scheme: Enhance cut to benefit fish & other wildlife	RNRP (PCC, EA)	M	Climate change Biodiversity Healthy ecosystems	High deliverability: Business Case being prepared & permits in place	HLF Nenescape
	3) Flood-plain Forest Project: better connecting flood-plain & refuge pools to the main river (Orton Brook to Woodston Ponds)	NPT (EA, PCC)	M	Climate change Biodiversity Healthy ecosystems	No Business Case currently developed	POIS, EA
	4) Greening of Hard-engineered Banks: Installation of coir rolls etc. at key locations e.g. Fletton Quays	PCC, EA	M	Climate change Biodiversity Healthy ecosystems	High deliverability: Business Case being developed	POIS, S.106
	5) West Holmes Species-rich flood-plain meadow creation: Restoration of meadow plus protection & creation of marginal wetland habitat	NPT (WTBCN)	S	Climate change Biodiversity Healthy ecosystems	High deliverability: Business Case being developed by WTBCN	CS

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Strategic Outcome	Supporting Projects & Description & Project Number	Lead Organisation (& other Partners)	Costs S (<£100K) M (£100-500K) L (>£500K)	GI Benefits	Project Status (e.g. business case prepared/ approvals secured)	Potential funding source(s)
	6) Alwalton Lock/Castor Mill Fish & Eel Pass: Enhancement of former mill channel & creation of fish & eel passage.	NPT (PCC)	S	Climate change Biodiversity Healthy ecosystems	No Business Case currently developed	CIL, POIS
	7) Lynch Wood River Habitat Restoration Scheme: Develop detailed river management plan for this reach and implement quick-win opportunities	NPT (PCC)	S	Climate change Biodiversity Healthy ecosystems	No Business Case currently developed	CIL, POIS
	8) Thorpe Meadows Golf Course Backwater & Wetland habitat creation: Creation of more diverse riparian habitat including wet grassland, scrapes, pools, tree planting & SuDS wetlands	NPT (PCC)	M	Climate change Biodiversity Healthy ecosystems	No Business Case currently developed	CIL, POIS
Nene Valley Flood Meadow Restoration	9) Bringing Nature Closer Project: Restoration & enhancement of wet meadows within Nene Park	NPT (WTBCN)	S	Climate change Biodiversity Healthy ecosystems	High deliverability	Countryside Stewardship (CS) CIL, EA
Enhanced Public Access & Recreation Opportunities	10) Enhancing access & engagement with nature: developing opportunities in the city centre to Boardwalks area	NE (WTBCN/ PCC/ NPT/ Froglife)	S	Healthy lifestyles Active access Biodiversity	High deliverability	NE

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Strategic Outcome	Supporting Projects & Description & Project Number	Lead Organisation (& other Partners)	Costs S (<£100K) M (£100-500K) L (>£500K)	GI Benefits	Project Status (e.g. business case prepared/ approvals secured)	Potential funding source(s)
168	11) Cycle West Project: enhancing access west of Castor & A1	Cycle West Group (NPT/ PCC)	L	Healthy lifestyles Active access Climate change Economy & tourism	Scheme designed & costed, consultation on-going, planning app due to be submitted late 2016	HLF, CIL, S106
	12) Bluebell Wood Riverside Walk Access Enhancements: Path and boardwalk improvements to create a circular walk	NPT	M	Healthy lifestyles Active access	High deliverability	HLF, CIL
	13) Nene Park Access Improvements: improve condition, length & width of shared routes & the variety of promoted trails for different users	NPT, PCC (Sustrans, Cycle West, HE)	L	Healthy lifestyles Active access	Nene Park Master-plan due for adoption Sept 2016	HLF, CIL
	14) Growing Nene Park: increasing the quantity & quality of accessible green-space including improved access/ facilities at Thorpe Lea Meadows, Ferry Meadows & Castor	NPT (PCC, NE)	L	Climate change Biodiversity Healthy lifestyles Active access Economy & tourism	Nene Park Master-plan due for adoption Sept 2016	HLF, CIL, BL, S106

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Strategic Outcome	Supporting Projects & Description & Project Number	Lead Organisation (& other Partners)	Costs S (<£100K) M (£100-500K) L (>£500K)	GI Benefits	Project Status (e.g. business case prepared/ approvals secured)	Potential funding source(s)
WELLAND VALLEY						
Promote as corridor for biodiversity and landscape enhancement and creation						
Enhanced Habitat Connectivity	15) Maxey Cut Climate Change Resilience Project: Habitat protection and enhancement along Maxey Cut drain	EA	L	Climate change Biodiversity Healthy lifestyles Active access Economy & tourism	High deliverability	EA, CIL
	16) Werrington Brook Improvement Project	EA, PCC (PECT)	L	Climate change Biodiversity Healthy lifestyles Active access	High deliverability (Business case prepared)	EA, CIL
SOUTH PETERBOROUGH GREEN PARKS						
Enhance and extend the mosaic of lakes, water features and woodland within the former brick pits to the south and east of Peterborough						
Enhanced Public Access & Recreation Opportunities	17) Great Fen Access & Green Wheel Extension: Development of sustainable walking, cycling & equestrian access routes between Peterborough & the Great Fen	Hunts DC (WTBCN, PCC)	M	Healthy lifestyles Active access Economy & tourism	In Great Fen masterplan	CIL, Grants
	18) Fen Edge Long Distance Geology Route: Geology themed path	GeoPeterborough & Cambs Geology Group	S	Healthy lifestyles Active access Economy & tourism	TBD	

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Appendix 1: Schedule of Priority Green infrastructure Projects

Strategic Outcome	Supporting Projects & Description & Project Number	Lead Organisation (& other Partners)	Costs S (<£100K) M (£100-500K) L (>£500K)	GI Benefits	Project Status (e.g. business case prepared/ approvals secured)	Potential funding source(s)
Enhanced Habitat Connectivity	19) Fenland Habitat Connectivity Project: Promote the extension of the existing Fenland habitats at Woodwalton and Holme Fen throughout the Great Fen Project area and develop links northwards to Peterborough	Hunts DC (WTBCN, PCC)	M	Climate change Biodiversity	High deliverability (in Great Fen masterplan)	CIL, HLF
THE FENS						
Promote the protection and creation of traditional fen habitats including wetland, meadow, drainage ditches, wet woodland and seasonal flood meadows						
Targeted Habitat Enhancements	20) Water for Farming and Wildlife: Development of new 'storage wetlands' through partnership approach – Black Sluice/ Forty Foot pilot	Fens for the Future Partnership (EA, AW)	S	Climate change Biodiversity Healthy ecosystems Economy & tourism	High deliverability	CIL, EA
	21) RSPB Thorney Farmland Bird Friendly Zone: Landscape-scale conservation partnership project	RSPB	S	Biodiversity	High deliverability	Countryside Stewardship (CS)
	22) Fen Ditches Project: Survey to identify key areas for priority species & provision of advice	TBC (IDB, Sarah Lambert, WTBCN)	S	Biodiversity Healthy ecosystems	TBD	
	23) Barn Owl Recovery Programme: Monitoring of population and provision of nest sites across fens area of city	PCC	S	Biodiversity	High deliverability (funding secured)	CIL, S106

