

APPENDIX 6: STRATEGIC SITES

Emerging Preferred Option Strategic Site Locations

-  Wigan Borough Boundary
-  Greenheart Boundary
-  Existing Key Strategic Site
-  Candidate Key Strategic Site
-  Other Site/Safeguarded Land

Data Sources: Wigan Council

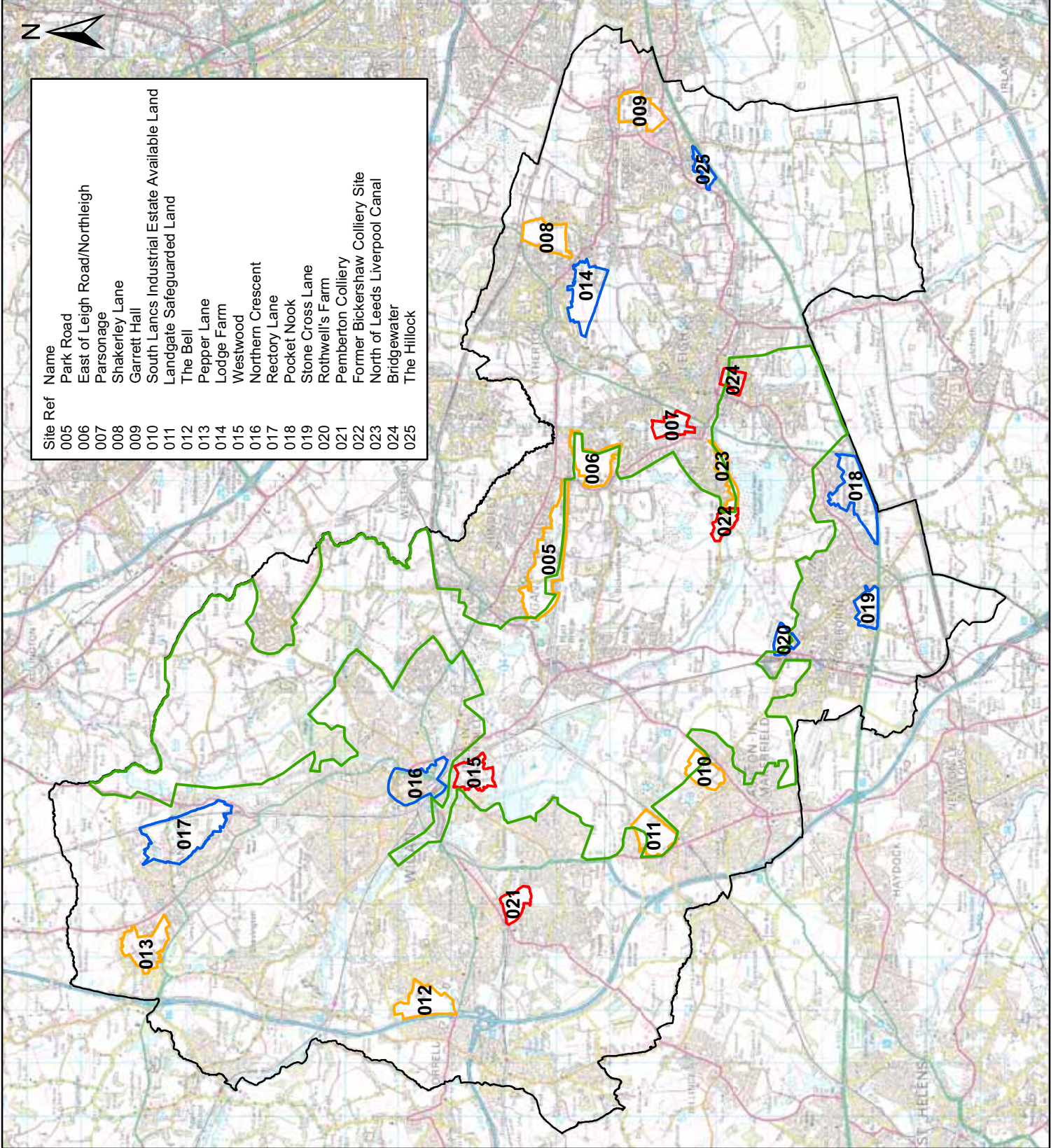


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G1771.001



Site Ref	Name
005	Park Road
006	East of Leigh Road/Northleigh
007	Parsonage
008	Shakerley Lane
009	Garrett Hall
010	South Lancs Industrial Estate Available Land
011	Landgate Safeguarded Land
012	The Bell
013	Pepper Lane
014	Lodge Farm
015	Westwood
016	Northern Crescent
017	Rectory Lane
018	Pocket Nook
019	Stone Cross Lane
020	Rothwell's Farm
021	Pemberton Colliery
022	Former Bickershaw Colliery Site
023	North of Leeds Liverpool Canal
024	Bridgewater
025	The Hillcock



Site name:	Park Road (TEP Site Ref 005)		
Site location:	Hindley	Central Grid Ref:	SD624031
Site area:	113 ha		

General description:

Safeguarded land, predominantly within Council ownership. Roughly linear site located adjacent to southern edge of Hindley conurbation. Site contains a small amount of residential development, farm buildings and fields, playing fields and Leyland Park, pockets of woodland, field ponds and reservoirs, watercourses in the form of brooks and open drains and also disused land such as former colliery workings.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations
 Site survey within accessible land
 Remote assessment, viewed from accessible land

Biodiversity Interest:

<i>Designated areas:</i>		Two SBIs within site. Three SBIs adjacent to site.	
SBI	Name:	Reservoirs East of Leyland Park – A60	
	Grade:	B	
	Area:	2.2ha	
	Main classification feature(s):	Vegetation mosaic, invertebrates, bryophytes, amphibians	
	Proportion within site:	100%	
SBI	Name:	Field by Scowcroft Farm – A92	
	Grade:	B	
	Area:	1.1ha	
	Main classification feature(s):	Vegetation mosaic, butterflies & moths	
	Proportion within site:	100%	
<i>Priority habitats:</i>			
<u>present</u> standing water managed greenspace important grassland (acid) water corridor reedbed heathland hedgerow		<u>probable</u>	<u>potential</u> woodland important grasslands
<i>Priority species:</i>			
<u>present</u> great crested newt common toad lapwing yellow wagtail bats		<u>probable</u> water vole dunnock starling song thrush skylark house sparrow	<u>potential</u> grass snake willow tit bullfinch corn bunting grey partridge linnet reed bunting tree sparrow yellowhammer brown hare

<i>Statutorily protected species:</i>		
<u>present</u> great crested newt bats	<u>probable</u> water vole	<u>potential</u> grass snake
<i>Other :</i>		
<ul style="list-style-type: none"> ■ SBI citations indicate probable high invertebrate diversity across the site. Likely habitats to support invertebrate assemblages will be grassland mosaic, hedgerow networks, woodland and woodland edge, reedbed, pond and swamp and watercourses, including ditches. ■ At least 10 bird species have been recorded in grid squares containing this site, suggesting a good species assemblage. ■ The dismantled railway corridor (SBI – A64) may provide important wildlife linkages across the south of the site. 		

General appraisal for Strategic Site:

Designated sites:

- Two Sites of Biological Importance entirely within site, three immediately adjacent to site and further sites in close proximity.
- SBIs within site should be retained *in situ*
- SBIs within site and adjacent to site should be protected and buffered - through open space provision or landscaping. Less preferable, but if SBIs are to be backed by gardens, appropriate conditions should be secured through planning consents to ensure suitable fencing is provided to prevent tipping, pet escape and encroachment within the SBI.
- SBIs within, adjacent and in close proximity (<1km) should be provided with linkages using appropriate green infrastructure - habitats within linkages should emulate those within the SBIs, in this case primarily grassland, marsh, scrub and open water.

Priority habitats:

- Ponds, managed greenspace (parks and gardens) and hedgerows are generally widespread across Wigan. Net loss should be avoided. Surveys for protected species and to confirm important hedgerows would be required.
- Acid grassland, heathland, woodland and reedbed are generally not extensive within Wigan. These habitats, due to their maturity or complexity should, where possible, be retained and protected *in situ* and provided with appropriate linkages to similar habitats and/or the wider landscape.
- Where *in situ* retention or no net loss of habitats is not achievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.
- This site lies adjacent to the Greenheart and should promote green infrastructure and development densities suitable to assimilate into the Greenheart fringe.

Priority species (likely to include some statutorily protected species):

- Great crested newt and common toad confirmed within the site, with additional concentrations of great crested newt ponds known to the south and east of the site.
- Habitats suitable for roosting, foraging and commuting bats. Bats (common and soprano pipistrelles and noctules) have been recorded from grid squares containing the site.
- Water vole confirmed in close proximity to site, to south and west. Habitats within the site are suitable for water vole and are connected with offsite habitats known to support water vole.
- Habitats may be suitable to support significant numbers of farmland bird species, including ground nesting and passerine species.

General appraisal for Strategic Site:

- The site contains a variety of scrub, woodland, reedbed, grassland, pond and ditch habitats within the site. Combined with the known presence of amphibians and fish in several waterbodies, these habitats may be suitable to support reptiles, particularly grass snake.
- Brown hare recorded (NBN 1996) towards western end of site. Habitats within site have potential to maintain local populations, if still present.
- The habitats within the site, such as woodland, woodland edge, hedgerow networks and scrub/grassland mosaics may support willow tit.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained *in situ*, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- An area of Council owned grassland directly to the west, adjoining SBI A99, was recorded as acid grassland, becoming neutrified. This area could be restored and enhanced as part of an offsetting package.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002

Site name:	East of Leigh Road / Northleigh (TEP Site Ref 006)		
Site location:	Hindley	Central Grid Ref:	SD573001
Site area:	52 ha		

General description:

The eastern extents of the site are Safeguarded land, while the majority of the site is allocated in the Wigan Replacement UDP April 2006 for reclamation and renewal. Roughly circular site located between the southern tip of the Hindley conurbation and northern extent of Leigh. Site is dominated by grassland with hedges, woodland and scattered trees, scrub, ponds, watercourses. Some scattered disused buildings and building foundations are located in the southwest of the site. The northeast corner comprises a capped colliery mound. The south of the site has been established as informal pony paddocks and pony grazing is evident across other grassland areas central to the site. Footpaths cross the site, some of which are hard surfaced.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations
 Site survey within accessible land
 Remote assessment, viewed from accessible land

Biodiversity Interest:

Designated areas: No SBIs within site. One SBI to immediate northwest of site (Disused Railway at Hindley Green – A64).

Priority habitats:

<u>present</u>	<u>probable</u>	<u>potential</u>
standing water	reedbed	important grasslands
hedgerow		woodland
heathland		
managed greenspace		
important grassland (acid)		

Priority species:

<u>present</u>	<u>probable</u>	<u>potential</u>
great crested newt		grass snake
common toad		willow tit
bats		
water vole		
dunnock		
grasshopper warbler		
bullfinch		
lapwing		
reed bunting		
starling		
skylark		
song thrush		

<i>Statutorily protected species:</i>		
<u>present</u>	<u>probable</u>	<u>potential</u>
great crested newt water vole bats		grass snake
<i>Other :</i>		
<ul style="list-style-type: none"> ■ The disused railway corridor in the northwest extent and extending east-west to the north of the site, which contains ponds, woodland, grassland and scrub, would function as an important wildlife corridor and linkage. ■ At least two of the ponds would appear to have local angling interest, although this may not be formalised with an angling club, society or association. ■ Japanese knotweed is present in significant infestations in the southwest of the site and smaller infestations are present in east of the site. 		

General appraisal for Strategic Site:

Designated sites:

- No Sites of Biological Importance within site, but one site (Disused Railway at Hindley Green – A64) is located a short distance to the north west of the site, connected to the site by the disused rail corridor.
- The disused rail corridor is a key linkage, the function of which should be retained within an appropriate green infrastructure – habitats within the linkage, if the existing habitats cannot be retained *in situ*, should emulate those within the rail corridor currently, in this case primarily scrub woodland, open water and grassland.

Priority habitats:

- Ponds and hedgerows are generally widespread across Wigan. Net loss should be avoided. Surveys for protected species and to confirm important hedgerows would be required. Linkage between ponds within the site and ponds to the east and west should be retained.
- Acid grassland, woodland and reedbed are generally not extensive within Wigan. These habitats, due to their maturity or complexity should, where possible, be retained and protected *in situ* and provided with appropriate linkages within the green infrastructure of the site.
- Where *in situ* retention or no net loss of habitats is not achievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.
- This site lies within the Greenheart and should promote green infrastructure and development densities suitable to assimilate the site into the Greenheart fringe.
- The majority of the site was recorded as neutral grassland in the 1986 Phase 1 survey. However, it is unlikely to match the Priority habitat criteria for species-rich unimproved grassland. Areas which were visited did not appear to be species-rich. However, some pockets of diversity may remain.

