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Kingston Riverside

Ecology Report

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1 Introduction

Background to commission

1.1 BSG Ecology was commissioned by Kinnear Landscape Architects (KLA) to work as ecological advisors to input into new Supplementary Planning Documents (SPD) which is being produced for the stretch of the River Thames and associated riverside environment where it runs through Kingston Upon Thames (along the east side of the river).

1.2 For the purpose of the SPD the relevant stretch of the River Thames has been divided up into six character areas:

1 Canbury gardens

2 Narrowed Canbury gardens

3 Wharves between the bridges

4 Riverside Walk and Kingston's market town

5 Townsend, Portsmouth Road and the river

6 Ravens Ait, the river and Seething Wells

Content of the report

1.3 The aim of this report is to describe the existing ecology baseline of the riverside as it flows through Kingston and identify opportunities for ecological enhancement. As part of this objectives have been set which help to frame the key issues and areas from improvement along the riverside.

1.4 This report contains the following:

- Legislative and policy considerations
- Ecological context of the Kingston Riverside
- High level description of ecological baseline (based on desk study and a site walkover) of the six character areas
- Ecological objectives for each of the character areas
- Delivery mechanisms for achieving the objectives.

2 Policy Considerations

2.1 There are a wide range of policies which will be important to consider within the SPD for Kingston. The formation of appropriate objectives for biodiversity will consider the biodiversity policies set out below.

Legislative Context

- The following legislation was taken into account in preparing this report:
- The Conservation of Habitats and Species Regulations 2010
- Natural Environment and Rural Communities (NERC) Act 2006
- The Wildlife and Countryside Act (1981)
- The Government Circular 06/2005 (ODPM, 2005).

Planning Policy and Guidance

2.2 The following pieces of planning policy and guidance were taken into account when considering the potential effects on sites, habitats and species:

- National Planning Policy Framework (2012)
- Kingston Upon Thames Core Strategy (2012)
- The London Plan (2015)
- The Mayor's Biodiversity Strategy (2002)

2.3 A brief overview of the legislation and relevant polices is provided below.

The Conservation of Habitats and Species Regulations 2010 (as amended) and Wildlife and Countryside Act 1981

2.4 The Conservation of Habitats and Species Regulations 2010 (as amended) consolidates the various amendments that have been made to the original (1994) Regulations which transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.

2.5 "European protected species" (EPS) of animal are those which are present on Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). They are subject to the provisions of Regulation 41 of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:

- Intentionally or deliberately capture, injure or kill any wild animal included amongst these species
- Possess or control any live or dead specimens or any part of, or anything derived from a these species
- deliberately disturb wild animals of any such species
- deliberately take or destroy the eggs of such an animal, or
- intentionally, deliberately or recklessly damage or destroy a breeding site or resting place of such an animal, or obstruct access to such a place
- For the purposes of paragraph (c), disturbance of animals includes in particular any disturbance which is likely-
- to impair their ability-

- to survive, to breed or reproduce, or to rear or nurture their young, or
- in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- to affect significantly the local distribution or abundance of the species to which they belong.

2.6 Although the law provides strict protection to these species, it also allows this protection to be set aside (derogated) through the issuing of licences. The licences in England are currently determined by Natural England (NE) for development works and by Natural Resources Wales in Wales. In accordance with the requirements of the Regulations (2010), a licence can only be issued where the following requirements are satisfied:

- The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'
- 'There is no satisfactory alternative'
- The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Natural Environment and Rural Communities (NERC) Act 2006 - Habitats and species of principal importance

2.7 The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Sections 41 and 42 (S41 and S42) of the Act require the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England and Wales respectively. The list has been drawn up in consultation with Natural England and Countryside Council for Wales (now NRW), as required by the Act. In accordance with the Act the Secretary of State keeps this list under review and will publish a revised list if necessary, in consultation with Natural England and NRW.

2.8 The S41 and S42 lists are used to guide decision-makers such as public bodies, including local authorities and utilities companies, in implementing their duty under Section 40 of the NERC Act 2006, to have regard to the conservation of biodiversity in England and Wales, when carrying out their normal functions, including development control and planning. This is commonly referred to as the 'Biodiversity Duty.'

2.9 Guidance for public authorities on implementing the Biodiversity Duty has been jointly published by Defra and the Welsh Assembly Government. One of the key messages in this document is that 'conserving biodiversity includes restoring and enhancing species populations and habitats, as well as protecting them.' In England and Wales, the administration of the planning system and licensing schemes are highlighted as having a 'profound influence on biodiversity conservation.' Local authorities are required to take measures to "promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species. The guidance states that 'the duty aims to raise the profile and visibility of biodiversity, clarify existing commitments with regard to biodiversity, and to make it a natural and integral part of policy and decision making.'