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Appendix 1: Schedule of Priority Green infrastructure Projects

Strategic Outcome	Supporting Projects & Description & Project Number	Lead Organisation (& other Partners)	Costs S (<£100K) M (£100-500K) L (>£500K)	GI Benefits	Project Status (e.g. business case prepared/ approvals secured)	Potential funding source(s)
Enhanced Public Access & Recreation Opportunities	24) Destination Fens: Development of a Fenland tourism strategy including Archaeology Theme	Fens for the Future Partnership	S	Economy & tourism Healthy lifestyles Active access	High deliverability	CIL, EA
CITY-WIDE AREA						
Enhanced connectivity and buffering of key urban & rural wildlife habitats & features						
Extension & Buffering of Core Ecological Sites	25) Dogsthorpe Star Pit SSSI extension/buffer: Provision of new strategic GI site as part of north east Peterborough urban expansion	PCC (Developers, WTBCN)	L	Biodiversity Healthy lifestyles Healthy ecosystems Economy & tourism Active access	TBD	CIL, S.106
Targeted Habitat Enhancements to Priority Habitats & Species	26) Strategic Species Habitat Connectivity Mapping Project: Identification of key habitats and opportunities for enhancements for key priority species including water voles, amphibians, reptiles & hedgehogs	Froglife (PCC, WTBCN, NE)	S	Climate change Biodiversity Healthy ecosystems	TBD	CIL, S.106
	27) Habitat opportunity mapping project looking at opportunities to create new habitat to enhance biodiversity, water quantity and air quality, plus looking at multiple benefits (Ecosystem Services) and highlighting the best sites to this take forward	PCC (RNRP)	S	Biodiversity Climate Change Healthy ecosystems	Project under way	PCC, NIA

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Appendix 1: Schedule of Priority Green infrastructure Projects

Strategic Outcome	Supporting Projects & Description & Project Number	Lead Organisation (& other Partners)	Costs S (<£100K) M (£100-500K) L (>£500K)	GI Benefits	Project Status (e.g. business case prepared/ approvals secured)	Potential funding source(s)
	28) Swifts Project: Survey & Promotion of swift conservation measures	RSPB (Action for Swifts, PCC)	S	Biodiversity	TBD	
	29) Ponds Project: Restoration & creation of network of amphibian breeding ponds across city	PCC (Froglife)	S	Climate change Biodiversity Healthy ecosystems	TBD	CIL, S.106
	30) Forest for Peterborough: Planting of 183,500 trees in Peterborough over 20 years, plus associated habitat creation	PECT (PCC)	M	Climate change Biodiversity Healthy lifestyles	High deliverability	CIL, S.106
	31) Brownfield Project: Identification, assessment and protection of key Open Mosaic Habitats across city	PCC (Buglife)	S	Biodiversity	TBD	CIL
Enhanced Habitat Connectivity	32) B-Lines: Promote flower-rich habitat creation or management within B-Lines network	Buglife	S	Biodiversity, Healthy ecosystems	TBD	HLF, CIL, local community trusts
Enhanced Public Access & Recreation Opportunities	33) Geotrails: Development & promotion of geology-focussed walking routes across city	GeoPeterborough	S	Healthy lifestyles Active access	High deliverability	

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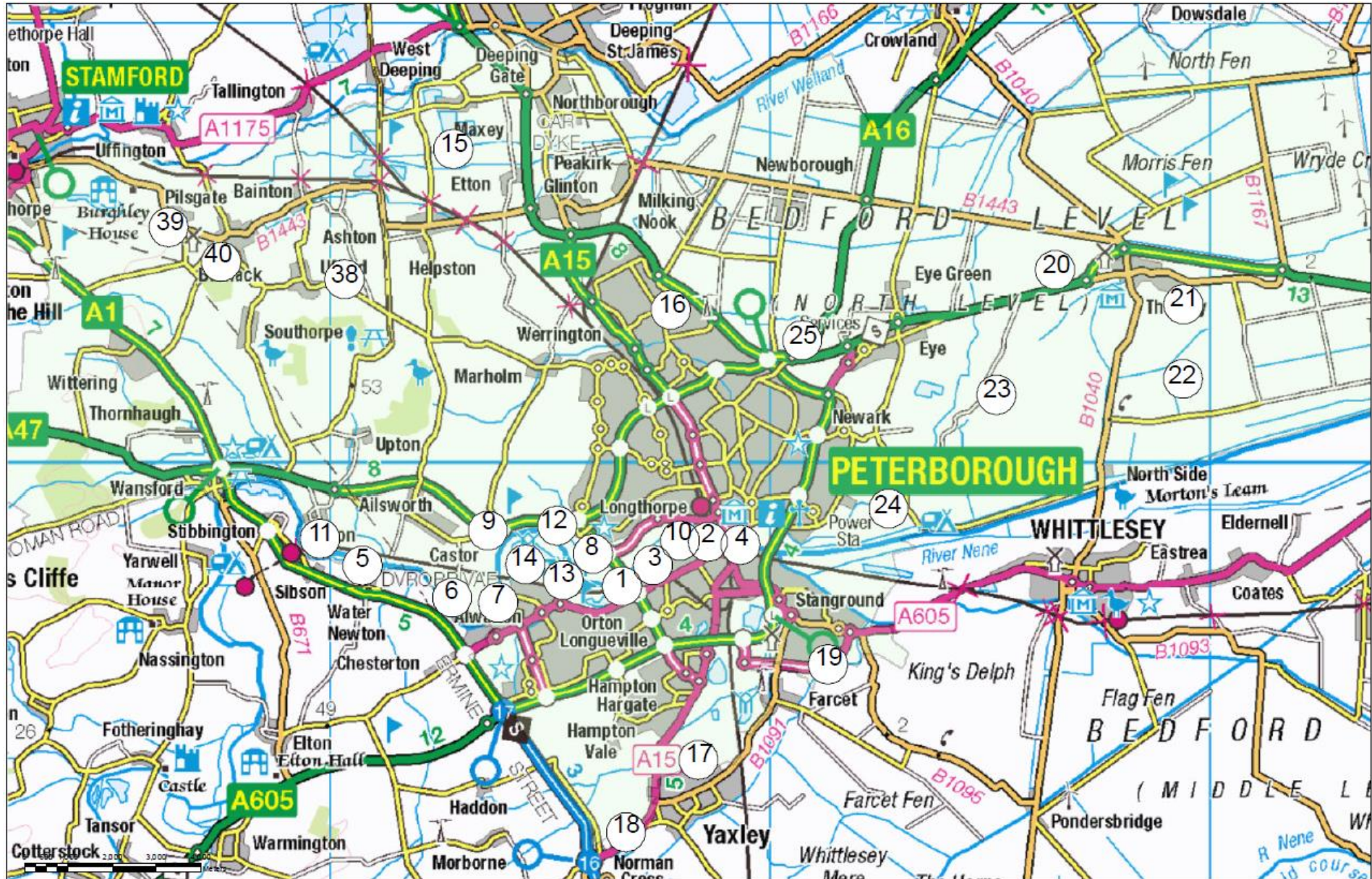
Appendix 1: Schedule of Priority Green infrastructure Projects