Priority species (likely to include some statutorily protected species):

- Great crested newt and common toad within the site, with additional concentrations of great crested newt ponds known to the north (Dangerous Corner), east (Pickley Green), west/southwest (Bickershaw) and northwest (Hindley Green) of the site. The site is an important linkage between these surrounding populations; linkage should be retained within the site.

General appraisal for Strategic Site:

- Habitats suitable for roosting (trees, but building roosts within the site are unlikely), foraging and commuting bats; of particular importance for commuting will be the disused railway corridor. Bats (pipistrelle species) have been recorded from grid squares containing the site.
- Water vole within the site and to the west of the site; suitable habitats include the ditch lines and the waterbodies.
- Good bird species diversity at the site, including several passerine and ground nesting priority species.
- The site contains a variety of scrub, woodland, reedbed, grassland, pond and ditch habitats within the site. Combined with the known presence of amphibians and fish in several waterbodies, these habitats may be suitable to support reptiles, particularly grass snake.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained *in situ*, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- Linkages should be retained across the site, particularly east-west to maintain the current function of the railway corridor, and northeast-southwest to maintain connectivity between great crested newt populations.
- Where additional habitat loss beyond that which can be provided within linkages result in net loss, offsetting should be provided.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Parsonage (TEP Site Ref 007)		
Site location:	Leigh	Central Grid Ref:	SD650008
Site area:	24 ha		

General description:

Site lies roughly central to Leigh, encompassing the banks of Westleigh Brook. The site comprises rank grassland, scrub, tall herb, scattered trees and woodland, bare ground and ephemeral growth. The land in the south on both sides of the brook is located over the former Parsonage Colliery (recorded on the Phase 1 habitat maps). The land further north, to the west of the brook, is located over former mine workings and colliery mound. The land within the site, with the exception of the Westleigh Brook corridor, is typical of derelict urban scrub-grassland mosaics establishing on formerly developed land. Footpaths follow the brook and cross the site and numerous desire lines are evident from aerial photographs.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
Additional GIS data analysis
SBI citations

Biodiversity Interest:

<i>Designated areas:</i>	One SBI to west of site – Firs Park Grade C – A65		
	One SBI to south of site – Pennington Flash Grade A – A78		
<i>Priority habitats:</i>			
<u>present</u> water corridor (Westleigh Brook) managed greenspace	<u>probable</u>	<u>potential</u> important grasslands woodland	
<i>Priority species:</i>			
<u>present</u> bats great crested newt	<u>probable</u> common toad water vole	<u>potential</u> lapwing song thrush dunnock skylark	
<i>Statutorily protected species:</i>			
<u>present</u> great crested newt bats	<u>probable</u> water vole	<u>potential</u> Kingfisher	
<i>Other :</i>			
<ul style="list-style-type: none"> ■ Plantation, tall herb and scrub along the west boundary form a wildlife corridor to land in the north. ■ The habitats along Westleigh Brook, including tall grass, scrub and scattered trees, form a wildlife corridor connecting the site to the Greenheart in the south and more open countryside to the north of Leigh. ■ The diverse structure and current condition of habitats present on formerly developed land might result in good invertebrate interest such as butterflies and Odonata, although no priority species currently recorded in the area. 			

General appraisal for Strategic Site:*Designated sites:*

- Firs Park SBI located to east of site.
- Pennington Flash SBI – A78 - located to south of site, connect to site by Westleigh Brook.

Priority habitats:

- Westleigh Brook supports water vole to the south and north of the site; this qualifies the brook as a priority habitat under the new rivers priority habitat type in the absence of any other qualifying feature.
- A small area of woodland canopy is present on the north boundary of the site. Woodland canopy is also establishing in the east of the site. Due to its relative maturity woodland habitat should, where possible, be retained and protected *in situ* and provided with appropriate linkages to similar habitats and/or the wider landscape.
- The corridor of Westleigh Brook is identified as a flood risk corridor, incorporating a smaller central area at category 3 (high risk). Sustainable drainage design within the site should aim to enhance the brook corridor, for example by creating ponds or retention basins and/or swales.
- The site links several areas of managed greenspace, including amenity grassland and playing pitches. Linkage to these areas should be retained.
- Survey of the derelict land areas, particularly east of Westleigh Brook, is required to verify the presence of priority habitats such as acid grassland and/or open mosaic on previously developed land.
- No ponds are apparently present, but great crested newt is recorded on the west boundary and just off the west boundary – habitats within the site may support terrestrial animals.

Priority species (likely to include some statutorily protected species):

- Water vole present on Westleigh Brook, to north and west.
- Great crested newt are present just within the west boundary and just outside the west boundary of the site; suitable foraging and refuge habitats are present across the site, particularly along the west boundary and along the central corridor of Westleigh Brook.
- Bats (common and soprano pipistrelles and noctules) have been recorded from grid squares containing the site.
- Surveys for protected and priority species (notably great crested newt and other amphibians, water vole and breeding birds) should accompany any planning applications.
- Habitats supporting protected and priority species should be retained *in situ*, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Statutorily protected species (those which are not also priority species):

- Kingfisher may be found along Westleigh Brook; the SBI citation for Pennington Flash notes kingfisher feeding on Westleigh Brook.

Biodiversity Enhancement Opportunity:

- Water vole habitats should be retained in situ to maintain habitat extent and range for the species. Small scale habitat compensation could be provided within the brook corridor to offset habitat loss elsewhere within the site.
- If further habitat offsetting is required, for example, for amphibians or bird species, suitable areas might include Pennington Flash or Bickershaw Colliery.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002

Site name:	Shakerley Lane (TEP Site Ref 008)		
Site location:	Tyldesley	Central Grid Ref:	SD686031
Site area:	42 ha		

General description:

Safeguarded land. Former colliery mound topped with woodland/scrub canopy and with exposed southern face in south of site. Remainder of site predominantly rural with occasional hedges and extensive tall grass sward. Possible grazing within the north of site, where hedgerows occur. Extensive footpath and desire line access across the site.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations
 Site survey within accessible land
 Remote assessment, viewed from accessible land

Biodiversity Interest:

Designated areas: No SBIs within site. One SBI to immediate northeast of site (Marsh and Reedbeds at Shakerley – A69).

Priority habitats:

<u>present</u>	<u>probable</u>	<u>potential</u>
hedgerow important grasslands managed greenspace water corridor (Hindsford Brook)	rivers	pond woodland

Priority species:

<u>present</u>	<u>probable</u>	<u>potential</u>
bats	dunnock house sparrow lapwing skylark song thrush starling water vole	bullfinch corn bunting grey partridge linnet reed bunting tree sparrow yellowhammer

Statutorily protected species:

<u>present</u>	<u>probable</u>	<u>potential</u>
bats	water vole	

Other :

- The railway corridor to the north of the site, running east-west to the north of the site, may function as an important wildlife corridor and linkage.
- Hindsford Brook, even if it may not qualify as priority habitat, provides an important linkage north-south on the east side of the site and connectivity with the landscape to the east.
- The long grassland swards present on site, with occasional scrub or acid characteristics in east and south may provide opportunity for good invertebrate diversity.

General appraisal for Strategic Site:*Designated sites:*

- No Sites of Biological Importance within site, but one site (Marsh and Reedbeds at Shakerley – A69) is located a short distance to the north west of the site.
- Connectivity with Hindsford Brook linkage should be maintained.

Priority habitats:

- Hedgerows are generally widespread across Wigan. Net loss should be avoided; replacement hedgerows should contribute to an integrated network. Surveys for protected species and to confirm important hedgerows would be required.
- Hindsford Brook requires assessment to determine whether it fulfils criteria for new rivers priority habitat. Regardless, the brook corridor provides greatest diversity of habitats and structure within the site and will function as good wildlife corridor. The brook should be retained and, where possible, the brook corridor enhanced.
- Acid grassland and woodland are generally not extensive within Wigan. These habitats, due to their complexity or maturity should, where possible, be retained and protected *in situ* and provided with appropriate linkages within the green infrastructure of the new site.
- Where *in situ* retention or no net loss of habitats is not achievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.

Priority species (likely to include some statutorily protected species):

- Bats (pipistrelle species) have been recorded from grid squares containing the site.
- Water vole on brook just to south of site; it is likely water vole is present along brook extent within site, if suitable conditions are present (this would qualify brook as priority habitat in absence of other qualifying features);
- Grassland habitats present with occasional hedgerow and woodland scrub create suitable habitats for ground nesting species and some passerines including possible BAP species such as grey partridge, song thrush, bullfinch, dunnock or lapwing. May provide important winter feeding habitat.

Biodiversity Enhancement Opportunity:

- Linkages should be retained along the corridor of the brook and along the north boundary of the site, parallel to the railway corridor. These linkages should provide habitat enhancement to compensate for any loss of biodiversity interest within the site.
- Where additional biodiversity loss beyond that which might be provided within recommended linkages results in net loss within the site, offsetting should be provided.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Garrett Hall (TEP Site Ref 009)		
Site location:	Tyldesley	Central Grid Ref:	SD 709014
Site area:	42 ha		

General description:

Northern half of site is safeguarded land. Located in the eastern fringe of Tyldesley where it context with Worseley, the site is predominantly enclosed by residential and industrial development. Site is bisected east-west by a watercourse, seemingly engineered in places with straight canalised sections containing steep banks and weirs. Site is predominantly agricultural with a clearly structured field system.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citation

Biodiversity Interest:

Designated areas: No SBIs within site or within immediate proximity or influence of site.

Priority habitats:

<u>present</u>	<u>probable</u>	<u>potential</u>
hedgerow managed greenspace pond water corridor		

Priority species:

<u>present</u>	<u>probable</u>	<u>potential</u>
great crested newt bats	common toad house sparrow lapwing skylark song thrush starling water vole dunnock	bullfinch corn bunting grey partridge linnet reed bunting tree sparrow yellowhammer

Statutorily protected species:

<u>present</u>	<u>probable</u>	<u>potential</u>
great crested newt bats	water vole	

Other :

- The railway corridor to the north of the site, running east-west to the north of the site, and the watercourse crossing the site centrally, also east-west, provide the only opportunities for connectivity to the countryside in the north.

General appraisal for Strategic Site:*Designated sites:*

- No Sites of Biological Importance within or near the site. However, two SBIs (Ponds North of Cleworth Hall (South) – A71 & Ponds Near New Manchester (East) – A72) are located just over 500m from site. Both SBIs have great crested newt as a prime designating feature.

Priority habitats:

- Hedgerows are generally widespread across Wigan. Net loss should be avoided; replacement hedgerows should contribute to an integrated network. Surveys for protected species and to confirm important hedgerows would be required.
- The brook, being apparently canalised in sections, is unlikely to qualify (unless water vole or other priority species is recorded along its extent). Regardless, the brook corridor provides greatest diversity of habitats and structure within the site and may function as good wildlife corridor within a generally isolated site. The brook should be retained and, where possible, the brook corridor enhanced.
- The brook has been identified as a floodrisk corridor, incorporating category 3 (high risk). Sustainable drainage design within the site should aim to enhance the watercourse corridor, for example with retention basins and/or swales.
- Offsite priority habitats, such as the woodland blocks, should be considered within development; creating greenspace in the north would buffer the woodland habitats to the northwest and north and improve linkages between these habitats and the wider countryside. Managed greenspace is also present to the northwest in the form of churchyards/cemeteries. Creating a greenlink in the north will maintain sustainable access to these areas.

Priority species (likely to include some statutorily protected species):

- Great crested newt present in the site, south of the watercourse. Great crested newt records also to the east in the Grade A SBI Ponds Near New Manchester (East) – A72 - and significant records in the north in the Grade A SBI Ponds North of Cleworth Hall (South) – A71.
- Bats (pipistrelle species) have been recorded from grid squares containing the site.
- Common toad likely to be present.
- Water vole has potential to occur along watercourse and, possibly, at ponds if they possess suitable characteristics;
- The agricultural landscape of grassland and hedgerows provides opportunities for farmland bird species such as possible BAP species including grey partridge, song thrush, bullfinch, dunnock or lapwing. May provide important winter feeding habitat.