2.10 In 2007, the UK Biodiversity Action Plan (BAP) Partnership published an updated list of priority UK species and habitats covering terrestrial, freshwater and marine biodiversity to focus conservation action for rarer species and habitats in the UK. The UK Post-2010 Biodiversity Framework , which covers the period from 2011 to 2020, now succeeds the UK BAP. The UK priority list contained 1150 species and 65 habitats requiring special protection and has been used as a reference to draw up the lists of species and habitats of principal importance in England and Wales.

2.11 In England, there are 56 habitats of principal importance and 943 species of principal importance on the S41 list. These are all the habitats and species found in England that were identified as requiring action in the UK BAP and which continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework.

Government Circular ODPM 06/2005 Biodiversity and Geological Conservation

2.12 Paragraph 98 of Government Circular 06/2005 advises that "the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat. Local authorities should consult Natural England before granting planning permission. They should consider attaching appropriate planning conditions or entering into planning obligations under which the developer would take steps to secure the long-term protection of the species. They should also advise developers that they must comply with any statutory species' protection provisions affecting the site concerned..."

2.13 Paragraph 99 of Government Circular 06/2005 advises that "it is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted".

National Planning Policy Framework

2.14 The Government published the National Planning Policy Framework (NPPF) on 27th March 2012. Text excerpts from the NPPF are shown where they may be relevant to planning applications and biodiversity including protected sites, habitats and species.

In conserving and enhancing the natural environment, the NPPF (Paragraph 109) states that 'the planning system should contribute to and enhance the natural and local environment' by:

- Recognising the wider benefits of ecosystem services;
- Minimising impacts on biodiversity and providing net gains in biodiversity, where possible contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability.

2.15 In paragraph 111, the NPPF refers to brownfield land as follows: 'planning policies and decisions should encourage the effective use of land by re-using land that has been previously developed (brownfield land), provided that it is not of high environmental value.'

2.16 Paragraph 117 refers to how planning policies should aim to minimise impacts on biodiversity, to: '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;' and to 'promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan.'

2.17 Paragraph 118 of the National Planning Policy Framework advises how, when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the mitigation hierarchy. The mitigation hierarchy advises that if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.

2.18 Where proposals or activities require planning permission, the NPPF states that '…local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;
- Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;
- Opportunities to incorporate biodiversity in and around developments should be encouraged;
- Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and
- The following wildlife sites should be given the same protection as European sites:
    - potential Special Protection Areas and possible Special Areas of Conservation
    - listed or proposed Ramsar sites; and
    - sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.'

2.19 In respect of protected sites, the NPPF requires local planning authorities to make 'distinctions…between the hierarchy of international, national and locally designated sites so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.'

2.20 In paragraph 125 the NPPF states that 'by encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.' This applies to protected species that are a material consideration in the planning process including bats and may also apply to other light sensitive species.

Core strategy

2.21 The Core Strategy for Kingston Upon Thames, which was adopted in 2012, contains two policies relating to biodiversity:

Policy DM 6 - Biodiversity

The Council will:

a. ensure new developments protect and promote biodiversity as part of sustainable design, through the inclusion of sustainable drainage, tree planting, soft landscaping, habitat enhancement and/or improvement, green roofs and new or improved semi-natural habitats, where appropriate

b. require an ecological assessment on major development proposals, or where a site contains or is next to significant areas of habitat or wildlife potential. This should be completed before design work or submission of the planning application.

c. ensure that new development does not result in a net loss of biodiversity and, where appropriate, should include new or improved habitats and provision for natural and semi-natural public green space, as set out in the Planning Obligations SPD or Community Infrastructure Levy charge.

Policy CS 3 - The Natural and Green Environment

The Council will protect and improve Kingston's valued natural and green environment by:

a. seeking to ensure that residents have access to an interconnected network of safe, well managed and maintained areas of open space through the implementation of routes in the 'South West

London Greenways Network Expansion - Feasibility Report', Kingston's Green Spaces Strategy, Park Management Plans and Annual Implementation Plans

b. protecting Kingston's open space network from inappropriate development through its open spaces designations; Green Belt, Metropolitan Open Land (MOL), Thames Policy Area, Sites of Importance for Nature Conservation (SINCs), Local Nature Reserves, Local Open Space, School Open Spaces, LDF Core Strategy Adopted April 2012 Thematic Policies 6 117 Green Corridors, Green Chains and Allotments, as shown on the Proposals Map

c. facilitating regeneration, infrastructure upgrades and environmental improvement to the Hogsmill Environs

d. incorporating appropriate elements of public open space into new developments and/or making a financial contribution to improving existing open spaces, with additional facilities and better management to Green Flag standards

e. promoting the management of biodiversity in light of the threats arising from climate change and future development growth, by working in partnership with a range of organisations on projects to protect and enhance Kingston's Open Space Network. This will not only provide increased wildlife habitats, but will also link wider parts of Kingston, allowing easier movement and reducing isolation of habitats.