Strategic Outcome	Supporting Projects & Description & Project Number	Lead Organisation (& other Partners)	Costs S (<£100K) M (£100-500K) L (>£500K)	GI Benefits	Project Status (e.g. business case prepared/ approvals secured)	Potential funding source(s)
	34) Local Nature Reserves Project: Identification and designation of new LNR's to meet ANGSt standard	PCC	S	Healthy lifestyles Active access Biodiversity	High deliverability	CIL, S.106
	35) Green Wheel Cycle Network: Identify & deliver enhancements to Green Wheel network	(BHS, PCC)	M	Healthy lifestyles Active access	TBD	CIL, S.106
Establishing Range of Community Gardens Across City	36) Community Gardens Project: Various growing areas & improved access at Ferndale Way, Welland	PECT	M	Biodiversity Healthy lifestyles Active access	Medium deliverability: outline project only	POIS, Awards for All, Postcode lottery
Promoting Traditional Wildlife Conservation & Heritage Skills	37) Heritage Skills Project: Creating multiple hubs for teaching heritage skills across city	PECT (Vivacity, Sacrewell, Showground, NPT)	M	Biodiversity Healthy lifestyles Active access Healthy ecosystems Landscape character	High deliverability	HLF
JOHN CLARE COUNTRY						
Restoration & creation of grassland & woodland habitats including road verges, calcareous meadows, hedgerows and restored quarries						
Limestone Grassland Habitat Enhancement & Creation	38) Living Landscapes Project: Limestone grassland habitat survey, restoration and creation and woodland buffering & linkage	WTBCN (Langdyke Countryside Trust)	S	Climate change Biodiversity Healthy lifestyles Healthy ecosystems Economy & tourism	TBD	CIL, HLF, Countryside Stewardship (CS)

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Appendix 1: Schedule of Priority Green infrastructure Projects

Strategic Outcome	Supporting Projects & Description & Project Number	Lead Organisation (& other Partners)	Costs S (<£100K) M (£100-500K) L (>£500K)	GI Benefits	Project Status (e.g. business case prepared/ approvals secured)	Potential funding source(s)
	39) Limestone Grassland Verges Project: Trialling of restoration techniques incl. soil stripping, alterations to mowing regimes etc.	Barnack Wildlife Group (PCC)	S	Climate change Biodiversity Healthy ecosystems	TBD	
Extension & Buffering of Core Ecological Sites	40) Barnack Hills and Holes SAC extension/buffer: Provision of additional accessible GI to address increased recreational pressure on SAC	NE	M / L	Climate change Biodiversity Healthy lifestyles Healthy ecosystems Economy & tourism	TBD	CIL, HLF, Countryside Stewardship (CS)



Green Infrastructure Project Locations (please note projects 26-37 are city-wide with no fixed location)

Scale 1:75,000
Print Date: 20/02/2019

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Appendix 2:

Validation of Planning Applications

PLANNING APPLICATION REQUIREMENTS (LOCAL)

***FOR BIODIVERSITY CONSERVATION SURVEY
AND REPORT***

**THE PETERBOROUGH BIODIVERSITY CHECKLIST
(MINOR PROPOSALS)**

In Accordance With

The Town and Country Planning Development Management Procedure Order 2010

Revised July 2013

Biodiversity Checklist to accompany planning applications

Please refer to the guidance notes which specify the types of application which must be accompanied by this checklist. Where identified as required any surveys must also accompany an application.

Question 1: Pre-existing knowledge

To the best of your knowledge are any protected species such as, but not limited to, bats, specially protected birds such as barn owl, great crested newts, reptiles, water voles, badgers or otters present within the site or would be affected by the proposal?

Yes/ No

If Yes, please provide further details:

Question 2: Water Voles

Does the proposal affect or is it within 5m of a river, stream, ditch, canal or lake?

Yes/No

Question 3: Great Crested Newts

Is the proposal within 100m of a pond (excluding small garden ponds under 25m² or heavily fish-stocked ponds)? If so will the building and associated working area of the development directly affect any rubble or log piles, scrub, hedgerows or long grassland?

Yes/No

Question 4: Bats

Does the proposed development constitute or include the modification conversion, demolition or removal of buildings and structures (especially roof voids) involving the following:

- All agricultural buildings (e.g. farmhouses and barns) particularly of traditional brick or stone construction and/or with exposed wooden beams greater than 20cm thick?
- All buildings with weather boarding and/or hanging tiles that are within 200m of woodland and/or water?
- Pre-1960 detached buildings and structures within 200m of woodland and/or water?
- Pre-1914 buildings within 400m of woodland and/or water?
- Pre-1914 buildings with gable ends or slate roofs, regardless of location?
- All tunnels, kilns, ice-houses, adits, military fortifications, air raid shelters, cellars and similar underground ducts and structures?
- Proposals affecting gravel pits or quarries and natural cliff faces and rock outcrops with crevices or caves?
- All bridge structures, aqueducts and viaducts (especially over water and wet ground)?
- Lighting of churches and listed buildings or flood lighting of green space within 50m of woodland, water, field hedgerows or lines of trees with obvious connectivity to woodland or water?
- Affecting woodland, or field hedgerows and/or lines of trees especially those with obvious connectivity to woodland or water bodies?
- Proposals affecting or within 200*m of rivers, streams, canals, lakes, or other aquatic habitats.
- Buildings and walls with thick, dense ivy covering?
- Tall walls (higher than 2 m) with crevices present?

- Proposed tree work (felling or lopping) and/or development affecting?
 - old and veteran trees, and trees that are older than 100 years?
 - trees with obvious holes, cracks or cavities?
 - trees with a girth greater than 1m at chest height?
 - trees with substantial coverings of ivy?

Yes/No

Question 5: Barn owls

- Does the proposal include modification, conversion, demolition or removal of any agricultural buildings (e.g. farmhouses and barns)?

Yes/No

Question 6: Badgers and/ or Reptiles

Does the building and associated working area of your proposal directly affect any derelict (brown-field) land, allotments, woodland or linear features e.g. hedgerows, ditches or rows of trees?

Yes/No

Further action for questions 2- 6:

Where a positive answer is given to any of questions 2 to 6, relevant protected species survey work should be carried out by a suitably experienced ecologist and a report must accompany the planning application.

Alternatively you may provide evidence (e.g. statement from a suitably qualified ecologist) to demonstrate that no priority species or habitats are likely to be impacted on by your proposals to rule out the need for further survey work.

Details of person responsible for completing checklist

Name: _____ **Relationship to proposal:**
(E.g. agent, applicant, ecological consultant).

Declaration:

Being familiar with the proposal and site in question the information supplied above is correct to the best of my knowledge.

Signed: _____

Date: _____

Appendix 3:

Validation of Planning Applications

PLANNING APPLICATION REQUIREMENTS (LOCAL)

**FOR BIODIVERSITY CONSERVATION SURVEY
AND REPORT**

**THE PETERBOROUGH BIODIVERSITY CHECKLIST
(MAJOR PROPOSALS INCLUDING EIA DEVELOPMENT)**

In Accordance With

The Town and Country Planning Development Management Procedure Order 2010

Revised July 2013

Biodiversity Checklist to accompany planning applications

Please refer to the guidance notes which specify the types of application which must be accompanied by this checklist. Where identified as required any surveys must also accompany an application.