Biodiversity Enhancement Opportunity:

- Linkages should be retained along the north boundary by the rail corridor and along corridor of the brook.
- There is not likely to be a requirement for offsetting net loss of priority habitats at this site. However, a single great crested newt record indicates a potentially isolated population. If survey indicates this is a single pond population, and retention and enhancement within the site is not possible, a population translocation may be required to suitable offsite habitats, with additional pond creation. Potential receptor opportunities would include extending the SBI Ponds North of Cleworth Hall (South) – A71 to directly link with the SBI Ponds Near New Manchester (East) – A72, both which is within the general range of the population on site.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	South Lancs Industrial Estate Available Land (TEP Site Ref 010)		
Site location:	Ashton-in-Makerfield	Central Grid Ref:	SD584002
Site area:	33 ha		

General description:

The site is nestled into the northern edge of the Ashton-in-Makerfield conurbation. Currently agricultural Greenfield, the site comprises a strong field system, although field boundary features such as hedgerows or drains are sparse. Scattered field ponds, isolated hedgerows in the north and a small area of plantation woodland in the east (located over a former reservoir) are present. Fields are generally arable with no apparent margins.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
Additional GIS data analysis
SBI citations
Site survey within accessible land
Remote assessment, viewed from accessible land

Biodiversity Interest:

Designated areas: No SBIs within site or within proximity or influence of site.

Priority habitats:

<u>present</u>	<u>probable</u>	<u>potential</u>
hedgerow standing water managed greenspace		

Priority species:

<u>present</u>	<u>probable</u>	<u>potential</u>
bats		common toad great crested newt song thrush dunnock yellowhammer lapwing skylark

Statutorily protected species:

<u>present</u>	<u>probable</u>	<u>potential</u>
bats		great crested newts

Other :

- The plantation, although not qualifying as a priority habitat, would likely support priority species such as song thrush and may provide foraging or refuge habitat for amphibians, if present within the farm ponds. The plantation and occasional scattered trees in the north of the site may provide some roost opportunities for bats. Foraging for bats is likely to be restricted to those species more able to utilise open spaces, such as common pipistrelle and noctule bats.

General appraisal for Strategic Site:*Designated sites:*

- No Sites of Biological Importance within the site or within proximity or influence of the site.

Priority habitats:

- Occasional hedgerows occur in the north of the site.
- Field ponds may qualify as priority habitats; further survey is required.
- The site does not provide significant connectivity or linkages across the area.
- The northern extent overlaps with the Greenheart and lies adjacent to land registered in Entry Level Environmental Stewardship Scheme. Development should promote greenspace and should place lower density developments at the northern end of the site, to buffer the Greenheart and more gently assimilate the development into the rural landscape to the north.

Priority species (likely to include some statutorily protected species):

- Bats (common pipistrelles and an unidentified species) have been recorded from grid squares containing the site.
- The agricultural landscape may support farmland bird species, although the very limited hedgerows may reduce the likelihood for passerine species.
- The plantation, limited hedgerows and scattered trees may provide bird nest, bat roost and foraging opportunities.
- There is limited connectivity across the site; no significant corridors or linkages exist.

Biodiversity Enhancement Opportunity:

- There is not likely to be a requirement for offsetting net loss of priority habitats at this site.
- However, pond survey will be required to confirm presence/absence of great crested newt and common toad. If ponds and linkages between ponds and the countryside to the north cannot be maintained, offsetting should be provided to ensure no net loss of the pond resource within the area.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Landgate (TEP Site Ref 011)		
Site location:	Landgate	Central Grid Ref:	SD573011
Site area:	46 ha		

General description:

Safeguarded site mainly within Wigan Greenheart that is predominantly agricultural land, located south of the settlement of Landgate and east of Bryn. A rail line runs along the southern boundary of the site, with a dismantled rail line passing through the site to the east. There are small areas of woodland, several large waterbodies with angling interest, amenity greenspace in a band along the northern section of the site and outdoors sports facilities to the south. Landgate Farm is located in the northwest corner of the site. Most of the agricultural land to the east of the site is registered under the Entry Level Environmental Stewardship Scheme.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations
 Remote assessment, viewed from accessible land

Biodiversity Interest:

Designated areas: No SBIs within site. The Wigan Flashes complex of SBIs is located approximately 1km to the northeast of the site. The Wigan Flashes is both a Local Nature Reserve and Site of Special Scientific Interest.

Priority habitats:

<u>present</u>	<u>probable</u>	<u>potential</u>
managed greenspace standing water		woodland important grassland

Priority species:

<u>present</u>	<u>probable</u>	<u>potential</u>
bats	common toad dunnock song thrush house sparrow	great crested newt bullfinch skylark lapwing tree sparrow corn bunting grey partridge linnet water vole brown hare

Statutorily protected species:

<u>present</u>	<u>probable</u>	<u>potential</u>
bats		great crested newt water vole

Other :

- Early Phase 1 data indicated an area of acid grassland with scrub located along the disused rail line. This area was not accessible and survey and would be required to verify.

General appraisal for Strategic Site:*Designated sites:*

- None present

Priority habitats:

- Ponds and managed greenspace are generally widespread across Wigan. Net loss should be avoided. Surveys for protected species would be required.
- Ponds and lodges may qualify as Priority Habitat. Further survey required.
- Acid grassland and woodland are generally not extensive within Wigan. Further survey required to identify if priority habitat still exists on site. If present, these habitats, due to their complexity or maturity should, where possible, be retained and protected *in situ* and provided with appropriate linkages to similar habitats and/or the wider landscape.
- Where *in situ* retention or no net loss of habitats is not achievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.

Priority species (likely to include some statutorily protected species)::

- Habitats suitable for roosting, foraging and commuting bats. Bats (pipistrelle species) have been recorded from grid squares containing the site.
- Great crested newt recorded approximately 600m to the northwest of the site. Wetland habitats may provide suitable habitat for great crested newt and common toad.
- Habitats within the site may be suitable for water vole.
- Brown hare recorded on agricultural land near the Wigan Flashes to the northeast of the site in 1995 and 2007. Agricultural land links the record area to the site which may provide suitable habitat to support local populations.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained *in situ*, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- There is not likely to be a requirement for offsetting net loss of priority habitats at this site.
- However, survey will be required to confirm presence/absence of protected and priority species, particularly amphibians. If significant species interest is identified which cannot be retained *in situ*, offsetting will be required.
- If ponds and linkages between ponds and the countryside to the north cannot be maintained, offsetting should be provided to ensure no net loss of the pond resource within the area.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	The Bell (TEP Site Ref 012)		
Site location:	Orrell	Central Grid Ref:	SD541054
Site area:	47 ha		

General description:

The site lies adjacent to the M6 with Orrell to the west and Pemberton to the east. The site consists predominantly of agricultural land with associated hedges and drainage channels. There are also 2 ponds on the site. A public right of way crosses the northern section of the site and links the residential areas of Orrell and Pemberton via a subway under the motorway. The arable areas to the north and south of the site are currently registered under the Entry Level Environmental Stewardship Scheme.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations

Biodiversity Interest:

Designated areas: No designated areas occur within or adjacent to the site, however there are several SBIs within 1km of the site containing significant areas of priority woodland habitat.

Priority habitats:

<u>present</u> standing water managed greenspace	<u>probable</u> hedgerow	<u>potential</u> arable field margins woodland
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Priority species:

<u>present</u> bats	<u>probable</u> dunnock house sparrow lapwing skylark song thrush starling	<u>potential</u> bullfinch corn bunting grey partridge linnet reed bunting tree sparrow yellowhammer great crested newt common toad
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Statutorily protected species:

<u>present</u> bats	<u>probable</u>	<u>potential</u> great crested newt
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Other :

No other biodiversity interest of note identified at this stage.

General appraisal for Strategic Site:*Designated sites:*

- None present

Priority habitats:

- Ponds and hedgerows are generally widespread across Wigan. Net loss should be avoided; replacement hedgerows should contribute to an integrated network. Surveys for protected species and to confirm important hedgerows would be required.
- Where *in situ* retention or no net loss of habitats is not achievable within the site, offsetting will be required. Suitable areas, such as restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.

Priority species (likely to include some statutorily protected species):

- Habitats suitable for roosting, foraging and commuting bats. Bats (pipistrelles species) have been recorded from grid squares containing the site.
- Habitats may be suitable to support significant numbers of farmland bird species, including ground nesting and passerine species.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained *in situ*, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- There is not likely to be a requirement for offsetting net loss of priority habitats at this site. However, if future survey indicates significant bird or amphibian interest, offsetting for species may be required.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Pepper Lane (TEP Site Ref 013)		
Site location:	Standish	Central Grid Ref:	SD 10768 52107
Site area:	50 ha		

General description:

Safeguarded land, partially within Council ownership. The site is surrounded by low density residential housing, with Shevington Moor to the west and Standish to the southeast. The site largely consists of agricultural land with several farms. There are some small areas of woodland, consisting of coniferous plantation to the west of the site and mixed plantation to the centre of the site. There are also several ponds and managed greenspace linked to Standish High School which lies to the east of the site.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations
 Site survey within accessible land
 Remote assessment, viewed from accessible land

Biodiversity Interest:

Designated areas: One SBI within site. An SBI adjacent to site and another near to the east.

SBI	Name:	Ponds at Robin Hill Farm West – A30
	Grade:	B
	Area:	1.3 ha
	Main classification feature(s):	Vegetation mosaic, amphibians, invertebrates
	Proportion within site:	100%

Priority habitats:

<u>present</u> managed greenspace standing water	<u>probable</u> hedgerow	<u>potential</u> woodland important grassland arable field margins
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Priority species:

<u>present</u> bats	<u>probable</u> great crested newt common toad house sparrow lapwing skylark song thrush starling water vole	<u>potential</u> corn bunting grey partridge reed bunting tree sparrow yellowhammer bullfinch linnet
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Statutorily protected species:

<u>present</u> bats	<u>probable</u> great crested newt water vole	<u>potential</u>
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Other :

- SBI citations indicate probable high invertebrate diversity across the site. Likely habitats to support invertebrate assemblages will be marshy grassland, hedgerow networks, woodland and woodland edge, pond and marginal vegetation.

General appraisal for Strategic Site:*Designated sites:*

- One Site of Biological Importance entirely within site, one immediately adjacent to site and a further site in close proximity.
- SBI within site should be retained in situ
- SBIs within site and adjacent to site should be protected and buffered - through open space provision or landscaping. Less preferable, but if SBIs are to be backed by gardens, appropriate conditions should be secured through planning consents to ensure suitable fencing is provided to prevent tipping, pet escape and encroachment within the SBI.
- SBIs within, adjacent and in close proximity (<1km) should be provided with linkages using appropriate green infrastructure, particularly addressing potential Great Crested Newt populations within these SBIs. Habitats within linkages should emulate those within the SBIs, in this case primarily grassland, marsh, scrub and open water.

Priority habitats:

- Ponds, managed greenspace and hedgerows are generally widespread across Wigan. Net loss should be avoided. Surveys for protected species and to confirm important hedgerows would be required.
- Ponds may qualify as Priority Habitat. Further survey required.
- Where *in situ* retention or no net loss of habitats is not achievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.

Priority species (likely to include some statutorily protected species):

- Great crested newt and common toad recorded on the site in the 1980s, with additional concentrations of great crested newt recorded in ponds to the south and east of the site. Other ponds within the site boundary provide potential habitat for great crested newts and connectivity should be maintained between ponds on site and beyond.
- Habitats suitable for roosting, foraging and commuting bats. Bats (common and soprano pipistrelles) have been recorded from grid squares containing the site.
- Water vole confirmed in close proximity to the east of the site. Habitats within the site may be suitable for water vole.
- Habitats may be suitable to support significant numbers of farmland bird species, including ground nesting and passerine species.
- The site contains a variety of scrub, woodland, grassland and pond habitats. Combined with the potential presence of amphibians, these habitats may be suitable to support reptiles, particularly grass snake.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained in situ, where possible. Retained habitats should be appropriately linked to the wider landscape.

No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- There is not likely to be a requirement for offsetting net loss of priority habitats at this site. However, old great crested newt records indicate populations may still be present. If survey indicates this is a single pond population, and retention and enhancement within the site is not possible, a population translocation may be required to suitable offsite habitats, with additional pond creation. Potential receptor opportunities would include extending the SBI Ponds North of Cleworth Hall (South) – A71 to directly link with the SBI Ponds Near New Manchester (East) – A72, both which is within the general range of the population on site.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration) refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Lodge Farm (TEP Site Ref 014)		
Site location:	Hindsford	Central Grid Ref:	SD 674 025
Site area:	60 ha		

General description:

Land to the east and north is partially owned by Wigan Council. The site mainly consists of agricultural land (both arable and pastoral), grassland (including acid grassland), woodland, hedgerows, scrub, farm buildings and managed greenspace. It is surrounded by residential housing to the north, east and west, and by agricultural land to the south. A stream transects the east of the site, running from north to south.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations
 Site survey within accessible land
 Remote assessment, viewed from accessible land

Biodiversity Interest:

Designated areas: One SBI located near to the site to the south, another to the northwest (see below).