f. protecting and enhancing Kingston's playing fields and ensuring that opportunities for the extension of existing provision or new recreation, children's play and sports facilities are encouraged; especially those that meet identified needs

The London Plan and The Majors Biodiversity Strategy

2.22 The London Plan (consolidated with alterations since 2004) encapsulates national and international policy on nature conservation and the conservation of biodiversity as well as the Mayor's Biodiversity Strategy (2002).

2.23 Policy 7.19: Biodiversity and access to nature of the London Plan states that:

The Mayor will work with all relevant partners to ensure a proactive approach to the protection, enhancement, creation, promotion and management of biodiversity in support of the Mayor's Biodiversity Strategy. This means planning for nature from the beginning of the development process and taking opportunities for positive gains for nature through the layout, design and materials of development proposals and appropriate biodiversity action plans.

2.24 The policy also details what planning proposal should do:

- *a wherever possible, make a positive contribution to the protection, enhancement, creation and management of biodiversity*
- *b prioritise assisting in achieving targets in biodiversity action plans (BAPs), and/or improving access to nature in areas deficient in accessible wildlife sites*
- *c not adversely affect the integrity of European sites and be resisted where they have significant adverse impact on European or nationally designated sites or on the population or conservation status of a protected species or a priority species or habitat identified in a UK, London or appropriate regional BAP or borough BAP.*

On Sites of Importance for Nature Conservation development proposals should:

- *a give the highest protection to sites with existing or proposed international designations (SACs, SPAs, Ramsar sites) and national designations (SSSIs, NNRs) in line with the relevant EU and UK guidance and regulations*
- *b give strong protection to sites of metropolitan importance for nature conservation (SMIs). These are sites jointly identified by the Mayor and boroughs as having strategic nature conservation importance*
- *c give sites of borough and local importance for nature conservation the level of protection commensurate with their importance.*

When considering proposals that would affect directly, indirectly or cumulatively a site of recognised nature conservation interest, the following hierarchy will apply:

- *1 avoid adverse impact to the biodiversity interest*
- *2 minimize impact and seek mitigation*
- *3 only in exceptional cases where the benefits of the proposal clearly outweigh the biodiversity impacts, seek appropriate compensation.*

London Biodiversity Action Plan

2.25 The London Biodiversity Action Plan (BAP) identifies priority habitats that are of particular importance in London. The Habitat Action Plans (HAP) identified within the BAP are:

- Acid grassland
- Chalk grassland
- Heathland
- Parks and urban green spaces
- Private gardens
- Reedbeds
- River and streams
- Standing water
- Tidal Thames
- Wasteland
- Woodland

2.26 In addition, the following Species Action Plans (SAPs) are also identified in the BAP:

- Bats
- Black poplar
- House sparrow
- Mistletoe
- Reptiles
- Sand martin
- Stag beetle
- Water vole

2.27 The HAPs and SAPs provide a useful starting point for considerations on which habitats and species should be targeted in ecological enhancement measures in the area.

Kingston Biodiversity Network

2.28 The Kingston Biodiversity Network (KBN) is a local wildlife group operating in Kingston which has an aim of establishing strong links between organisations and people who are interested in conserving and preserving the biodiversity of the borough.

2.29 The KBN has started the production of BAPs specific to Kingston upon Thames. The action plans will include:

- Standing Open Water (lakes and ponds, ditches)
- Hedgerows

- Meadows (chalk and acid)
- Running water
- Woodland

2.30 The KBN BAPs will provide a useful guide as to what's important and issues to consider with the different habitats in Kingston Upon Thames.

Lighting guidance

2.31 High light levels have been shown to deter bats and birds from using traditional flight routes (Stone, 2013). In order to avoid potential fragmentation along the riverside new lighting should be modelled and strictly controlled and existing lighting should be altered, where possible, to reduce light spill. Lighting will be a key factor to consider to ensure the continued function of the Thames as a wildlife corridor.

2.32 The Bat Conservation Trust (BCT) the national bat charity in the UK have produced interim guidance on recommendations to help minimise the impact of artificial lighting on wildlife (BCT, 2014). The guidance suggests various means of reducing lighting including: using lighting accessories (such as hoods) to shield or direct light to where it is required, limiting the time lights are on and carefully considering the height of lighting columns.