Question 1: Pre-existing knowledge

To the best of your knowledge are any protected species such as, but not limited to, bats, specially protected birds such as barn owl or kingfisher, great crested newts, reptiles, water voles, badgers or otters present within the site or would be affected by the proposal?

Yes/No

If Yes, please provide further details:

Question 2: Water Voles

Does the proposal affect or is it within 5m of a river, stream, ditch, canal or lake?

Yes/No

Question 3: Great Crested Newts

Is the proposal within 500m of a pond? If so will the building and associated working area of the development directly affect any rubble or log piles, trees, scrub, hedgerows or long grassland?

Yes/No

Question 4: Bats

Does the proposed development constitute or include the modification conversion, demolition or removal of buildings and structures (especially roof voids) involving the following:

- All agricultural buildings (e.g. farmhouses and barns) particularly of traditional brick or stone construction and/or with exposed wooden beams greater than 20cm thick?
- All buildings with weather boarding and/or hanging tiles that are within 200m of woodland and/or water?
- Pre-1960 detached buildings and structures within 200m of woodland and/or water?
- Pre-1914 buildings within 400m of woodland and/or water?
- Pre-1914 buildings with gable ends or slate roofs, regardless of location?
- All tunnels, kilns, ice-houses, adits, military fortifications, air raid shelters, cellars and similar underground ducts and structures?
- Proposals affecting gravel pits or quarries and natural cliff faces and rock outcrops with crevices or caves?
- All bridge structures, aqueducts and viaducts (especially over water and wet ground)?
- Lighting of churches and listed buildings or flood lighting of green space within 50m of woodland, water, field hedgerows or lines of trees with obvious connectivity to woodland or water?
- Affecting woodland, or field hedgerows and/or lines of trees especially those with obvious connectivity to woodland or water bodies?
- Proposals affecting or within 200*m of rivers, streams, canals, lakes, or other aquatic habitats.
- Buildings and walls with thick, dense ivy covering?
- Tall walls (higher than 2 m) with crevices present?
- Proposed tree work (felling or lopping) and/or development affecting?

- old and veteran trees, and trees that are older than 100 years?
- trees with obvious holes, cracks or cavities?
- trees with a girth greater than 1m at chest height?
- trees with substantial coverings of ivy?

Yes/No

Question 5: Birds

Is the proposal likely to affect any of the following protected bird species:

- 1) Those listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended)?
http://jncc.defra.gov.uk/pdf/waca1981_schedule1.pdf
- 2) Those listed as Species of Principle Importance in England under S41 of the NERC Act?
<http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habandspeciesimportance.aspx>
- 3) Those associated with the Nene Washes (or other National or European designated sites if relevant)? <http://jncc.defra.gov.uk/pdf/SPA/UK9008031.pdf>

Yes/No

Question 6: Badgers and/ or Reptiles

Does the building and associated working area of your proposal directly affect any derelict (brown-field) land, allotments, woodland or linear features e.g. hedgerows, ditches or rows of trees?

Yes/No

Further action for questions 2-6:

Where a positive answer is given to any of questions 2 to 6, relevant protected species survey work should be carried out by a suitably experienced ecologist and a report must accompany the planning application.

Alternatively you may provide evidence (e.g. statement from a suitably qualified ecologist) to demonstrate that no priority species or habitats are likely to be impacted on by your proposals to rule out the need for further survey work.

Question 7: Nationally and Locally important wildlife sites

- Will the proposal impact (directly or indirectly) on a Site of Special Scientific Interest (SSSI), Regionally Important Geological Site (RIGS) or County Wildlife Site (CWS)?

Yes/No

If Yes, please provide further evidence with your planning submission including the amount (m²) of affected sites. Please also state the relevant section within your Environmental Statement where this information may be found:

Please note, answers to Questions 8 and 9 are only required for EIA Development

Question 8: Habitats of Principle Importance for Conservation

Will your proposal result in a net gain in Priority Habitats?

Yes/ No

Please state the relevant section within your Environmental Statement where this information may be found or alternatively please complete the following table:

Amount (Ha) of Habitats of Principle Importance for Conservation created and/or enhanced which can be attributed to proposed development

Local BAP Habitat	Existing	Proposed habitat (ha or linear metres)				Comments
	Existing habitat (Ha or linear m)	Existing habitat Loss	Habitat retained (current condition)	Habitat retained & enhanced	New habitat created	
<u>Arable Field Margins</u>	0	0	0	0	0	
<u>Fenland Drainage Ditches</u>	0	0	0	0	0	
<u>Fens</u>	0	0	0	0	0	
<u>Floodplain and Grazing Marsh</u>	0	0	0	0	0	
<u>Hedgerows</u>	0	0	0	0	0	
<u>Lowland Chalk Grassland</u>	0	0	0	0	0	
<u>Neutral Grassland</u>	0	0	0	0	0	
Open mosaic habitats on previously developed land	0	0	0	0	0	
<u>Ponds, Lakes and Standing Water</u>	0	0	0	0	0	
<u>Reedbeds</u>	0	0	0	0	0	
<u>Rivers and Streams</u>	0	0	0	0	0	
<u>Traditional Orchards</u>	0	0	0	0	0	
<u>Veteran Trees and Parklands</u>	0	0	0	0	0	
<u>Wet Woodland</u>	0	0	0	0	0	
<u>Lowland Mixed Deciduous Woodland</u>	0	0	0	0	0	
TOTALS	0	0	0	0	ha (+ m)	

Question 9: Green Infrastructure (GI)**Will your proposal result in a net gain in GI (excluding Priority Habitats)****Yes/ No**

Please also state the relevant section within your Environmental Statement where this information may be found or alternatively please complete the following table:

Amount and quality of green infrastructure attributed to proposed development

Green Infrastructure (GI) Types	Proposed Green Infrastructure (ha or linear metres or number if mature trees)					Comments
	Existing GI (Ha or linear metres)	Existing habitat Loss	Habitat retained (current condition)	Habitat retained & enhanced	New habitat created	
Individual Broadleaf and/ or coniferous trees	0	0	0	0	0	
Non-BAP Grassland	0	0	0	0	0	
Non-BAP Wetland Habitat	0	0	0	0	0	
Non-BAP Woodland	0	0	0	0	0	
Other	0	0	0	0	0	
	0	0	0	0	0	
TOTALS	0	0	0	0	Ha (+ no. trees)	

Impact on Public Rights of Way Network**Will the proposal permanently affect the public rights of way network?**

PROW Network – Adversely Affected (Loss) (Length - linear metres)	PROW Network – Adversely Affected (Qualitative loss)	PROW Network – Enhancement (Gain) (Length - linear metres)	PROW Network – Enhancement (Qualitative Improvements)
<u>e.g. x m of footpath to be lost.</u>	<u>e.g. x m of bridleway to be downgraded to footpath status.</u>	<u>e.g. Additional x m of footpath - permissive right of way.</u>	<u>e.g. x m of existing Green Wheel route to be upgraded to bridleway status</u>

Details of person responsible for completing checklist**Name:****Relationship to proposal:**

(E.g. agent, applicant, ecological consultant).

Declaration:

Being familiar with the proposal and site in question the information supplied above is correct to the best of my knowledge.