SBI	Name:	Ponds at Robin Hill Farm West – A30
	Grade:	B
	Area:	1.3 ha
	Main classification feature(s):	Vegetation mosaic, amphibians, invertebrates
	Proportion within site:	100%

Priority habitats:

<u>present</u> hedgerow important grassland water corridor managed greenspace	<u>probable</u> arable field margins	<u>potential</u> woodland
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Priority species:

<u>present</u> bats	<u>probable</u> water vole great crested newt common toad farmland birds	<u>potential</u> brown hare
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Statutorily protected species:

<u>present</u> bats	<u>probable</u> water vole great crested newt	<u>potential</u>
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Other :

- Water voles, bullfinch and song thrush have been recorded within Atherton and Bedford Woods SBI, to the south of the site. The SBI Wetlands, Grasslands and Scrub off Colliery Lane, situated within 1km to the northwest of the site, is known to support populations of great crested newt.
- Strips of woodland which follow the route of a dismantled railway form a wildlife corridor to the southeast of the site. Chanters Brook provides another wildlife corridor running from north to south through the site.

General appraisal for Strategic Site:*Designated sites:*

- No SBIs are immediately adjacent to the site, and are therefore unlikely to be significantly affected by development. However, the nearest is roughly 500m to the south, and is buffered by agricultural fields.

Priority habitats:

- Hedgerows, streams, arable field margins and managed greenspace are generally widespread across Wigan, however net loss should be avoided. Surveys for protected species and to confirm important hedgerows would be required.
- Acid grassland is present on tipped colliery waste which forms the steep bank of Chanters Brook. This habitat, along with PHT woodland (if present) is generally not extensive within Wigan, and should be retained and protected in situ and provided with appropriate linkages.
- Where in situ retention or no net loss of habitats is unachievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.

Priority species (likely to include some statutorily protected species):

- Great crested newt and water voles have been recorded within 500m of the site to the southeast. Water voles have also been recorded at several other locations within 1 km, to the east and the southwest of the site.
- Habitats suitable for roosting, foraging and commuting bats. Bats (common pipistrelles) have been recorded from grid squares containing the site.
- Habitats may be suitable to support significant numbers of farmland bird species, including ground nesting and passerine species. Woodland BAP bird species may also be present, as both song thrush and bullfinch were recorded within Atherton and Bedford Woods to the south of the site.
- Habitats within site have potential to maintain local populations of brown hare, though none have been recorded within the locality of the site.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained in situ, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- Linkages should be retained along corridor of the brook and along the southeast boundary by the dismantled railway green corridor.
- If future survey indicates significant species interest, offsetting for species may be required. Potential areas to target offsetting include management of SBIs to the north and south of the site for their water vole and great crested newt interest.
- If it is not possible to retain acid grassland or other priority habitats present on site, offsetting will be required. Potential opportunities to target offsetting include small areas of acid grassland and heathland habitat near to the site. However, these patches were surveyed remotely (as they do not lie within council-owned land), and restoration work would therefore require landowner permission. Other opportunities for enhancement include habitat management within nearby SBIs and the Greenheart.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration) refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Westwood (TEP Site Ref 015)		
Site location:	Ince-in-Makerfield	Central Grid Ref:	SD584045
Site area:	34 ha		

General description:

The site is located in an area between the Wigan Flashes the Leeds Liverpool Canal within Wigan Greenheart. The Leigh branch of the canal passes through the northern section of the site and Westwood Flash SBI is adjacent to the west. The residential area of Ince-in-Makerfield lies to the east of the site, separated by the rail line. The site is predominantly council owned and contains two office building, with associated infrastructure in the northern section, a substation, a residential building to the south of the site, areas of woodland, scrub, grassland, waterbodies and reedbed. There is an area of pulverised fuel ash in the south western corner of the site.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 Site survey within accessible land
 Remote assessment, viewed from accessible land
 SBI citations

Biodiversity Interest:

Designated areas: One SBI adjacent to the site (A40 Westwood Flash). Further SBIs within Wigan Flashes complex to the south of the site. The Wigan Flashes are also a Local Nature Reserve and Site of Special Scientific Interest.

Priority habitats:

<u>present</u> reedbed water corridor (canal) water corridor standing water managed greenspace	<u>probable</u>	<u>potential</u> woodland important grasslands
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Priority species:

<u>present</u> bats	<u>probable</u> great crested newt common toad water vole	<u>potential</u> grass snake willow tit reed bunting
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Statutorily protected species:

<u>present</u> bats	<u>probable</u> great crested newt water vole	<u>potential</u> grass snake
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Other :

- The canal will function as a primary linkage across Wigan. It connects numerous biodiversity sites including SBIs and two SSSIs (Bryn Marsh & Ince Moss SSSI and Abram Flashes SSSI). The canal itself is designated as a SBI along part of its reach (to the north west of the Wigan).
- Adjacent rail corridor and wetland habitats may potentially support grass snake.
- Significant populations of marsh, broadleaved and dune helleborine and large numbers of common spotted and marsh orchids and hybrids and have been recorded within the scrub colonised areas of pulverised fuel ash on the adjacent Westwood Flashes SBI.
- Areas of acid grassland identified on the early phase 1 maps are currently more neutral, but have potential for restoration.
- A small area of potentially species-rich grassland was recorded at grid-reference SD 58335 04578, which supported the remains of two types of orchid
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration) refer to the Greenheart appraisal and Drawing G1771.002

General appraisal for Strategic Site:*Designated sites:*

- Westwood Flash SBI (A40) is adjacent to the site. SSSI, LNR and SBIs within Wigan Flashes complex to the south of the site.

Priority habitats:

- The Leeds-Liverpool Canal runs through the site to the north, part of an extensive designated greenlink across Wigan and a priority habitat type. The canal corridor should be protected and enhanced to improve its biodiversity and amenity interest.
- Ponds are generally widespread across Wigan but net loss should be avoided. Ponds may qualify as priority habitat. Further survey is required.
- Species rich neutral grassland, woodland and reedbed are generally not extensive within Wigan. These habitats, due to maturity or complexity should be retained and protected in situ and provided with appropriate linkages. The small area of reedbed found during survey will add to the resource of this priority habitat found within the adjacent SBIs in the Wigan Flashes complex.

Priority species (likely to include some statutorily protected species):

- Habitats suitable for roosting, foraging and commuting bats. Bats (soprano and common pipistrelle, Daubenton's bat, Leisler's bat and noctule) have been recorded from the grid square containing the site. A Daubenton's roost has been recorded north of Scotman's Flash, not far from the site.
- Great crested newts have been recorded within the adjacent SBI in the wet channel located on the boundary of this site. The pond within the site potentially provides suitable habitat.
- Birds recorded in the adjacent SBI include breeding Reed Bunting and probable breeding Willow Tit. The site has potential to support these species and additional priority bird species such as song thrush etc.
- Water voles are recorded within 500m of the site. Water vole has potential to occur along the canal, however the banks appear to be unsuitable for burrowing on the site. Reedbeds may provide potential feeding habitats.
- The site and surrounding area contains a variety of scrub, woodland, reedbed, grassland, pond and rail corridors. Combined with the known presence of amphibians and fish in the adjacent SBIs, these habitats may be suitable to support reptiles, particularly grass snake.

Biodiversity Enhancement Opportunity:

- The best opportunities for offsetting are likely to lie to the south of the site. A large area of council-owned grassland lies between Pearson's Flash and Turner's Flash (the north of which has been planted with trees). This area to the south of the plantation was recorded as largely acid grassland in the 1986 Phase 1 survey. It has since become neutrified, so that the majority is no longer Priority Habitat. However, a small patch of heathland remains at grid reference SD 58396 03376. There is therefore an opportunity to restore the areas which were once acid, and try to encourage the spread of heathland.
- To the south of Turner's Flash lies an area of open grassland mosaic on previously developed land, which may fit the Priority Habitat definition, but is under private ownership. It is, however, accessible by a Council-owned path. Again, a good opportunity may exist to manage this large area of colliery spoil-tipped land for its potential wildlife and biodiversity value.
- Immediately south of the development area is a green corridor of scrub following the path of a dismantled railway, which links to the grassland at Worsley Mesnes (another potential area for offsetting; see document 1771.024 Emerging key findings form - Pemberton Colliery 021). South of this corridor is a small area of neutral grassland within the boundary of Pearson's Flash SBI. Both of these areas are Council owned, and could potentially be enhanced for their wildlife value.
- To the east of the development site lies an area of grassland (grid reference SD 59084 05143) which was recorded as acid in 1986, but has now become largely neutral, with only a very small patch of acid species found from survey. Although this area is relatively isolated, it is Council-owned, and could potentially be restored to acid.
- Another possibility is that materials from the mounds of Pulverised Fuel Ash could be recovered from the development site to another suitable site to encourage the creation of calcareous habitats.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration) refer to the Greenheart appraisal and Drawing G1771.002

Site name:	Northern Crescent (TEP Site Ref 016)		
Site location:	Wigan	Central Grid Ref:	SD 583 058
Site area:	60 ha		

General description:

Town centre location, consisting of retail buildings and associated infrastructure, light industry to the south of the site, managed greenspace and pocket woodland. Rail lines run through the south of the site and Wigan Wallgate and Wigan North Western stations are within the boundary. Four SBIs lie within 1km of the site, one of them, Westwood Flash, being within 500m of the south of the site.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
Additional GIS data analysis

Biodiversity Interest:

<i>Designated areas:</i>	Due to its urban location, there are no designated sites in close proximity; however, SBIs are located less than 1km to the north and south of the site.
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Priority habitats:

<u>present</u> managed greenspace water corridor	<u>probable</u>	<u>potential</u> hedgerow woodland
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Priority species:

<u>present</u> bats	<u>probable</u>	<u>potential</u> house sparrow starling water vole
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Statutorily protected species:

<u>present</u> bats	<u>probable</u>	<u>potential</u> water vole
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Other :

- Although the trees within the town centre setting do not qualify as woodland priority habitat, they provide an important part of urban greenspace and provide roosting opportunities for some bird species and support insect assemblages.

General appraisal for LDF site:*Designated sites:*

- SBIs near to site should be protected and buffered - through open space provision or landscaping.

General appraisal for LDF site:*Priority habitats:*

- There is at least one hedgerow within the site boundary. As it is associated with urban rather than rural landscape, it may be less likely to be dominated by 80% native woody species, which is a requirement for PHT hedgerow habitat.
- Managed greenspace and hedgerows are generally widespread across Wigan, however net loss should be avoided. Surveys for protected species and to confirm important hedgerows would be required.
- The site does not provide significant connectivity or linkages across the area.
- Where in situ retention or no net loss of habitats is unachievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.

Priority species (likely to include some statutorily protected species):

- Habitats suitable for roosting, foraging and commuting bats are likely to be present, including buildings and trees. Two records of pipistrelle bats exist within 500m of the site. Whiskered/Brandt's and Daubenton's bats have also been recorded in grid squares containing the site.
- Habitats may be suitable to support BAP bird species. For example, starlings and house sparrows are known to roost in cavities in residential properties, and may species nest in trees.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained in situ, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- There is not likely to be a requirement for offsetting net loss of priority habitats at this site.
- However, any BAP habitats or species recorded in future surveys should be protected during development. Offsetting should be provided to ensure no net loss of species and resources within the area. Areas which could be targeted for offsetting might include nearby SBIs. Also, the provision of nest boxes for roosting bats and breeding birds could be incorporated within development plans.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration) refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Rectory Lane (TEP Site Ref 017)		
Site location:	Standish	Central Grid Ref:	SD 572 100
Site area:	111 ha		

General description:

Safeguarded land, partially within Council ownership. The residential area of Standish surrounds much of the site, with the Bradley Hall Trading Estate to the north. The site contains agricultural land, Standish Court Golf Club, woodland belts, a number of ponds, drains, a stream and areas of managed greenspace with public footpaths. A railway line runs north-south through the site.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations
 Site survey within accessible land
 Remote assessment, viewed from accessible land

Biodiversity Interest:

Designated areas: Two SBIs within site (see below for details). Two SBIs adjacent to site (White Bridge Wood A34 and Whelley Loop A41).