2.33 The Kingston Biodiversity Network has a Lighting Statement which states that: 'Any new lighting proposal which may have an impact on a water body or green spaces in the borough should be accompanied by a statement to show that there will be no impact on any species that may be using that water body or green space.'

2.34 The KBN policy relating to the protection of water bodies and/or green spaces from light pollution is an important one. However in reality it is unlikely to robustly conclude that a development would have no impact on any species. The aim instead will be to reduce light pollution to a set level i.e. 1 lux through appropriate measures.

3 Context

3.1 Data relating to sites of nature conservation importance and species of conservation interest[1] within 2 km of the Thames (where it flows through Kingston) was obtained from Greenspace Information for Greater London (GiGL) on 05 September 2016. Data obtained from GiGL was combined with data obtained from MAGIC[2] maps (accessed 30 August 2016) to provide information on the ecological baseline and site context.

Background

3.2 There are various nature conservation sites which are located within and in close proximity to the Kingston Riverside which are described below.

Located within the riverside

River Thames and Tidal Tributaries – Site of Metropolitan Importance for Nature Conservation (SMINC) and Site of Importance for Nature Conservation (SINC)

3.3 The River Thames is designated for the habitats and species it supports and its role as a significant green/blue corridor running through London. The river supports a wide variety of species associated with the in-channel habitats which range from estuarine and tidal habitats through to typical non-tidal lowland river habitats. The river supports a high diversity of species including over 100 species of fish (marine and freshwater), invertebrates including nationally rare snails, and good populations of wildfowl and wading and birds. A number of rare plants occur throughout the length of the Thames corridor.

3.4 The River Thames is also the major blue/green corridor that runs through London connecting directly, or through its many tributaries, a large number of London's major green spaces and statutory and non-statutory sites. The river allows linked chains of populations of species to extend their distribution into London and out into the countryside and also provides dispersal and migratory routes for plants and animals through London.

Seething Wells Filter Beds – SINC

3.5 The seven filter beds in Seething Wells are the remains of the Surbiton Water Works. They are important for wintering and breeding wildfowl and there is a locally important gull roost. Sand martins, which are a London BAP species, have also breed on site.

3.6 The site is also known to contain a Daubenton's bat maternity roost. A maternity roost contains multiple bats and therefore relies on a large insect resource. Seething Wells and the River provide a very important foraging resource for the bats.

3.7 In addition to the species which are present within the SINC there is also a small area of chalk grassland which is a relatively rare habitat in the area.

[1] Defined as: Internationally or nationally protected species, National or Local BAP priority species, Red Data List Species, Species of Conservation Concern in London
[2] www.magic.gov.uk

Located outside the riverside

Statuary site of nature conservation importance

Richmond Park - Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR)

3.8 Richmond Park is located north-east of the river. The park contains many mature and veteran trees and is designated for the large population of stag beetle it supports. It is also of national importance for a good saproxylic (dead and decaying wood associated) invertebrate assemblage which are associated with the dead and decaying timber.

Bushy Park and Home Park - SSSI

3.9 These parks are located south-west of the river. The parks are notified due to their nationally important saproxylic invertebrate assemblage, population of veteran trees and acid grassland communities.

Non statutory sites of nature conservation importance

3.10 There are 17 Sites of Importance for Nature Conservation contained within the data search area. There are three tiers of SINCs:

- Sites of Metropolitan Importance
- Sites of Borough Importance (Borough I and Borough II)
- Sites of local importance

3.11 In addition to the 17 sites a local nature reserve has also been recorded.

3.12 Table 1 details the sites along with a brief description as to what habitats and species are present within them which is summarised from the data received from GiGL.

Table 1. Sites of Importance for Nature Conservation within data search area

Site name	Designation	Habitats and species present
Ham Common	Local nature reserve	Woodland, grassland, dead wood habitat Saproxylic invertebrates
River Thames and Tidal Tributaries	Metropolitan	Intertidal habitats, wet woodlands
Richmond Park and associated areas	Metropolitan	Acid grassland, wet grassland, woodland, veteran trees, ponds
Ham Lands	Metropolitan	Ponds, grassland, woodland, scrub
Bushy Park and Home Park	Metropolitan	Acid grassland, wet grassland, woodland, veteran trees, running water
Hogsmill Valley Sewage Work and Hogsmill River	Borough	Running water, ponds – open lagoons, reed beds, woodland Breeding and wintering birds, bats, slow worm
Seething Wells Filter Beds	Borough	Chalk grassland, swamp, ponds Wintering wildfowl and other birds, Daubentons bat maternity roost
Oakhill, The Woods and Richard Jeffries Bird Sancutary	Borough	Scrub, woodland Birds