Signed:**Date:**

Appendix 4: Species-specific Advice incorporating Biodiversity Checklist Guidance Notes

Pre-existing knowledge (Question 1 in Biodiversity Checklist)

There may already be a known wildlife interest on a site even without specific survey work being carried out. This could be through your own involvement with a site or it may have been notified to you by neighbouring landowners, the Local Planning Authority (LPA), and/or by Natural England, the Environment Agency or other nature conservation organisations. Where this is the case, even if not indicated by subsequent questions, further professional survey work should be carried out in accordance with the process outlined below.

It may also be useful in this respect for a data search to be carried out via the Cambridgeshire and Peterborough Environmental Records Centre: www.cperc.org.uk

Water Voles (Question 2 in Biodiversity Checklist)

Water voles are present throughout the authority area, but tend to be confined to watercourses, drains and aquatic features that hold water. Important habitat for water voles extends up to 5 metres from the top of the bank of a ditch or watercourse. This includes both habitat that the water voles themselves will utilise and also a sufficient buffer between the water vole habitat and development activity/ nearby activity, operation of machinery etc.

Surveys should be carried out in accordance with the standards set out in the Water Vole Conservation Handbook 3rd Edition (Strachan and Moorhouse 2011).

Watercourses are less likely to be suitable for water voles if they are dry for much of the year or have been concrete lined or culverted for the length of watercourse that relates to the proposal.

Further information about water voles can be found on the GOV.UK website:
<https://www.gov.uk/water-voles-protection-surveys-and-licences>

Amphibians

Great crested newts, smooth newts, common toads and frogs can all be found throughout the Peterborough area. Amphibians have declined through habitat loss and pollution. All native species receive legal protection under the Wildlife and Countryside Act (as amended) with the great crested newt also receiving full protection by the Habitat Regulations and the Common Toad being a UK Priority Species of Conservation Concern.

Habitat creation and enhancement

Wildlife ponds are an excellent way of enhancing local wildlife and the Council encourages their incorporation into development sites. Ponds should be particularly considered when the proposed development is near known amphibian populations such as toads and/ or great crested newts.

Aquatic plants need to be carefully considered, based on the size of the pond – for example, Common Reed *Phragmites australis* should only be introduced to larger ponds as it can quickly spread. Your ecologist should be able to advise further on suitable plants, landscaping and management for any ponds on site.

Conservation charity Froglife provides plenty of useful information regarding pond creation and creating amphibian friendly habitats:

www.froglife.org/what-we-do/just-add-water

Great Crested Newts (Question 3 in Biodiversity Checklist)

This species will move some distance from their breeding ponds, which they only visit for a few weeks every year. Suitable habitat for newts includes: ponds, rubble and log piles, trees, scrub, hedgerows and long/ rough grassland. A pond that dries out occasionally, but not constantly, can be ideal for great crested newts as this will eradicate fish but not the newts which can survive out of water. Newts can live for several years, therefore if a pond has recently been filled in; it is possible that a population of great crested newts may still be present. Stationary ditches can also provide suitable breeding habitat for great crested newts.

Further guidance and survey requirements can be found on the Gov.uk website and in the Great Crested Newt Conservation Handbook using the following links:

<https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects>

http://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf

Bats (Question 4 in Biodiversity Checklist)

All bats and their roosts are afforded strong legal protection by both domestic and international legislation. Deliberate or reckless disturbance to bats and their roosts is a criminal offence and licences must be obtained when undertaking activities which may affect them.

Ten species of bat have been recorded in the Peterborough area including the Common Pipistrelle, Brown Long-eared bat and the rarer Barbastelle bat, each of which have their own preferred habitat and roosting behaviour. This means that bats can be found in a wide variety of situations (with those listed in question 4 of the checklist being the most likely). This is made more likely if a proposal is in close proximity to foraging habitats which are particularly favourable for bats such as wetland and woodland habitats.

Further Sources of Advice

A useful guide for home owners commissioning bat surveys has been produced by CIEEM:

www.cieem.net/data/files/Publications/Bat_Survey_Guidelines_for_UK_Home_Owners.pdf

The Bat Conservation Trust website provides more information on bats including specific species requirements, as well as additional information on how to incorporate bats into buildings plus guidance regarding bats and artificial lighting:

www.bats.org.uk/pages/uk_bats.html

www.bats.org.uk/pages/accommodating_bats_in_buildings.html

www.bats.org.uk/pages/bats_and_lighting.html

Further guidance and survey requirements can be found on the Gov.uk website, Bat Conservation Trust Survey Guidelines and Natural England Bat Mitigation Guidelines using the following links:

The BCT bat survey guidelines: <http://www.bats.org.uk/pages/guidanceforprofessionals.html>

Natural England Publication “Bat Mitigation Guidelines”:

<http://webarchive.nationalarchives.gov.uk/20150429000001/http://publications.naturalengland.org.uk/publication/69046>

Natural England Publication “Bats in Buildings”:

<http://webarchive.nationalarchives.gov.uk/20150429000001/http://publications.naturalengland.org.uk/publication/68027>

<https://www.gov.uk/guidance/bats-protection-surveys-and-licences>

Bats and buildings

Many bat species make use of buildings, particularly near areas of open space or in the countryside. There are many ways of enhancing new buildings for bats, including provision of the following:

- Bat bricks; used to create hibernating crevices on the inside of structures
- Purpose built bat lofts
- Specially designed access bricks and roof tiles
- External bat boxes placed on buildings or trees

These can easily be incorporated into new buildings without the need for major changes to plans and with no negative effects on the aesthetics of the design. These plans should be included in the architect's brief.

Bat box installation guidelines

- Temperature is a critical factor to ensure bat box success; Boxes should face south or south east to obtain maximum sunlight exposure.
- Boxes should be specific to species present in the area (CPERC can provide this information).
- The ideal location for mounting bat boxes is on mature trees in an open area. If the tree is suitable, aim to install three per tree as bats move between boxes as temperatures change during the seasons (facing north, south-east and south west). Buildings can also be used – ideally placed under eaves.
- If boxes are found to remain unoccupied after three years, they should be re-located.
- Boxes should be placed at least 5m above the ground. Bats need a clear swoop zone to enter and exit their roosts therefore access to the box should be unobstructed so as to provide a clear flight path and ensure there is a clear drop below the box.
- Boxes should be attached with wire around the trunk or branch (nails should be avoided). To prevent damage to the tree, wrap a piece of hose or a section of car tyre around the wire.
- Boxes should be located within 10-30m of natural linear features e.g. hedgerows or tree lines.
- Do not mount boxes within close vicinity of strong lights (see below for more information)

Birds (Question 5 in Biodiversity Checklist)

In the UK, all wild birds, their nests and their eggs are protected by law under the Wildlife and Countryside Act (as amended). Certain birds, including Barn owls and Kingfishers, are also listed on Schedule 1 of this Act and are afforded further protection from disturbance whilst breeding. In addition, the 2009 EU Birds Directive seeks to protect, manage and regulate all wild birds and their associated habitats. Habitat loss and degradation have been identified as the main factors causing declines in wild bird populations.

Breeding Birds

There are very many different species of birds that can be found in the Peterborough area, each of which have their own preferred habitat and specialised behaviour. For these reasons birds can be found in almost any situation. The main sorts of proposals that will particularly affect birds in general and birds of specific conservation concern include removal/ cutting of trees and hedgerows, as well as building demolition and roofing works.