SBI	Name:	Fairhurst Lane – A32
	Grade:	C
	Area:	2.2ha
	Main classification feature(s):	Woodland and wetland habitats
	Proportion within site:	100%
SBI	Name:	Barrowcroft Wood – A33
	Grade:	B
	Area:	8.2ha
	Main classification feature(s):	Vegetation mosaic, amphibians, bryophytes, invertebrates
	Proportion within site:	98%

Priority habitats:

<u>present</u> standing water managed greenspace ancient woodland hedgerow	<u>probable</u> important grasslands	<u>potential</u> water corridor
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Priority species:

<u>present</u> great crested newt common toad bats	<u>probable</u> reed bunting farmland birds badger brown hare water vole	<u>potential</u> otter
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<i>Statutorily protected species:</i>		
<u>present</u> great crested newt bats	<u>probable</u> water vole	<u>potential</u> otter grass snake
<i>Other :</i>		
<ul style="list-style-type: none"> ■ The SBI citation for Barrowcroft Wood indicates probable high invertebrate and bryophyte diversity, particularly associated with the wetland and woodland habitats ■ The railway line which transects the site, running north-south, provides a wildlife corridor linking the site to the wider countryside. 		

General appraisal for LDF site:

Designated sites:

- Two Sites of Biological Importance entirely within site, two immediately adjacent to site and further sites in close proximity.
- SBIs within site should be retained in situ.
- SBIs within site and adjacent to site should be protected and buffered - through open space provision or landscaping. SBIs should not be backed by gardens. However, if this is unavoidable, appropriate conditions should be secured through planning consents to ensure suitable fencing is provided to prevent tipping, pet escape and encroachment within the SBI.
- SBIs within, adjacent and in close proximity (<1km) should be provided with linkages using appropriate green infrastructure - habitats within linkages should emulate those within the SBIs, in this case primarily grassland, marsh, scrub and open water.

Priority habitats:

- Ponds, streams, managed greenspace (parks and gardens) and hedgerows are generally widespread across Wigan. Net loss should be avoided. Surveys for protected species and to confirm important hedgerows would be required.
- Acid grassland, Neutral grassland and Ancient woodland are described within the citation for the Barrowcroft Wood SBI. These habitats, along with PHT Unimproved neutral grassland and other PHT woodland (if present) are generally not extensive within Wigan, and due to maturity or complexity should be retained and protected in situ and provided with appropriate linkages.
- Where in situ retention or no net loss of habitats is unachievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.

Priority species (likely to include some statutorily protected species):

- Great crested newt (1995) has been recorded within the site, from SBI Barrowcroft Wood.
- Habitats suitable for roosting, foraging and commuting bats are present. Bats (common and soprano pipistrelle, Daubenton's bat, brown long-eared bat and noctule) have also been recorded in grid squares containing the site.
- Water vole (2008), badger (1995), brown hare (2006) and pipistrelle bat (2000) species have been recorded in close proximity to the west of the site. Habitats within the site are likely to be suitable for these species.
- Reed bunting has been noted in the citation for Faithurst Lane SBI, within the southern half of the site, though no detailed recording has been carried out.
- Habitats may be suitable to support significant numbers of farmland bird species, including ground nesting and passerine species.

General appraisal for LDF site:

- The site contains a variety of woodland, grassland, scrub, pond and ditch habitats within the site. Combined with the known presence of amphibians on site, these habitats may be suitable to support reptiles, particularly grass snake. Common toad may also be present, although unrecorded within the site.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained *in situ*, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- Linkages should be retained along the green corridor associated with the railway track.
- If future survey indicates significant bird, mammal or amphibian interest, offsetting for species may be required. Potential areas to target offsetting include management of SBIs surrounding the site for their BAP species interest, for example Worthington Lakes, which is known to support four species of bat and water vole.
- If it is not possible to retain acid grassland, neutral grassland (if present) or other priority habitats present on site, offsetting will be required. Opportunities for offsetting include potential for restoration of acid and neutral grassland to the east of the site, as well as a small area of heathland, all situated on council owned land within the boundary of the greenheart. Other opportunities for enhancement include habitat management within the many SBIs surrounding the site.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration) refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Pocket Nook (TEP Site Ref 018)		
Site location:	Lowton	Central Grid Ref:	SJ 638 973
Site area:	68 ha		

General description:

Safeguarded land, located close to the Borough boundary with the town of Lowton to the north and the A580 to the south. The site consists predominantly of agricultural land with some farm buildings and an area of managed greenspace associated with Lowton High School to the northeast. There are a number of ponds and Carr Brook runs through the centre of the site.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
Additional GIS data analysis
SBI citations

Biodiversity Interest:

Designated areas: Pennington Flash SBI is located less than 1km north of the site.

Priority habitats:

<u>present</u> hedgerow managed greenspace water corridor (Carr Brook) standing water	<u>probable</u>	<u>potential</u> arable field margins
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Priority species:

<u>present</u> bats	<u>probable</u> farmland birds great crested newts common toad	<u>potential</u> brown hare water vole
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Statutorily protected species:

<u>present</u> bats	<u>probable</u> great crested newts	<u>potential</u> water vole
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Other :

- The SBI to the north of the site supports populations of great crested newt and water voles and supports an important assemblage of birds including breeding reed bunting and lapwing. Pipistrelles and noctules have been recorded in flight within the SBI.
- The Carr Brook watercourse crossing the site centrally, running east-west, and the verge of the East Lancashire road to the south of the site, also east-west, provide connectivity to the wider countryside. However this busy road will also act as a barrier to access to land to the south of the site.

General appraisal for LDF site:*Designated sites:*

- No Sites of Biological Importance lie within the site. Pennington Flash SBI to the north is unlikely to be significantly influenced by development the site, as residential housing and an industrial estate is situated between the SBI and the site.

Priority habitats:

- Ponds, rivers, arable field margins, managed greenspace (parks and gardens) and hedgerows are generally widespread across Wigan. Net loss should be avoided. Surveys for protected species and to confirm important hedgerows would be required.
- PHT woodland (if present) is generally not extensive within Wigan, and due to maturity or complexity should be retained and protected in situ and provided with appropriate linkages.
- Where in situ retention or no net loss of habitats is unachievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.

Priority species (likely to include some statutorily protected species):

- Great crested newt has been recorded within 500m of the site. This species and water voles have been recorded in the SBI to the north of the site. Habitats within site have potential to maintain local populations.
- Habitats may be suitable for roosting, foraging and commuting bats. Pipistrelles and noctules have been recorded in flight within the SBI to the north of the site.
- Habitats on site may be suitable for brown hare and common toad.
- Habitats may be suitable to support significant numbers of farmland bird species, including ground nesting and passerine species. Linnet, reed bunting, yellowhammer and willow tit have all been recorded within heathland roughly 2km to the southeast of the site. Lapwing and reed bunting have also been recorded within the SBI to the north.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained in situ, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- Linkages should be retained along corridor of the brook and along the south boundary by the verge of the East Lancashire road.
- There is not likely to be a requirement for offsetting net loss of priority habitats at this site. However, if future survey indicates significant bird, mammal or amphibian interest, offsetting for species may be required. Potential areas to target offsetting include Lowton Highfield Moss to the southwest, which supports BAP bird species, and Pennington Flash SBI, which supports great crested newt and water vole. Additionally, grassland which had previously been mapped as unimproved neutral in the Phase 1 Habitat Survey is located to the north and south of Pennington Flash SBI, and could be managed for wildlife.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration) refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Stone Cross Lane (TEP Site Ref 019)		
Site location:	Lowton	Central Grid Ref:	SJ 615 971
Site area:	27 ha		

General description:

Safeguarded land, consisting of agricultural land, ponds, residential properties and farm buildings, with a small patch of managed greenspace to the southwest, and patchy woodland to the southeast. The site is bordered by Stone Cross Park (industrial site) to the west, residential areas to the north, east and south east, and agricultural land to the south west. The A580 East Lancashire Road forms the southern boundary of the site.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations
 Site survey within accessible land
 Remote assessment, viewed from accessible land

Biodiversity Interest:

<i>Designated areas:</i>	One SSSI and SBI, Highfield Moss, is located 1.km to the south of the site. A second SBI, Lightshaw Limebeds, lies approximately 1km to the north.
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Priority habitats:

<u>present</u>	<u>probable</u>	<u>potential</u>
hedgerow standing water managed greenspace	arable field margins	woodland

Priority species:

<u>present</u>	<u>probable</u>	<u>potential</u>
bats	farmland birds common toad	brown hare great crested newt water vole common toad

Statutorily protected species:

<u>present</u>	<u>probable</u>	<u>potential</u>
bats		water vole great crested newt

Other :

- Farmland birds, including linnet, willow tit, reed bunting and yellowhammer, have been recorded to the south of the site, at Highfield Moss SBI. The SBI to the north supports populations of great crested newt, common toad and water vole.
- There are no obvious green corridors providing linkages with the wider countryside.

General appraisal for LDF site:*Designated sites:*

- There are no SBIs or other designated areas within the immediate vicinity of the site, the closest being roughly 1km away.

Priority habitats:

- Hedgerows are generally widespread across Wigan, however net loss should be avoided. Surveys for protected species and to confirm important hedgerows would be required.
- Several ponds are present within the site.
- A small area of managed greenspace is present to the southeast of the site
- Arable field margins and native woodland BAP habitats may also be present within the site. PHT woodland (if present) is generally not extensive within Wigan, and due to maturity or complexity should be retained and protected *in situ* and provided with appropriate linkages.
- Where *in situ* retention or no net loss of habitats is unachievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within nearby SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.

Priority species (likely to include some statutorily protected species):

- Great crested newt, common toad and water voles have been recorded in the SBI roughly 1km to the north of the site. Pond habitat which may well be suitable for these species are present on site.
- Habitats (including woodland and buildings) are present which are likely to be suitable for roosting, foraging and commuting bats. Common pipistrelle and noctule have been recorded from the grid squares containing the site.
- Farmland habitats may be suitable to support significant numbers of farmland bird species, including ground nesting and passerine species, which are known to be present in the SBI to the south.
- Habitats within the site have potential to maintain local populations of brown hare.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained *in situ*, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- If significant amphibian, bird, bat or water vole interest is identified through survey, enhancement offsite may be required to maintain net biodiversity interest in the area. Possible sites for additional enhancement would likely be within the two nearby SBI sites, or within the Greenheart.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Rothwell's Farm (TEP Site Ref 020)		
Site location:	Golborne	Central Grid Ref:	SJ 609 987
Site area:	17 ha		

General description:

The site mainly consists of privately owned agricultural land (both arable and pastoral) hedgerows, farm buildings and associated garden. It is surrounded by residential housing, a school and associated managed greenspace to the south and east, a reservoir and woodland to the east (Lightshaw Limebeds SBI), agricultural land to the north, and a railway line, factory and park to the west. A dismantled railway running along the northern border of the site forms a green corridor connecting the site to the SBI to the east.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
Additional GIS data analysis
SBI citations

Biodiversity Interest:

<i>Designated areas:</i>	Two SBIs are located within 500m of the site to the east (Ponds Near Lightshaw Lane and Lightshaw Limebeds), and another two within 1km to the north (Abram Flashes and Edge Green).
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Priority habitats:

<u>present</u> hedgerow managed greenspace	<u>probable</u>	<u>potential</u> arable field margins
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Priority species:

<u>present</u> bats	<u>probable</u> farmland birds	<u>potential</u> reptiles
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Statutorily protected species:

<u>present</u> bats	<u>probable</u> barn owl	<u>potential</u> reptiles
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Other :

- Lightshaw Limebeds SBI, which lies immediately to the east of the site, supports populations of song thrush, and skylark has been recorded at Ponds Near Lightshaw Lane SBI. Lapwing has been recorded within Abram Flashes SBI to the north.
- At least 14 bird species have been recorded in grid squares containing this site, suggesting a good species assemblage.
- A dismantled railway running along the northern border of the site forms a green corridor connecting the site to Lightshaw Limebeds SBI.

General appraisal for LDF site:*Designated sites:*

- Lightshaw Limebeds SBI lies immediately adjacent to the site (roughly 50m to the east), and may therefore be significantly affected by development. Ponds Near Lightshaw Lane SBI lies approximately 300m to the northeast.
- SBIs adjacent to site should be protected and buffered - through open space provision or landscaping. Less preferable, but if SBIs are to be backed by gardens, appropriate conditions should be secured through planning consents to ensure suitable fencing is provided to prevent tipping, pet escape and encroachment within the SBI.

Priority habitats:

- Hedgerows and arable field margins are generally widespread across Wigan, however net loss should be avoided. Surveys to confirm important hedgerows would be required.
- Where in situ retention or no net loss of habitats is unachievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.