Site name	Designation	Habitats and species present
Ham Common	Local nature reserve	Woodland, grassland, dead wood habitat Saproxylic invertebrates
Fishponds	Borough	Grassland, ponds, trees, woodland
Coombe Wood Golf Course	Borough	Acid grassland, scrub, woodland
The Copse, Holly Hedge Field and Ham Avenues	Borough	Veteran trees, woodland, grassland Invertebrates
Kingston Cemetery	Local	Scattered trees, scrub, grassland
Hogsmill River in Central Kingston	Local	Running water, trees scrub, grassland
Royal Park Gate Open Space	Local	Grassland, scattered trees Birds and invertebrates
Cassels Hospital	Local	Acid grassland, orchard, scattered trees, veteran trees, woodland
Ham Common West	Local	Acid grassland, ponds
Churchyard of St Mary with St Alban, Teddington	Local	Grassland, woodland
The Copse at Hampton Wick and Normansfield Hospital	Local	Grassland, woodland, veteran trees Woodland birds

3.13 There is a large variety of sites of nature conservation interest which are located within close proximity to the river. The river is likely to provide a key corridor for species using the above mentioned sites and so improving the ecological corridor the river provides may also provide enhancements to the designated sites in the wider area.

4 Existing Character Areas

4.1 The description of the individual character areas of the Kingston Riverside was informed by a site visit undertaken by Principal Ecologist Hannah Bilston on 29 August 2016. Photographs of the areas are included within Appendix 1.

Canbury Gardens

4.2 Canbury Gardens is a council owned park located adjacent to the Thames at the northern end of Kingston Upon Thames. The park is located between the River Thames and the Lower-Ham Road.

4.3 The park is characterised by intensively managed amenity grassland, scattered trees, shrub beds containing mostly non-native species and a line of mature London plane trees *Platanus x hispanica* along the river. The river banks along the boundary of the park are vegetated with almost continuous bankside vegetation. There are breaks in the vegetation for mooring stations and areas where fishing is undertaken.

Narrowed Canbury Gardens

4.4 The southern end of Canbury Gardens is located adjacent to residential properties and tennis courts at which point the park narrows. There is a relatively large area of intensively managed amenity grassland which is located between the two tennis court areas which are bounded by hedgerows at their eastern and western ends.

Wharves between the bridges

4.5 There is a very distinct transition between the Canbury Gardens and the area between the railway bridge and the Kingston road bridge. This area is characterised by hard-landscaping with very limited vegetation and a concrete river edge. There is a small inlet located between the John Lewis store and the Kingston Turks Pier. Further along from the inlet is more hard-landscaping associated with the John Lewis building.

Riverside Walk and Kingston's market town

4.6 The Riverside Walk runs between the concrete edge of the River Thames and riverside bars and restaurants. Where the Hogsmill River runs into the Thames a small, triangular area of wetland with marginal vegetation has been created as part of the Charter Quay redevelopment. There is an elevated walkway over this wetland habitat where pedestrians can view the habitats below. In addition in an effort to green-up the hard concrete sides of the Hogsmill River wire baskets of vegetation have been installed. Scattered trees have also been planted along the river front.

4.7 Kingston's market area forms a busy hub for the town and is characterised by hard-landscaping with very limited soft landscaping.

Townsend, Portsmouth Road and the river

4.8 Townsend Park is a very small area of hard and soft landscaping at the end of the Riverside Walk. It contains benches and planted beds with a variety of non-native species and some semi-mature trees. A thin hedge containing native and non-native shrubs and semi-mature trees runs between the A307 and the park. There is a c. 40m break in the hedge just before the Kingston Townsend Pier and then the hedge continues again at the pier running adjacent to the A307 and the Portsmouth Road (which the A307 turns into).

4.9 Past the end of the pier the path alongside the river widens. At the northern end (up to the Riverside Café) it consists two concrete paths with an amenity grassland strip between them. Past the Riverside Café (up to Ravens Ait) the path closest to the river is a more natural sand and gravel path which steps up to the amenity grassland strip and then the concrete path. Past the riverside

café the hedge which runs adjacent to Portsmouth Road widens and provides a more substantial buffer between the river and the path and the road. The edge of the river along the path is vertical and un-vegetated.

Ravens Ait, the river and Seething Wells

4.1 Ravens Ait is an island in the Thames where it flows through Kingston. The island contains a restaurant and is used as a catering and wedding venue. The north-eastern part of the island appears to have been largely neglected, the middle is dominated by buildings and hard-standing and the south-western end is dominated by amenity grassland with semi-mature trees.

4.2 The hedgerow which runs alongside Portsmouth Road continues up to and includes the London River Yacht Club. It then stops and starts again past the Thames Sailing Club.