Impact on nesting birds can generally be avoided by either:

- Commencing works outside of the bird nesting season, generally March to August,
- Inside of the nesting season having a suitably qualified ecologist undertake a survey for nesting birds and only undertake works in parts where nesting birds have been confirmed to not be present.

For smaller sites this can generally be secured through the use of a planning condition, however for larger sites/major applications it can be appropriate for a survey to be undertaken to establish what the bird interest of a site consists of. This can include both bird nesting and over wintering. Such a survey can often be used to inform mitigation measures, such as the erection of suitable alternative nesting, landscaping or the programming of works. If a survey is required to accompany a planning application is highly subjective and will depend upon:

- The size and complexity of the site.
- The type of birds that may be likely to be found within the site or disturbed by the proposal.

Further information about birds and bird surveys can be found via the following links:

- Royal Society for the Protection of Birds: <http://www.rspb.org.uk/>
- The British Trust for Ornithology: <http://www.bto.org/>

Birds and buildings

Species that rely on buildings, eaves and ledges are increasingly under threat. Modern housing is generally designed to be weather tight and well pointed, so can easily exclude birds. Careful conversion or simple design changes in new buildings can easily make provision for these species, particularly in eaves or outbuildings. Others are less specific in their nesting choice and can be more easily catered for with a wide range of external bird boxes. Be sure to take key local bird populations into account when planning enhancements for birds in new developments.

Bird Nest Box Installation Guidelines

- Position boxes 2-5 metres high on trees or walls, out of reach of predators such as cats.
- Attach boxes using wire around tree trunks or branches (nails should be avoided). To prevent damage to the tree, wrap a piece of hose or section of car tyre around the wire.
- Select suitable box designs appropriate to local area to ensure relevant priority species are targeted. Please contact CPERC for further information: www.cperc.org.uk
- Position boxes to face between north or eastwards in sheltered positions which avoid full sun.
- Position boxes tilted slightly forwards to ensure that rain will bounce clear.
- Install one box per tree due to the territorial nature of some bird species, with the exception of colonial species such as house sparrows, swifts and starlings which prefer to have their boxes placed closely to each other.
- Ensure access is available for maintenance of boxes which should be cleaned out between August and January after birds have flown the nest.
- Use boxes constructed of materials such as “woodcrete” or integral brick designs where possible which are longer lasting and blend into building materials better.

House Martins

House martins will tend to use eaves in which to build their own nests; however artificial nests can also be provided which are readily available and easy to install. Ensure these are located in an area where droppings will not fall on windows, doors or paths below.

Swifts

Swifts are entirely dependent upon buildings for nesting, and will ideally nest above 4m in areas with an unobstructed flight path. Incorporating ‘letterbox’ slots (measuring 65mm x 25-30mm) into eaves allows swifts to access and nest on top of the closed cavity. Specialised bricks and nest boxes can also be integrated into the building design. They should be installed in straight lines under eaves or at the top of the vertical wall away from windows.

If the development site is close to a known population of swifts or within their natural habitat range, it is important to include enhancements for them. Your ecologist will be able to advise you as to the necessity of catering for swifts. Multiple boxes can be placed on individual buildings – as a rough guide, individual buildings could be expected to hold the following number of swift boxes:

- Individual houses: 1-4 boxes per house
- Small block of flats: 4-10 boxes per building
- Schools/apartments/hospitals/warehouses: 10-20 boxes per building

The following websites provide useful information on how to cater for swifts in new buildings:

www.swift-conservation.org
www.concernforswifts.com

Swallows

Swallow nests are normally built inside a building upon a beam or ledge, typically no higher than 3 metres. Ideal nest sites are dry, dimly lit, secure and close to plentiful sources of insects. Artificial nests and nest platforms may be provided in new developments – these should be fixed out of the reach of cats. Incorporating H: 50mm x W: 70mm openings into garages and outbuildings allow access for swallows. Be aware that droppings could become a nuisance so site nests in undisturbed areas or place a board or bag beneath nesting areas to catch droppings.

Starlings and House Sparrows

Both of these birds are priority species and IUCN red listed species and are highly dependent on buildings for nesting. Provision of appropriately sized holes in eaves (32mm for sparrows, 45mm for starlings) allows access for nesting. Ensure there is no access to the roof void.

Barn owls

Due to many years of active conservation and an annual monitoring programme, Peterborough is now an important area for this species. Barn owls can be found in close proximity to humans, however as they are most active at dusk and dawn it is not unusual for those living close to an occupied site to be unaware of this.

Barn owls will make use of farm buildings, dovecotes, church towers and bale stacks as well as unused buildings. Trees with hollows/cavities of a sufficient size are also used for nesting and roosting. While most eggs are laid during April and May Barn owls can breed at any time of year and can have a second brood later in the season in particularly good years.

Barn owls are most likely to be affected in the situations outlined in question 5 but are less likely to be present in the following situations:

- Structures/disused buildings without roofs.
- Weather tight structures that consequently do not have suitable access points for barn owls.

However, Barn Owls can be affected from disturbance if they are breeding in proximity to a proposed development site so that surveys for this species and any proposed mitigation are needed to take this into account.

Specific information about Barn Owls in Peterborough can be obtained from the Council's Wildlife Officer and via Natural England;

<http://webarchive.nationalarchives.gov.uk/20150429000001/http://publications.naturalengland.org.uk/publication/76007>

Enhancements for Barn owls

Where a new agricultural building or new development is being erected adjacent to habitat suitable for Barn Owls, the Council strongly encourages provision to be made for this species. Owl lofts can be incorporated into roof designs or nest boxes installed on nearby trees or poles in areas where future development is unlikely to occur.

Useful links:

Barn Owl Conservation Network: www.bocn.org

Barn Owl Trust: www.barnowltrust.org.uk

Reptiles (Question 6 in Biodiversity checklist)

Reptiles in the UK have declined through habitat loss and degradation. All native reptiles receive legal protection under the Wildlife and Countryside Act (as amended). Reptile species are found throughout the Peterborough area and include grass snake, common lizard and slow worm. Adders are also very rarely found in the west of the district. These species tend to be found in association with the following habitat features:

- South or west facing banks tend to favour reptiles as they are warmer and suit the reptiles' requirement to bask to warm up.
- Slow worms can tend to be found in woodland and established grassland such as old allotment sites.
- Reptiles may take shelter in piles of wood and or rubble piles that have generally lain undisturbed for some time. These piles may have become partially vegetated.
- Piles of decomposing plant material such as compost and manure heaps; woodchip and sawdust piles may be used by grass snakes for egg laying. Slow worms may take shelter in these sorts of features.
- Wetland features such as rivers, streams, ditches, ponds or lakes may be particularly good habitat for grass snakes.
- In farmland lizards and snakes can use linear habitats such as hedges and/or grass field margins.
- Derelict sites with deteriorating walls with holes beneath can provide good habitat for reptiles especially when connected to grassy areas.

Reptile habitat creation and enhancement

Creation of hibernacula such as stone or log piles, where reptiles such as common lizards can shelter inside or sunbathe on top, are valuable enhancement additions and should be included when creating reptile habitat.