Priority species (likely to include some statutorily protected species):

- Brown hares and barn owls have been recorded within 1km to the north of the site, and the site provides potential farmland habitat for these species.
- Habitats suitable for roosting, foraging and commuting bats and birds are also present. Pipistrelle and noctule bats have been recorded from the grid squares containing the site. Lightshaw Limebeds SBI to the east supports populations of song thrush, and skylark has been recorded at Ponds Near Lightshaw Lane SBI. Lapwing has been recorded within Abram Flashes SBI to the north.
- Although both water vole and great crested newt have been recorded within 500m of the site, no waterbodies or watercourses appear to be present on site to provide suitable habitat for these species.
- The dismantled railway corridor may provide potential habitat for reptile species.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained *in situ*, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- There is not likely to be a requirement for offsetting net loss of priority habitats at this site. However, if future survey indicates significant bird or bat interest, offsetting for species may be required. Potential areas to target offsetting include local SBIs, which support a range of bird species. Bat and bird boxes may also be incorporated into designs for new developments.
- SBIs in close proximity (<1km) could be provided with linkages using appropriate green infrastructure - habitats within linkages should emulate those within the SBIs.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Pemberton Colliery (TEP Site Ref 021)		
Site location:	Pemberton	Central Grid Ref:	SD560037
Site area:	24 ha		

General description:

Former colliery site lying between the developments of Highfield to the west and Goose Green to the east. The site is bordered by a rail line to the north and Smithy Brook runs along the southern boundary. The site has steep slopes to the eastern side and consists predominantly of grassland with some areas of scrub/woodland to the north and south. A number of informal paths cross the site.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 Site survey within accessible land
 Remote assessment, viewed from accessible land
 SBI citations

Biodiversity Interest:

Designated areas: One SBI adjacent to the site (A23 Blundell's Woods).

Priority habitats:

<u>present</u>	<u>probable</u>	<u>potential</u>
important grassland (acid) woodland water corridor (Smithy Brook)		important grasslands

Priority species:

<u>present</u>	<u>probable</u>	<u>potential</u>
water vole bats		song thrush bullfinch hedgehog

Statutorily protected species:

<u>present</u>	<u>probable</u>	<u>potential</u>
water vole bats		

Other :

- The mix of grassland habitats suggests the site may support interesting assemblages of invertebrates.
- Song thrush, bullfinch and hedgehog are recorded within nearby SBIs, and the site contains habitat with the potential to support these species.

General appraisal for LDF site:*Designated sites:*

- Blundell's Woods SBI is adjacent to the southwest corner of the site. Scrub extends from the woodland area along the southern edge of the site, with Smithy Brook running through this area. This area is also a floodzone area and forms part of an almost continuous green link from the SBIs at Winstanley Hall through to the Wigan Flashes and Amberswood Common. This link should be maintained.

General appraisal for LDF site:*Priority habitats:*

- Acid grassland and marshy grassland are generally not extensive within Wigan. These habitats, due to their complexity should, where possible, be retained and protected *in situ* and provided with appropriate linkages to similar habitats and/or the wider landscape.
- The area which is most likely to be of biodiversity interest is the grassland on the small hill to the south east of the site, and potentially the areas of marsh, rather than the flatter area of grassland in the north half of the site. The south and west-facing sides support acid grassland.
- Where *in situ* retention or no net loss of habitats is not achievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.
- The Smithy Brook corridor should be protected and enhanced to improve its biodiversity interest and maintain the link between SBIs to the east and west.

Priority species (likely to include some statutorily protected species):

- Pipistrelle and noctule bats have been recorded from the grid squares containing the site.
- Water voles are recorded along Smithy Brook to the east and west of the site. A stretch of the brook less than 500m to the east of the site is designated as an SBI due to its high density of water voles, with records of 1 pair per 12m, one of the highest densities in Wigan and Greater Manchester.
- The area of scrub and trees along the southern section of the site may provide suitable habitat for a number of species such as song thrush, bullfinch and hedgehog and bat roost and foraging opportunities.

Biodiversity Enhancement Opportunity:

- Directly to the east of the site at Worsley Mesnes (grid ref SD57053 03837), there is a area of grassland which was recoded as unimproved neutral with tall herb in the Phase 1 survey (a brief site visit did not reveal any Priority habitat grassland). It lies between a playing field and recreation ground. Smithy Brook SBI runs through this site, which was found to support a high density of water voles in a 2004 survey. Patches of woodland and scrub are also present, and paths run through the area. Management of this area for wildlife may provide an opportunity for offsetting. Immediately to the north, another strip of grassland follows the path of a dismantled railway track (not visited in this survey). This was also recorded as neutral in the 1986 Phase 1 survey, and is likely to form an important wildlife corridor, connecting with the Wigan Flashes.
- South of the development site is an area of Council-owned grassland which was also recorded as neutral in the Phase 1 survey, although site survey only revealed a very small patch of species-rich grassland on a slope on the northern border (likely to be on an area of colliery spoil). Fairy flax was recorded in this area. The majority of the site consisted of seemingly species-poor neutral grasslands. Reedbeds have been recently installed to the north as a water filter system.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Former Bickershaw Colliery (TEP Site Ref 022)		
Site location:	Leigh	Central Grid Ref:	SJ632998
Site area:	18 ha		

General description:

The site is located at the western tip of Leigh as the township extends along the canal. It consists of derelict grassland and scrub habitats on former industrial development land off Plank Lane. Numerous tracks and paths are identified on the aerials as remaining either as bare ground or hard standing; many desire lines criss-cross the site.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations
 Remote assessment, viewed from accessible land

Biodiversity Interest:

<i>Designated areas:</i>	One SBI to north of site - Bickershaw Colliery Grade B SBI – A62 One SBI to south of site - Pennington Flash Grade A SBI – A78 is south of canal
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Priority habitats:

<u>present</u> reedbed managed greenspace water corridor (canal)	<u>probable</u>	<u>potential</u> woodland important grasslands
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Priority species:

<u>present</u> bats	<u>probable</u> song thrush dunnock bullfinch	<u>potential</u> water vole common toad great crested newt
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Statutorily protected species:

<u>present</u> bats	<u>probable</u> bullfinch	<u>potential</u> water vole great crested newt kingfisher
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Other :

- The Leeds-Liverpool Canal is allocated as a green corridor.
- The canal will function as a primary linkage across Wigan. It connects numerous biodiversity sites including SBIs and two SSSIs (Bryn Marsh & Ince Moss SSSI and Abram Flashes SSSI). The canal itself is designated as a SBI along part of its reach (to the north west of the Wigan).
- At least 73 bird species have been recorded in grid squares containing this site. Although the majority of records will originate from the flashes, the records suggest an excellent species assemblage in the local area.

General appraisal for Strategic Site:*Designated sites:*

- Two Sites of Biological Importance recorded to the north (Bickershaw Colliery Grade B SBI – A62) and south (Pennington Flash Grade A SBI – A78) of the site.

Priority habitats:

- A small area of managed greenspace (amenity grassland) present in northwest of site.
- Reedbeds are present within the drains on the north boundary of the site, connecting to the extensive wetland habitats within the Bickershaw Colliery SBI just to the north.
- The former colliery use in the area raises the possibility of some acid grassland or open mosaic habitats developing over previously developed land; further survey is required to accurately identify the presence of priority habitats.
- The Leeds-Liverpool Canal borders the site to the south, part of an extensive designated greenlink across Wigan and a priority habitat type. The canal corridor should be protected and enhanced to improve its biodiversity and amenity interest.
- The canal provides important linkage to numerous SBIs within Wigan and also the two SSSIs in Wigan. The canal corridor should be enhanced through the promotion of appropriate green infrastructure providing a buffer to the canal.

Priority species (likely to include some statutorily protected species):

- Water vole has potential to occur along the canal;
- The site is directly connected to Bickershaw Colliery and land to the west of Bickershaw Colliery, where significant numbers of great crested newt records are found.
- The open grassland and scrub provides opportunities for bird species known to occur in Bickershaw Colliery or Pennington Flash, such as song thrush, bullfinch and dunnock.
- The canal may be important for commuting and foraging bat species, particularly Daubenton's and Soprano Pipistrelle bats. Noctule has been recorded from grid squares containing the site.
- Standing water on site may be suitable for amphibian species, including great crested newt and common toad, although no records for great crested newts were identified within 500m of the site.

Statutorily protected species (those which are not also priority species):

- The canal and brook to the east (Westleigh Brook) may support kingfisher.

Biodiversity Enhancement Opportunity:

- Linkages should be retained along the canal.
- There is not likely to be a requirement for offsetting net loss of priority habitats at this site. However, if significant amphibian or bird interest is identified through survey, enhancement offsite may be required to maintain net biodiversity interest in the area. Possible sites for additional enhancement would likely be the Bickershaw Colliery SBI to the north, or land west of Bickershaw Colliery.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration) refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	North of Leeds Liverpool Canal (TEP Site Ref 023)		
Site location:	Leigh	Central Grid Ref:	SJ640997
Site area:	19 ha		

General description:

The site is roughly linear, being enclosed between the Leeds-Liverpool Canal on its south boundary and the western arm of the Leigh conurbation on its north boundary. The site appears to be typical derelict grassland, with patches of woodland and areas of tall herb/scrub developing. Numerous paths and desire lines criss-cross the site. The western extent of the site, at Plank Lane, appears to be former colliery with woodland scrub developing.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations
 Site survey within accessible land
 Remote assessment, viewed from accessible land

Biodiversity Interest:

<i>Designated areas:</i>	No SBIs within site. Pennington Flash Grade A SBI – A78 is to south (south of canal) and Bickershaw Colliery Grade B SBI – A62 is to north.
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Priority habitats:

<u>present</u> managed greenspace water corridor (canal) standing water	<u>probable</u>	<u>potential</u> important grassland woodland
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Priority species:

<u>present</u> bats	<u>probable</u> song thrush dunnock bullfinch	<u>potential</u> water vole great crested newt common toad
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Statutorily protected species:

<u>present</u> bats	<u>probable</u>	<u>potential</u> water vole great crested newt kingfisher
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Other :

- SBI citations indicate high breeding and wintering bird interest in addition to high invertebrate interest, although many species recorded are not priority species.
- The Leeds-Liverpool Canal is allocated as a green corridor.
- The canal will function as a primary linkage across Wigan. It connects numerous biodiversity sites including SBIs and two SSSIs (Bryn Marsh & Ince Moss SSSI and Abram Flashes SSSI). The canal itself is designated as a SBI along part of its reach (to the north west of the Wigan).
- At least 73 bird species have been recorded in grid squares containing this site. Although the majority of records will originate from the flashes, the records suggest an excellent species assemblage in the local area.

General appraisal for Strategic Site:*Designated sites:*

- Two Sites of Biological Importance recorded to the north and south of the site.

Priority habitats:

- A small area of managed greenspace (amenity grassland) present in northwest of site.
- Early Phase 1 data indicate marshy grassland present in west of site, but GIS data and aerial photographs show this largely covered by woodland canopy, although some areas of more open grass sward persist.
- The former colliery use in the area raises the possibility of some acid grassland or open mosaic habitats developing over previously developed land; further survey is required to accurately identify the presence of priority habitats.
- The Leeds-Liverpool Canal borders the site to the south, part of an extensive designated greenlink across Wigan and a priority habitat type. The canal corridor should be protected and enhanced to improve its biodiversity and amenity interest.
- The central extent of the site is identified as a floodrisk corridor, incorporating category 3 (high risk). Sustainable drainage design within the site should aim to enhance the canal corridor, for example by creating ponds or retention basins and/or swales.

Priority species (likely to include some statutorily protected species):

- Water vole has potential to occur along the canal;
- Standing water on site may be suitable for amphibian species, including great crested newt and common toad, although no records for great crested newts were identified within 500m of the site.
- The open grassland and scrub provides opportunities for bird species known to occur in Bickershaw Colliery or Pennington Flash, such as song thrush, bullfinch and dunnock.
- The canal may be important for commuting and foraging bat species, particularly Daubenton's and soprano pipistrelle bats. Both species have been recorded from grid squares containing the site, in addition to common pipistrelle, Natterer's, brown long-eared and noctule bats.

Protected species (those which are not also priority species):

- The canal and brook to the east (Westleigh Brook) may support kingfisher.