4.3 The Seething Wells Filter Beds are disused filter beds located just after Ravens Ait between the river and Portsmouth Road. The beds are surrounded by grassland and scrub and are not currently publically accessible and so are relatively undisturbed. In 2014 a planning application was submitted to the council for new homes on a floating pontoon however it was rejected.

4.4 A maternity roost of Daubenton's bat is located within the site and numerus birds and grass snake have been recorded.

Other side of the river

4.5 The focus of the guidance document will be on the Kingston side of the Thames. However, in order to understand the ecological context it is important to understand the environment on the opposite bank. There are three broad habitat types which are located on the opposite side of the river (i.e. west bank) to the above described character areas. The northern section of the opposite bank is characterised by large houses with mature gardens which lead down to the river. The area between the two bridges is built up with flats and a hard river edge.

4.6 Past the Kingston road bridge the river runs adjacent to Hampton Court Park (Home Park). Along this stretch the bank is much more natural with vegetated margins and a path: Barge Walk located alongside a mature hedgerow and trees. The Home Park Water Meadows are located the other side of the hedgerow.

Aquatic Ecology

4.7 The Environment Agency assesses UK rivers as part of their River Basin Management Plans (RBMP). The Egham to Teddington RBMP covers the River Thames where it flows through Kingston. The Environment Agency have reported that along this stretch of the Thames the river is highly modified and the overall ecological quality is poor. It also has a failing chemical quality in accordance with the Water Framework Directive (WFD) classifications. The poor ecological classification is due to poor biological quality for diatoms however conditions are more favourable for macrophytes, macroinvertebrates and fish.

4.8 European eel have been recorded within the data search area. European eel are a London BAP priority species due to population declines they have experienced. It is likely that where the Thames flows through Kingston that many other species of fish are present but GiGL do not hold records of them. Species of conservation interest such Atlantic salmon and brown trout have been recorded within the Thames.

Species

4.9 The GiGL data search reports on records of a diverse range of species within the desk study area. Species included:

- A very numerous and diverse invertebrate assemblage

- A very numerous and diverse bird assemblage including kingfisher, tawny owls and short eared owl.
- European eel – a London BAP species
- Herpetiles: common toad, common frog, great crested newt, slow worm, grass snake
- Mammals: grey seal, hedgehog, dormouse, common and pygmy shrew, bat species

4.10 The Kingston Biodiversity Network report on the presence of: starling, house sparrow, kingfishers, egrets, tawny owls, stag beetle, slow worms and badger within the borough.

4.11 It is important to note that a significant species record is the presence of a maternity roost of Daubenton's bat within Seething Wells. These bats are highly light sensitive and are known to forage over water and so it is likely that a major feeding resource and commuting routes for the bats is the filter beds and the River Thames.

5 Objectives

5.1 In the following section ecological objectives are described which could be considered for the area as a whole. The next section details how the objectives could be delivered in each character area.

Improving the wildlife corridor which the Thames provides

5.2 The Thames corridor supports a diverse range of habitats that are likely to function collectively as a wildlife corridor. On the other side of the Thames to the one the focus of this report (i.e. the west side) where the river is located adjacent to Hampton Court Park (Home Park), the banks appear more natural with marginal vegetation. Opportunities to create a more natural river edge on the Kingston side of the river would enhance the river as a wildlife corridor in this location. The river edge could include marginal planting and planting of shrub and trees with the aim of enhancing the connectivity for wildlife along the river.

5.3 The aim of 'greening' the edge of the river would be to provide habitat and opportunities for wildlife to live within and travel through the area. Enhancing the Thames corridor as a wildlife corridor is in line with the Core Strategy and the London Plan. Robust, connected wildlife corridors will be increasingly important as development pressure in the Kingston area increases.

Reducing light pollution

5.4 There is a maternity roost of Daubenton's bat located within the Seethings Wells Filter Bed site. Research on Daubentons bat roosts have indicated that the bats average foraging range from their roost is 2.3 km and that open water bodies such as ponds/lakes and rivers are the most important foraging habitat (Encarnação et al., 2005). It is therefore highly likely that the filter beds and the Thames (where it flows through Kingston) forms part of the core foraging area for the roost as well as providing a commuting route for the bats.

5.5 This species of bat is known to be particularly light sensitive (Shirley et al., 2001). Therefore, considering the likely importance of the river to the roost, it is important that dark corridors which the bats can use to commute and forage over are maintained. If insensitive lighting was permitted in close proximity to the river the bats viable foraging area would be reduced and commuting routes may be severed which could lead to a decline in the roost.

5.6 Light limits could be set for existing and new developments which are located adjacent to the river. A limit of 1 lux light spill onto the river would help to ensure that the impact of lighting is properly assessed and considered in new applications. In addition a lighting assessment of the existing riverside would help to identify any areas of high light spill which could be targeted for light reduction measures.