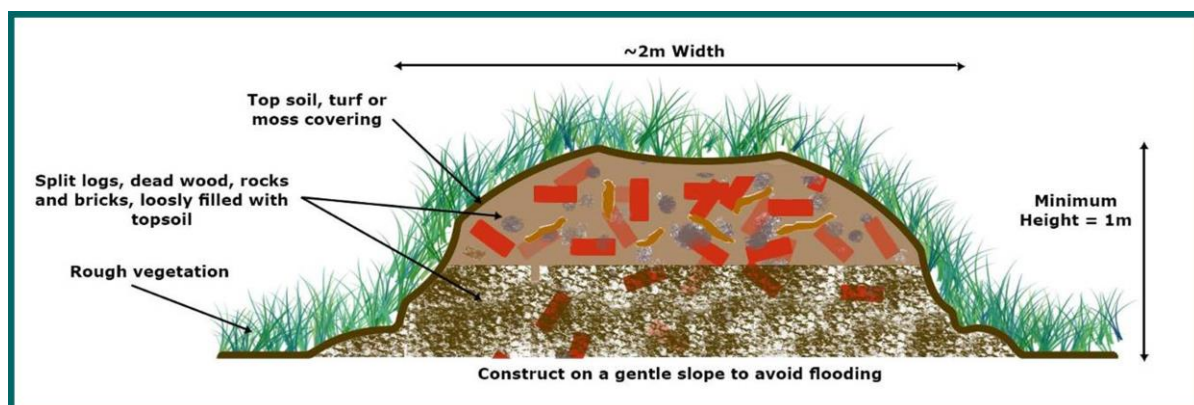


Figure A: An example of reptile hibernacula

Reptile surveys should be carried out in accordance with the standards outlined in Froglife Advice Sheet 10. Further information about reptiles can be obtained via the following links:

- Froglife Advice Sheets: http://www.devon.gov.uk/froglife_advice_sheet_10_-_reptile_surveys.pdf
- Natural England, Reptiles, Guidelines for Developers: <http://webarchive.nationalarchives.gov.uk/20150429000001/http://publications.natureland.org.uk/publication/76006>
- Froglife Advice: www.froglife.org/amphibians-and-reptiles/reptiles

Badgers (Question 6 in Biodiversity Checklist)

Badgers can be found throughout the Peterborough area and while badger setts more likely to be found in the situations outlined in question 6 they can also be found in almost any situation including within farmed fields, and in the banks of drainage ditches. A development may be capable of impacting on a badger sett that is within 30 metres of the edge of a construction site.

If badgers use a proposal site to forage for food or to move to foraging areas it can still be important to consider badgers at the design, implementation and landscaping phases. If you are in any doubt with respect to if a badger sett may be present on the site or badgers affected by a proposal professional advice should be sought at the earliest stage of planning the proposed development and a survey undertaken by a suitably qualified ecologist.

Further information about badgers can be found at:

- Natural England Publication “Badgers and Development”
<http://webarchive.nationalarchives.gov.uk/20150429000001/http://publications.naturalengland.org.uk/publication/73034>

The Mammal Society: www.mammal.org.uk/sites/default/files/factsheets/badger_complete.pdf

Hedgehogs

Hedgehogs are a UK Biodiversity Action Plan priority species and listed as a Species of Principle Importance under s41 of the NERC Act 2006. It is therefore recommended that any potential nesting areas be hand-searched by an experienced mammalogist prior to site clearance.

Simple measures, such as lifting fences 150mm off the ground to allow garden access for hedgehogs and provision of dropped kerbs to allow small animals movement, should be also be considered.

Further information about hedgehogs can be found at: www.wildlifetrusts.org/hedgehogs

Other Mammals

Mammals including Foxes and Rabbits are protected under the Wild Mammals Act 1996 from crushing, asphyxiation etc. It is therefore important if animals are present on a development site (e.g. young are in the tunnel/ fox earth) then the tunnels/ earth should be adequately protected until all animals have safely left the site. If no young are found, then adult foxes may be excluded from the tunnels and prevented from returning.

As a general measure for all mammals, it is recommended that construction trenches are covered overnight or a means of escape provided for any mammals that may have become trapped.

Invertebrates

Invertebrate habitats can easily be incorporated into walls, gardens and green spaces, or protected simply by maintaining existing natural features such as dead wood piles, sandy banks, ponds, hedgerows and native shrubs.

Incorporating invertebrate friendly planting schemes into development plans – such as using a wildflower seed mix or including a variety of nectar producing plants for pollinators such as bees, butterflies and other flying insects, is a great way to enhance biodiversity.

The Cheshire Wildlife Trust and Froglife have prepared advice sheets on creating invertebrate habitats:

www.cheshirewildlifetrust.co.uk/documents/advice_invertebrate_habitat2.pdf

www.froglife.org/documents/Froglife-helping-bugs-info.pdf

Designated Sites (Question 7 in Biodiversity Checklist):

Nationally and Internationally Protected Wildlife Sites

Natural England is the statutory advisor to the Planning Authority for Sites of National and International Importance. Nationally important sites are classified as Sites of Special Scientific Interest (SSSI). International Sites include Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites.

Collectively the internationally designated sites are known as Natura 2000 sites and all will also be nationally designated as SSSIs in addition to their international designations. It is possible for international sites to be designated as only or possibly all of the above.

The locations of national and international sites can be found on the mapping which accompanies the Peterborough Local Plan. The sites can also be identified via the Multi Agency Geographic Information for the Countryside (or MAGIC) website: www.magic.gov.uk Further information on these sites can be found on the GOV.UK Website: www.gov.uk/planning-development/protected-sites-species

Local Sites

The Peterborough area has approximately one hundred County Wildlife Sites (CWS) and six Local Geological Sites (LGS). All such local sites are protected in relation to development as set out in the Local Plan. Each site is by definition of importance at least at the County level and may be much higher.

Locations of Local Sites are indicated on Local Plan Mapping as well as on the City Councils Website www.peterborough.gov.uk/hawkeye.aspx

A search can also be carried out via the Cambridgeshire and Peterborough Environmental Records Centre who are also able to supply specific information with respect to the sites: www.cperc.org.uk

Further action for question 7

Peterborough City Council has a duty to consider the conservation of biodiversity when determining a planning application; this includes having regard to the safeguard of designated sites and priority habitats. Where a proposed development is likely to affect such a site or habitat feature, please provide further evidence with your planning submission including the amount (m2) of affected sites. Please also state the relevant section within your Environmental Statement where this information may be found.

Ecological Assessment for sites, priority habitats or biodiversity features

Your supporting ecological information should identify and describe potential development impacts likely to harm designated sites, priority habitats, other listed biodiversity features (these should include both direct and indirect effects both during construction and afterwards). Where harm is likely, evidence must be submitted to show:

- How alternative designs or locations have been considered;
- How adverse effects will be avoided wherever possible;
- How unavoidable impacts will be mitigated or reduced;
- How impacts that cannot be avoided or mitigated will be compensated.

In addition, proposals are to be encouraged that will enhance, restore or add to designated sites priority habitats, or other biodiversity features. The Assessment should quantify the likely change in the area (hectares) of priority habitat on the site after development e.g. whether there will be a net loss or gain. An ecological survey and assessment may form part of a wider Environmental Impact Assessment.