Biodiversity Enhancement Opportunity:

- Linkages should be retained along the canal.
- There is not likely to be a requirement for offsetting net loss of priority habitats at this site. However, if significant bird interest is identified through survey, enhancement offsite may be required to maintain net biodiversity interest in the area. Possible sites for additional enhancement would likely be the Bickershaw Colliery SBI to the north, or land west of Bickershaw Colliery.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Bridgewater (TEP Site Ref 024)		
Site location:	Leigh	Central Grid Ref:	SJ659996
Site area:	15 ha		

General description:

The site is located in the southern half of Leigh. It is largely developed with industrial units, comprising extensive buildings and hard standing with landscaping virtually absent from their environs. The Leeds-Liverpool Canal bisects the site and on its eastern end within the site possesses mature tree canopy along the northern bank. A small plot of land contiguous with this line of trees appears to remain undeveloped and comprises predominantly grassland and tree canopy.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations

Biodiversity Interest:

Designated areas: One SBI to west of site – Pennington Flash Grade A SBI – A78

Priority habitats:

<u>present</u> water corridor (canal)	<u>probable</u>	<u>potential</u> woodland
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Priority and protected species:

<u>present</u> bats	<u>probable</u> water vole	<u>potential</u>
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Statutorily protected species:

<u>present</u> bats	<u>probable</u> water vole	<u>potential</u> kingfisher
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Other :

- The Leeds-Liverpool Canal is allocated as a green corridor.
- The canal will function as a primary linkage across Wigan. It connects numerous biodiversity sites including SBIs and two SSSIs (Bryn Marsh & Ince Moss SSSI and Abram Flashes SSSI). The canal itself is designated as a SBI along part of its reach (to the north west of the Wigan).

General appraisal for Strategic Site:*Designated sites:*

- One SBI to west of site - Pennington Flash Grade A SBI – A78, connected to site by the Leeds-Liverpool Canal.

General appraisal for Strategic Site:*Priority habitats:*

- The Leeds-Liverpool Canal separates the north and south parts of the site. It is likely to be heavily trafficked in this section; a docking area is present on the north bank.
- The canal provides important linkage to numerous SBIs within Wigan and also the two SSSIs in Wigan. The canal corridor should be enhanced through the promotion of appropriate green infrastructure providing a buffer to the canal.
- Mature broadleaved tree canopy is present along the north bank, around the north and west banks of the docking area and in the small plot of land to the north of the canal.

Priority species (likely to include some statutorily protected species):

- Water vole is recorded within 500m of the site and has potential to occur along the canal, although in the section passing through the site the banks appear highly artificial. Redevelopment of the site should consider naturalising the canal banks, or providing enhancement through the provision of coir rolls or willow breaks to create linkage for water voles and other riverine species along this highly urban stretch of the canal;
- The small plot of grassland and trees within the site may support nesting birds such as song thrush, but are unlikely to support significant numbers.
- The canal may be important for commuting and foraging bat species, particularly Daubenton's and Soprano Pipistrelle bats. Daubenton's and common pipistrelle bats have been recorded in grid squares containing the site.

Statutorily protected species (those which are not also priority species):

- The canal may support kingfisher; despite being highly artificial and urban in this section, the presence of overhanging trees provides potential foraging perches.

Biodiversity Enhancement Opportunity:

- Linkages should be retained and enhanced along the canal corridor by encouraging appropriate green infrastructure.
- There is not likely to be a requirement for offsetting net loss of priority habitats at this site.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	The Hillock (TEP Site Ref 025)		
Site location:	Astley	Central Grid Ref:	SD 698 002
Site area:	13.6 ha		

General description:

The site consists of agricultural land (arable and grassland), farm buildings, a pond, several paths, woodland and a stream. The site is bordered by the A580 to the south, residential areas to the north, east and south west, farmland to the south and east, and a school and associated managed greenspace to the west.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
Additional GIS data analysis
SBI citations

Biodiversity Interest:

Designated areas: Three SBIs: Astley Hospital, located within 300m of the site to the north, Tyldesley Sewage Works and Marsh at Lower Green, both within 1km to the south of the site.

Priority habitats:

<u>present</u>	<u>probable</u>	<u>potential</u>
hedgerow water corridor standing water managed greenspace		woodland arable field margins

Priority and protected species:

<u>present</u>	<u>probable</u>	<u>potential</u>
bats	great crested newt common toad	brown hare water vole farmland birds

Statutorily protected species:

<u>present</u>	<u>probable</u>	<u>potential</u>
bats	great crested newt	water vole

Other :

- Astley Hospital SBI to the north of the site is not known to support populations of BAP species, but is designated on the basis of its interest for vegetation, invertebrates and birds, and contains an orchard Priority Habitat type. Marsh at Lower Green SBI to the south of the site is known to support great crested newts common toad and reed bunting. Tyldesley Sewage Works SBI to the south of the site supports populations of reed bunting.
- Astley Brook watercourse crosses the site centrally, running northwest- southeast, and the verge of the East Lancashire road to the south of the site, also northwest-southeast, providing connectivity to the wider countryside. However this busy road will also act as a barrier to access to land to the south and east of the site.
- At least 17 bird species have been recorded in grid squares containing this site., suggesting a good species assemblage in the local area.

General appraisal for Strategic Site:*Designated sites:*

- The SBI near to the site is buffered by residential housing, and is therefore unlikely to be significantly affected by development.

Priority habitats:

- Hedgerows, ponds, rivers and arable field margins are generally widespread across Wigan, however net loss should be avoided. Surveys for protected species and to confirm important hedgerows would be required.
- PHT woodland (if present) is generally not extensive within Wigan, and due to maturity or complexity should be retained and protected in situ and provided with appropriate linkages.
- Where in situ retention or no net loss of habitats is unachievable within the site, offsetting will be required. Suitable areas, such as restoration or enhancement within SBIs or restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for the site.

Priority species (likely to include some statutorily protected species):

- Habitats suitable for roosting, foraging and commuting bats are present. Common and soprano pipistrelles are present in the grid squares containing the site.
- Habitats may be suitable to support significant numbers of farmland bird species, including ground nesting and passerine species.
- Great crested newt has been recorded within 500m (1998) south of the site. Habitats within the site have potential to maintain local populations, if still present.
- Habitats may be suitable to support brown hare, common toad and water vole, though these species have not been recorded within 1km of the site.
- Surveys for protected and priority species should accompany any planning applications. Habitats supporting protected and priority species should be retained in situ, where possible. Retained habitats should be appropriately linked to the wider landscape.
- No net loss of protected or priority species should be permitted. Where habitats supporting these species cannot be retained *in situ*, compensation should be provided which should seek to provide net gain for these species.

Biodiversity Enhancement Opportunity:

- Linkages should be retained along corridor of the brook and along the southeast boundary by the verge of the East Lancashire road.
- There is not likely to be a requirement for offsetting net loss of priority habitats at this site. However, if future survey indicates significant bird, mammal or amphibian interest, offsetting for species may be required. Potential areas to target offsetting include the Marsh at Lower Green SBI to the south of the site, which is known to support great crested newts common toad and reed bunting, and Tyldesley Sewage Works which supports reed buntings and other bird populations. There are also several areas which had been recorded as PHT acid grassland to the south of the site, near to the working colliery, which could be managed to enhance remnants of this habitat. However, these do not lie within council-owned land, and would therefore require landowner permission. Other opportunities for enhancement include habitat management within SBIs, such as Astley Hospital and others nearby, and the Greenheart.
- For more information regarding areas of opportunity for biodiversity enhancement (and restoration), refer to the Greenheart appraisal and Drawing G1771.002.

Site name:	Greenheart		
Site location:	Central Wigan	Central Grid Ref:	SD610031
Site area:	5535 ha		

General description:

Large area of predominantly greenbelt land running the length of central Wigan. The site is mainly comprised of agricultural land, with two LNRs, two SSSIs and thirty SBIs (including the Wigan Flashes) spread across the Greenheart. There are also several residential developments, farm buildings and fields, playing fields, golf courses, parks, cemeteries, woodlands, marshes, bogs, swamps, fields, ponds, watercourses, open drains and disused land such as former colliery workings.

Method of appraisal:

Phase 1 maps vs aerial photograph interpretation
 Additional GIS data analysis
 SBI citations
 Site survey within accessible land
 Remote assessment, viewed from accessible land

Biodiversity Interest:

<i>Designated areas:</i>		Two SSSIs, two LNRs and thirty SBIs within site.
SSSI	Name:	Abram Flashes SSSI
	Condition:	Unfavourable/ no change (southern section) Favourable (northern section)
	Area:	41ha
	Proportion within site:	100%
SSSI	Name:	Bryn Marsh and Ince Moss SSSI
	Condition:	Favourable
	Area:	70.61ha
	Proportion within site:	100%
LNR	Name:	Wigan Flashes LNR
	Area:	176ha
	Proportion within site:	100%
LNR	Name:	Borsdane Wood LNR
	Area:	24ha
	Proportion within site:	100%
SBI	Name:	A36 Bryn Marsh
	Grade:	A
	Area:	16.24ha
	Main classification feature(s):	Vegetation mosaic, ferns, bryophytes, birds, Lepidoptera, Odonata, other invertebrates, fish
	Proportion within site:	100%
SBI	Name:	A46 Horrocks Flash
	Grade:	A
	Area:	58.25ha
	Main classification feature(s):	Vegetation mosaic, bryophytes, mammals, birds, fish amphibians, Lepidoptera, Odonata, other invertebrates
	Proportion within site:	100%

SBI	Name:	A31 Scotsman's Flash
	Grade:	A
	Area:	38.68ha
	Main classification feature(s):	Vegetation mosaic, mammals, birds, Lepidoptera, Odonata, other invertebrates
	Proportion within site:	100%
SBI	Name:	A37 Ochre flash
	Grade:	B
	Area:	13.95ha
	Main classification feature(s):	Vegetation mosaic, mammals, birds, amphibians, Lepidoptera, Odonata, other invertebrates, fish
	Proportion within site:	100%
SBI	Name:	A38 Turner's Flash
	Grade:	B
	Area:	13.57ha
	Main classification feature(s):	Vegetation mosaic, bryophytes, birds, amphibians, Lepidoptera, Odonata, other invertebrates, fish
	Proportion within site:	100%
SBI	Name:	A39 Pearson's Flash
	Grade:	A
	Area:	20.19ha
	Main classification feature(s):	Vegetation mosaic, birds, Lepidoptera, Odonata, other invertebrates, fish
	Proportion within site:	100%
SBI	Name:	A40 Westwood Flash
	Grade:	A
	Area:	17.0ha
	Main classification feature(s):	Vegetation mosaic, ferns, bryophytes, fungi, birds, amphibians, Lepidoptera, Odonata, other invertebrates
	Proportion within site:	100%
SBI	Name:	A42 Fairclough Wood
	Grade:	C
	Area:	3.63ha
	Main classification feature(s):	Vegetation mosaic, bryophytes, ferns, mammals
	Proportion within site:	10%
SBI	Name:	A43 Leeds Liverpool Canal - Adlington to Wigan
	Grade:	C
	Area:	11.65
	Main classification feature(s):	Vegetation mosaic, mammals, birds, Lepidopterans, other invertebrates
	Proportion within site:	100%
SBI	Name:	A44 Arley Woods (West)
	Grade:	A
	Area:	2.58ha
	Main classification feature(s):	Vegetation mosaic, ferns, bryophytes, mammals, birds
	Proportion within site:	80%

SBI	Name:	A45 Worthington Lakes
	Grade:	A
	Area:	21.33ha
	Main classification feature(s):	Vegetation mosaic, bryophytes, mammals, birds
	Proportion within site:	90%
SBI	Name:	A48 Red Rock Railway Cutting (South)
	Grade:	C
	Area:	4.54ha
	Main classification feature(s):	Vegetation mosaic, ferns, bryophytes, fungi, mammals, birds, Lepidoptera
	Proportion within site:	100%
SBI	Name:	A47 Haigh Plantations
	Grade:	A
	Area:	86.85ha
	Main classification feature(s):	Vegetation mosaic, ferns, bryophytes, fungi, mammals, birds, amphibians, Lepidoptera, other invertebrates, geological
	Proportion within site:	95%
SBI	Name:	A50 Amberswood Common
	Grade:	B
	Area:	87.76ha
	Main classification feature(s):	Vegetation mosaic, ferns, bryophytes, mammals, birds, amphibians, Lepidoptera, Odonata
	Proportion within site:	100%
SBI	Name:	A52 Kirkless Lane
	Grade:	A
	Area:	14.7ha
	Main classification feature(s):	Vegetation mosaic, ferns, bryophytes, birds, amphibians, Lepidoptera, Odonata
	Proportion within site:	100%
SBI	Name:	A54 Park Lane Colliery
	Grade:	B
	Area:	9.48ha
	Main classification feature(s):	Vegetation mosaic, bryophytes, birds, Lepidoptera
	Proportion within site:	100%
SBI	Name:	A55 Low Hall Park
	Grade:	A
	Area:	7.83ha
	Main classification feature(s):	Vegetation mosaic, mammals, birds, Lepidoptera, Odonata
	Proportion within site:	100%
SBI	Name:	A57 Hindley Deep Pits
	Grade:	C
	Area:	8.41ha
	Main classification feature(s):	Vegetation mosaic, bryophytes, birds, amphibians, Lepidoptera, Odonata
	Proportion within site:	100%