5.7 The aim of the control of lighting would be to ensure that a dark corridor exists along the river as it passes through Kingston. It will be important to carefully consider lighting proposals and ensure that they are acceptable on health and safety grounds as well as on ecological grounds.

Providing habitat for pollinators

5.8 There has been much publicity about the decline of bees in recent years. In order to provide habitat for bees and other pollinating insects, a Kingston riverside wide strategy for providing appropriate pollinating plants and nesting habitat i.e. bee hives could be adopted. The long term management for such habitat will be crucial to the success.

5.9 The aim of the strategy would be to increase the population of pollinating insects along the riverside.

Providing habitat for Species of Principal Importance for Nature Conservation

5.10 There are multiple opportunities along the riverside to provide habitat for species which have been recognised as being of importance for nature conservation. Species of relevance for Kingston and which are mentioned in the London BAP include house sparrow and bats.

5.11 The aim of the strategy would be to provide more opportunities for nesting/roosting and foraging habitat for species.

Prevent the spread and Introduction of Invasive Species

5.12 Himalayan Balsam was noted within the triangular wetland area where the Hogsmill River joins the Thames. This invasive species is not native and is listed on Schedule 9 of the Wildlife and Countryside Act 1981 making it illegal to allow this species to spread. It is known to shade out native flora and reduce bankside diversity. All Himalayan balsam should be removed and monitored to ensure it does not come back. Given that the plant spreads very easily in the long term a wider strategy for the management of Himalayan balsam is needed to identify and control upstream sources.

5.13 The aim of the strategy would be to carefully eradicate and monitor and react to any reintroduction of the plant species.

6 Delivery of Objectives

6.1 This section details opportunities for delivering the objectives described above for each character area below. It also highlights the areas of habitat within each character area which should be retained as part of any new proposals.

Canbury Gardens

Key habitats to retain

- Line of mature London plane trees
- Bankside vegetation

Pollinators

6.2 The planted shrub beds located within the gardens are mature and provided limited habitat for pollinators. These could be targeted within Canbury Gardens and selected areas could be planted with species known to be good for pollinating insects. The Royal Horticultural Society has a guide detailing which plants are good for pollinators (Royal Horticultural Society, undated). The beds where planting would occur would have to be chosen carefully as shading from trees could be a constraint to where the plants are located.

6.3 Selective replacement of amenity grassland with blocks of species rich grassland meadow. Interpretations boards will be important to ensure that the public understand the value of meadow habitat.

Habitat for species

6.4 The mature London plane trees will provide habitats for insects and are therefore likely to provide a resource for bats and birds. Opportunities to install bat and bird boxes on the trees (at heights of 4m to prevent disturbance) could be considered on selected trees. Boxes for bats and/or birds could also be considered in any new buildings.

Invasive Species

6.5 Himalayan Balsam was not noted within the marginal vegetation which runs along the river bank adjacent to Canbury Gardens however given it occurs adjacent to the Riverside Walk there is potential for it to occur. A monitoring programme should be initiated to ensure that it does not establish along the banks.

Narrowed Canbury Gardens

Key habitats to retain

- Line of mature London plane trees
- Hedges
- Bankside vegetation

Pollinators

6.6 There is a large area of amenity grassland located between the two tennis courts. This area could be targeted for a more natural look with the introduction of a wildflower meadow. Flower species particularly good for pollinators could be included within the planting mix. Interpretations boards will be important to ensure that the public understand the value of meadow habitat.

Habitat for species

6.7 The mature London plane trees will provide habitats for insects and are therefore likely to provide a resource for bats and birds. Opportunities to install bat and bird boxes on the trees (at heights of 4m to prevent disturbance) could be considered on selected trees. Boxes for bats and/or birds could also be considered in any new buildings.

Wharves between the bridges

Key habitats to retain

- None

Wildlife corridor

6.8 The area between the two bridges is very built up on both sides of the river. There is a small inlet near to the John Lewis store which could be enhanced to provide habitat for wildlife. Opportunities such as planted baskets with marginal vegetation (as near the Hogsmill River) could be considered. The planting mix would need to be carefully selected and include flowering aquatic plants to provide habitat for invertebrates as well as adding interest for pedestrians. Alternatively an area of reed bed could be planted in this inlet. Any plans would need to consider its existing usage and the level of water fluctuation.

Light pollution

6.9 There is a lot of built development located close to the rivers edge in the area between the two bridges which could be producing very high levels of light spill onto the river. In order for the River Thames to function as a viable commuting route and foraging area for bats dark areas must be maintained. A lighting assessment of this area would enable the identification of lighting mitigation measures which would help to reduce the light spill and ensure a dark corridor through this area is maintained.