Figure B ECOLOGICAL SURVEY SEASONS

Key: Optimal Survey Time ■
Extending into ■

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Badgers	■	■	■	■	■	■	■	■	■	■	■	■
Bats (Hibernation Roosts)	■	■	■								■	■
Bats (Summer Roosts)				■	■	■	■	■	■	■		
Bats (Foraging/Commuting)				■	■	■	■	■	■	■		
Birds (Breeding)			■	■	■	■	■	■	■			
BIRDS (Over Wintering)	■	■									■	■
Great Crested Newts: Terrestrial survey			■	■	■	■	■	■	■	■		
Great Crested Newts: Aquatic survey (ponds etc)		■	■	■	■	■	■					
Invertebrates				■	■	■	■	■	■			
Otters	■	■	■	■	■	■	■	■	■	■	■	■
Reptiles			■	■	■	■	■	■	■			
Water Voles			■	■	■	■	■	■	■	■		
Habitats/Vegetation	■	■	■	■	■	■	■	■	■	■	■	■

Points to note regarding surveys are as follows:

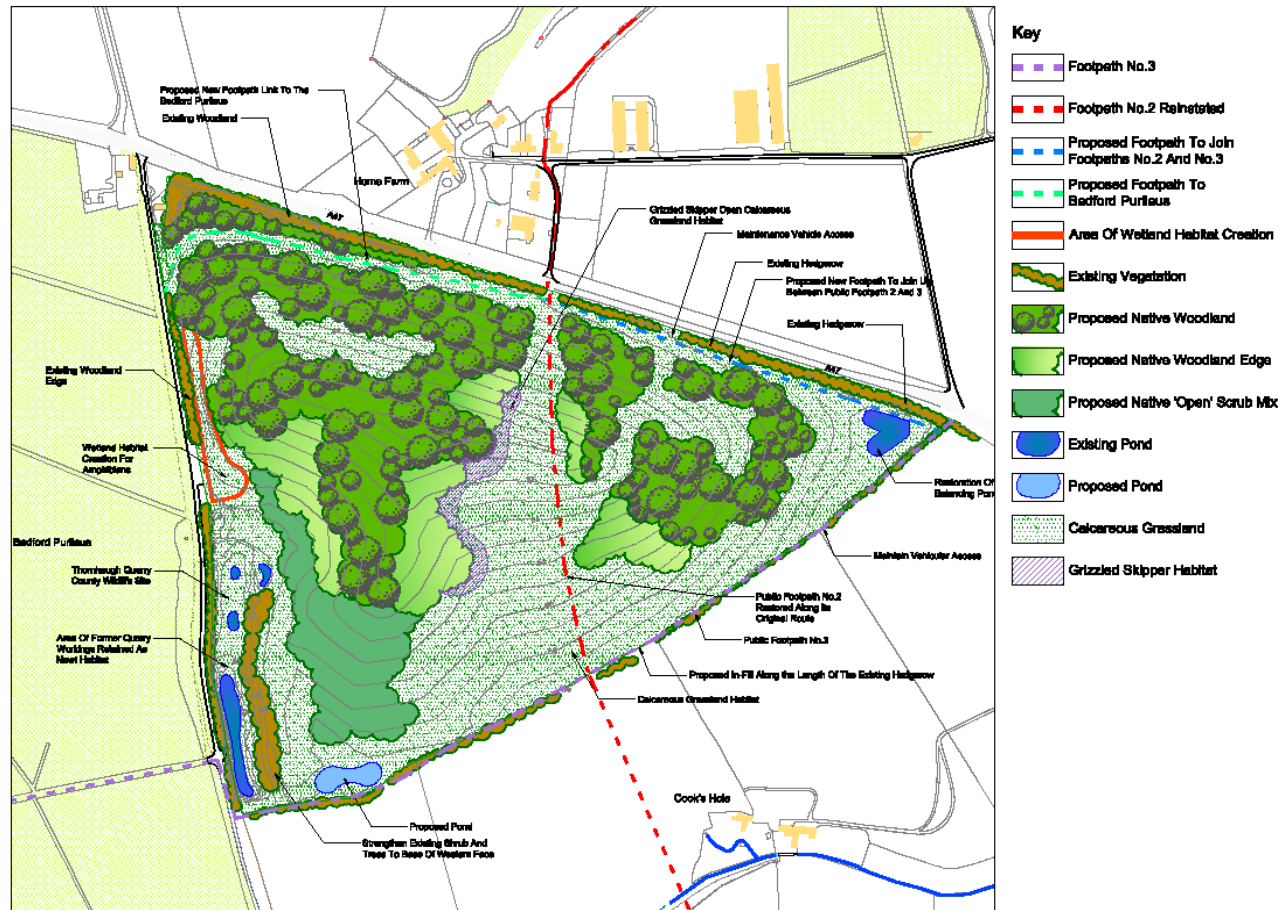
- For certain species and habitats surveys can be carried out at any time of year, but for other species, particular times of year are required to give the most reliable results, as indicated in Figure B.
- Surveys conducted outside of optimal times (Figure 1) may be unreliable. For certain species (e.g. great crested newt) surveys over the winter period are unlikely to yield any useful information. Negative results gained outside the optimal period should not be interpreted as absence of a species and further survey work maybe required during the optimal survey season. This is especially important where existing surveys and records show the species has been found previously on site or in the surrounding area. An application may not be valid until survey information is gathered from an optimum time of year.

- Species surveys are also very weather dependent so it may be necessary to delay a survey or to carry out more than one survey if the weather is not suitable, e.g. heavy rain is not good for surveying for otters, as it washes away their spraint (droppings). Likewise bat surveys carried out in wet or cold weather may not yield accurate results.
- Absence of evidence of a species does not necessarily mean that the species is not there, nor that its habitat is not protected (e.g. a bat roost used in the summer is protected during the winter whether any bats are present or not).



Appendix 5: Best Practice Case Studies

Case Study 1 - Thornhaugh 1 Quarry: This site is located within the John Clare Country GI focus area and lies adjacent to Bedford Purlieus National Nature Reserve. The restoration scheme involves the creation of a significant area of calcareous grassland, native woodland and scrub planting and creation of new ponds which support a large great crested newt population.



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Case Study 2 - Eyebury Quarry: Located in the Fens area east of Peterborough, the restoration scheme has involved the creation of new wetland habitats strategically positioned alongside the Cat's Water Drain County Wildlife Site, thereby helping to buffer and extend existing habitats. By establishing new ponds and ditches at an early stage, habitats have become sufficiently well established to enable protected species including great crested newts and water voles to be trans-located from areas planned for in-filling. Through careful management and long-term monitoring, the new habitats are now of County Wildlife Site standard themselves.



Case Study 3 - Great Haddon: Located in the South Peterborough Green Parks area, this major urban extension proposes the provision of over 40% green space, excluding surface water features and a restricted access habitat buffer to Orton Pit SAC. The mixture of semi-natural habitat creation, informal parkland open space and avenue street tree planting helps to deliver effective habitat connectivity for wildlife and accessible natural green spaces for people, whilst ensuring impacts to the SAC are sufficiently addressed through careful site design and mitigation measures.