Pollinators

6.10 The area outside of John Lewis is dominated by hard landscaping which could be softened with supplementary planting to provide a more pleasant environment and opportunities for pollinators. Raised flower beds could be created which contain a range of plants that are good for pollinators.

6.11 In line with the policy DM6 the inclusion of retro fitted green walls and/or green roofs could be considered in this heavily built up area. The green walls could be planted with plants suitable for pollinators and would add interest and provide habitat. Green walls are difficult to maintain and so careful consideration to long term maintenance will be important. The viability of retro fitting a green or a brown roof to the existing buildings in this area should be evaluated. Green or brown roofs could be designed to provide habitat for pollinators and a variety of bird species. In addition bee hives could be installed on the roofs as has been done successfully in the Fortnum and Masons Piccadilly store.

6.12 There is a car park which may be made available to make it into a park. If this option is available then the park should be planted with trees and habitat for pollinators should be included in the form of designated flower beds.

6.13 Along the riverside there appears to be a lack of places people can lock up their bikes. The inclusion of cycle locks which are also planters could be considered. Flowering plants good for pollinators could be used and these planted cycle locks would also add interest to this built up area.

Habitat for species

6.14 The feasibility of installing bat and bird boxes beneath the bridges should be investigated. Daubentons bat are known to roost in bridges and given they will be commuting and foraging in the area additional roosting habitat could provide a benefit for the roost. It will be important to

understand what the bat activity levels are near to the bridges and also to ensure that the light levels near the bridges are not unacceptable high so that the bridges would not provide a viable roosting option.

Riverside walk and Kingston's market town

Key habitats to retain

- Triangular area of wetland at Charter Quay
- Wire baskets of vegetation within the Hogsmill river
- Scattered trees

Wildlife corridor

6.15 As previously mentioned baskets of planted marginal vegetation have been included along the Hogsmill River. These could be continued along the Thames behind pontoons which people could moor onto. Liaison with the Environment Agency would be required to ensure flood risk assessments are fully considered in any proposals.

6.16 Any opportunities to plant native trees along the riverside should be considered. In addition to providing shade and adding interest to the area the trees would support invertebrates which would in turn provide for birds and bats.

Habitat for species

6.17 House sparrows have been recorded within the market area and therefore where appropriate opportunities for the inclusion of boxes specifically for house sparrows on buildings could be considered. In addition the inclusion of deciduous shrubbery should be considered wherever possible as this has been shown to be an important foraging habitat for house sparrows (Vincent, 2005).

Invasive species

6.18 The Himalayan balsam within the triangular wildlife area needs to be removed to ensure the plant does not spread. A monitoring programme should be established to ensure the plan does not re-establish.

6.19 In the long term a catchment wide strategy for the removal of Himalayan balsam is necessary.

Townsend, Portsmouth Road and the river

Key habitats to retain

- Bankside vegetation
- Scattered trees
- Hedgerow

Wildlife corridor

6.20 The Townsend Park could be enhanced for wildlife through the inclusion of a thicker hedge with trees along the A307 and the park. More native tree planting along this stretch of river will help enhance the connectivity of the river corridor.

Pollinators

6.21 Some of the hard landscaping within the Townsend Park could be replaced for soft landscaping in the form of beds for plants good for pollinators. This would make the experience of the users of the park more interesting.

Ravens Ait, the river and Seething Wells

Key habitats to retain

- Bankside vegetation
- Hedgerow
- Trees

Wildlife corridor

6.22 There is currently a gap in the hedgerow where the Thames Sailing Club is located along the Portsmouth Road. Opportunities to create a hedge alongside Portsmouth Road could be considered to help facilitate movement of species along the hedge, it may also help to provide a connection to the filter beds.

Pollinators

6.23 The area at the back of Ravens Ait is amenity grassland, the area at the front of the island (i.e. the north east end) could be enhanced for wildlife, adding to the wildlife corridor of the Thames. A small area of wildflower meadow could be created which would provide a colourful and interesting start to the island.

Light pollution

6.24 Given close proximity to the roost controlling light pollution in this area will be of particular importance. Baseline lighting assessment should be undertaken and light spill for any new developments, particularly on Ravens Ait will need to be carefully evaluated. The planning and enforcement of the 1 lux light limit will be critical to the maintenance of dark corridors connecting to and from the roost.

7 References

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Appendix 1: Photographs

Canbury Gardens

Narrowed Canbury Gardens

Wharves between the bridges

Riverside Walk and Kingston's market town

Townsend, Portsmouth Road and the river

Ravens Ait, the river and Seething Wells