SBI	Name:	A58 Woodshaw Colliery
	Grade:	C
	Area:	17.82ha
	Main classification feature(s):	Vegetation mosaic, ferns, bryophytes, fungi, birds
	Proportion within site:	100%
SBI	Name:	A60 Reservoirs East of Leyland Park
	Grade:	B
	Area:	2.15ha
	Main classification feature(s):	Vegetation mosaic, bryophytes, amphibians, Odonata, other invertebrates
	Proportion within site:	100%
SBI	Name:	A61 Borsdane Wood (West)
	Grade:	A
	Area:	26.87ha
	Main classification feature(s):	Vegetation mosaic, bryophytes, fungi, mammals, birds, Lepidoptera, other invertebrates
	Proportion within site:	100%
SBI	Name:	A62 Bickershaw Colliery
	Grade:	B
	Area:	40.83ha
	Main classification feature(s):	Vegetation mosaic, birds, amphibians, Lepidoptera, Odonata
	Proportion within site:	100%
SBI	Name:	A63 Wetland and Scrub at Hindley Green
	Grade:	B
	Area:	7.48ha
	Main classification feature(s):	Vegetation mosaic, birds, amphibians, Lepidoptera, Odonata
	Proportion within site:	100%
SBI	Name:	A64 Disused Railway at Hindley Green
	Grade:	C
	Area:	6.29%
	Main classification feature(s):	Vegetation mosaic, bryophytes, birds, amphibians, Lepidoptera
	Proportion within site:	100%
SBI	Name:	A59 Barlow's Farm
	Grade:	A
	Area:	23.81ha
	Main classification feature(s):	Vegetation mosaic, bryophytes, birds, amphibians, Lepidoptera, other invertebrates
	Proportion within site:	100%
SBI	Name:	A73 Edge Green
	Grade:	C
	Area:	1.06ha
	Main classification feature(s):	Vegetation mosaic, bryophytes, birds
	Proportion within site:	100%

SBI	Name:	A76 Ponds Near Lightshaw Lane
	Grade:	A
	Area:	11.83ha
	Main classification feature(s):	Vegetation mosaic, birds, amphibians, Lepidoptera, Odonata, other invertebrates
	Proportion within site:	100%
SBI	Name:	A90 Abram Flashes
	Grade:	A
	Area:	44.05ha
	Main classification feature(s):	Vegetation mosaic, mammals, birds, Lepidoptera, other invertebrates
	Proportion within site:	100%
SBI	Name:	A93 Culvert & Lodge at Standish
	Grade:	B
	Area:	1.39ha
	Main classification feature(s):	Vegetation mosaic, ferns, mammals, birds, other invertebrates
	Proportion within site:	5%
SBI	Name:	A99 Platt Bridge Heath
	Grade:	C
	Area:	3.36ha
	Main classification feature(s):	Vegetation mosaic, bryophytes
	Proportion within site:	100%

Priority habitats:

<p><u>present</u> hedgerow water corridor (rivers, streams and canals) standing water (ponds & lake) heathland important grasslands (acid, calcareous & marshy) managed greenspace woodland wet woodland reedbeds arable margins mossland (lowland raised bog)</p>	<p><u>probable</u> important grasslands (species rich neutral & open mosaic)</p>	<p><u>potential</u> lowland fen</p>
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Priority species:

<p><u>present</u> water vole brown hare common toad great crested newt brown long-eared bat noctule bat soprano pipistrelle bat hedgehog house sparrow bullfinch yellowhammer grasswack pondweed bittern</p>	<p><u>probable</u></p>	<p><u>potential</u> reptiles native black poplar</p>
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<i>Priority species:</i>		
black-tailed godwit dunnock willow tit grasshopper warbler skylark reedbunting song thrush grey partridge lapwing		
<i>Statutorily protected species:</i>		
<u>present</u> great crested newt water vole barn owl kingfisher badger bats	<u>probable</u>	<u>potential</u> reptiles
<i>Other :</i>		
<ul style="list-style-type: none"> ■ Invertebrates were a main classification feature for the majority of SBIs; only the following SBI citations did not indicate a level of importance for invertebrate populations: A42 Fairclough Woods, A44 Arley Woods, A45 Worthington Lakes, A58 Woodshaw Colliery, A73 Edge Green and A99 Platt Bridge Heath. Likely habitats to support invertebrate assemblages will be grassland mosaic, hedgerow networks, woodland and woodland edge, reedbed, pond and swamp and watercourses, including ditches. ■ A number of sections of railway transect the site, many of them now dismantled, which provide useful green corridors for wildlife. One section of dismantled railway runs horizontally to the west of the Greenheart, connecting the northern borders of Amberswood Common SBI with Scotsman’s Flash SBI. Another runs east, passing Platt Bridge Heath SBI, and forming the Disused Railway at Hindley Green SBI, which connects large areas of grassland at Hindley Green and Dangerous Corner. Another dismantled section runs south to Bickershaw Colliery. Colliery ■ Various watercourses run though the Greenheart, notably the Leeds - Liverpool Canal. This runs the vertical length of the northern half, and then skirts the western border where it joins Wigan Flashes. It runs past Scotsman’s Flash to transect the southern half of the Greenheart, reaching Pennington Flash in the southeast. 		

<p>General appraisal for Greenheart:</p> <p><i>Designated sites:</i></p> <ul style="list-style-type: none"> ■ This area of Wigan contains two Local Nature Reserves, two Sites of Special Scientific Interest and thirty Sites of Biological Importance. <p><i>Priority habitats:</i></p> <ul style="list-style-type: none"> ■ Hedgerows are generally widespread across Wigan. Net loss should be avoided; replacement hedgerows should contribute to an integrated network. Surveys for protected species and to confirm important hedgerows would be required. ■ Extensive areas of reedbed are clustered around the locality of the Wigan Flashes and in Bickershaw Colliery SBI, and scattered throughout the Greenheart.
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General appraisal for Greenheart:

- Several rivers, canals, brooks and other watercourses are located within the Greenheart boundary, including those with feed into the Leeds - Liverpool Canal. Similarly, ponds are numerous and widespread. Several of these may qualify as priority habitat, especially those where water vole and other priority species are recorded.
- Several small and relatively isolated areas of Lowland acid grassland and, to a lesser extent, Lowland heathland have developed on sites of colliery spoil within the boundary of the Greenheart. These patches include areas to the north and east of Barlow's Farm SBI, to the north of the border of Kirkless Lane SBI, along the dismantled railway south of Forshaw's Tip (accessed by public footpath), to the north of the commons land at Dangerous Corner, to the east of Leyland Park, along the Leeds-Liverpool Canal east of the Dover Bridge (likely, although no permission to access track), a small area of heathland lying between Turner's Flash and Pearson's Flash, as well as land within several SBIs such as Platt Bridge Heath, Woodshaw and Bickershaw Collieries.
- Small areas of calcareous grassland have colonised the burnt furnace slag present within Kirkless Lane SBI, and are also known to be present at Horrocks Flash.
- Managed greenspace and Arable margins occur throughout the Greenheart.
- Wet woodland is known to occur in various SBIs including Low Hall Park and Horrocks Flash, the latter produced by mining subsidence.
- Lowland mixed deciduous woodland occurs within many SBIs, such as the Fairclough Wood ancient woodland, and throughout the Greenheart.
- Remnant peatland is present within SBIs such as Bryn Marsh, where it is dominated by cottongrass and Sphagnum, and at Horrocks Flash, where it supports purple moorgrass and several orchid species.
- Open mosaic habitats on previously developed land is likely to occur at the ex-colliery directly south of Turner's Flash, however permission to survey has not yet been granted. However, publicly-used pathways lead to the site. This habitat may also occur at Bickershaw Colliery.
- Marshy grassland, which may constitute the priority habitat type, occurs as Bickershaw Colliery and Park Lane, supporting a range of species including common orchid and southern marsh orchid.
- "Species-rich neutral grassland" has been recorded within the citations for several SBIs such as Park Lane, although it is uncertain as to whether these areas will match the criteria for the priority habitat.

It is uncertain as to whether priority habitat lowland fen is present within Greater Manchester. An area within Abram Flashes has been recorded as Lowland fen within the National Habitat Inventory, a Natural England dataset. No mention of fen has been made in the SBI citation, although a citation for the SSSI mentions tall herb fen, dominated by meadowsweet and great willowherb. Fen is generally associated with river courses and peatland. Apart from the presence of the Leeds-Liverpool Canal, Hay Brook appears to remain in a natural form from aerial photos, and could therefore be subject to flooding.

Priority species (likely to include some statutorily protected species):

- Several water vole records are clustered around the centre of the Greenheart, including at Amberswood Common and Turner's and Pearson's Flashes. Other records exist at Borsdane Wood, Wothington Lakes, Bickershaw Colliery, Platt Bridge, Freezeland Farm, along Hockery Brook south of Hindley Deep Pits, Abram Flashes, Lightshaw Lime Beds and several to the east of Pennington Flash.
- Great crested newt records are located around the Bickershaw Colliery site, within Haigh Country Park, to the west of Hindley Hall, and around Kirkless Lane.

General appraisal for Greenheart:

- The Flashes are also known to support a number of breeding bird BAP species, including yellowhammer, bittern, black-tailed godwit, dunnoek, willow tit, grasshopper warbler, bullfinch and house sparrow.
- Skylark, reedbunting, and song thrush have been recorded at various SBIs including Amberswood Common and Bickershaw.
- Grey partridge and lapwing were also recorded in a recent breeding bird survey at Bickershaw.
- Common toad has been recorded within various SBIs including Kirklees Lane, Bryn Marsh, Horrocks Flash and Hindley Deep Pitts.
- Hedgehog has been recorded at Amberswood Common SBI.
- Recent bat records are scattered sparsely across the Greenheart, with several present at Hope Carr Nature reserve and around Ince Moss, as well as Platt Bridge and Bradshaw Hall farm.
- Grasswack pondweed is recorded along the Leeds Liverpool Canal where it intersects with Red Rock Lane.
- It is possible that grass snake, slow worm and common lizard are present within the Greenheart. As these species were not classified as BAP species until very recently, their presence may not be highlighted in all reference material. Relatively little data is currently available on reptile species distribution in the Wigan area. As other species records become available, additional priority species may be identified within the Greenheart.
- Native black poplar may be present within woodland habitats

Statutorily protected species (not listed above):

- Recent Badger records are found on the northern border of the greenheart around Worthington Lakes.
- Kingfisher has been recorded within Horrocks Flash and along the northern-most stretch of the Leeds Liverpool Canal within the Greenheart boundary.
- Barn owl was sighted at Hope Carr Nature Reserve, and pellets were found recently at Lightshaw Hall

Biodiversity Enhancement Opportunity Areas (refer also to Drawing G1771.002):

- Where *in situ* retention or no net loss of habitats is unachievable within safeguarded land sites, offsetting will be required. Suitable areas, such as restoration, enhancement or new habitat creation within the Greenheart, should be identified in advance of development applications for these sites.
- Biodiversity Enhancement Opportunity Areas (BEOAs) within the Greenheart where such restoration work could be focused include:
 - **Area A** – The area of heathland/acid/neutral grassland mosaic to the north of Kirkless Lane (now threatened by scrub encroachment and neutrification). Also, relatively large areas of council-owned grassland exist are present around the Recycling centre and associated landfill site, which had previously been mapped as acid grassland but have since become more neutral in character. Some of the landfill site has already been planted with broadleaved trees. These areas lie close to Kirkless SBI;
 - **Area B** - The area of open mosaic habitat which occurs at the ex-coliery directly south of Turner's Flash, which is considered likely to meet the Priority habitat definition. However, permission to survey the land is still required. Management of this area could potentially improve its value for wildlife further. Also, the area of council-owned grassland (previously acid grassland) to the north of Turner's flash has potential for management. A small area of heathland is present at grid reference SD58396 03376. If acid grassland is restored at this site, the spread of heathland could also be encouraged.

- **Area C** - The area of council-owned landfill to the east of Amberswood Common (sparse Purple Moor grass has been recorded here, though the grassland is largely species-poor neutral). Also, the area of council-owned neutral grassland to the east of this landfill, which is next to an old colliery site, and was recorded as acid in the 1986 Phase 1 survey. It still retains some areas of acid grassland and marshy habitat, although parts are being developed into football pitches;
- **Area D** - Council-owned grassland within the area of Bickershaw Colliery. This may form the Priority habitat open grassland mosaic on previously developed land, and could potentially be managed as habitat for wildlife. Also, to the south of this site lies a large area of council-owned grassland which was once a site for spoil tipping, but shows some level of diversity in patches;
- **Area E** - Along the Leeds Liverpool Canal east of the Dover Bridge there is likely to be acid grassland on colliery spoil (although permission to access the track that runs along the canal is required). Remote survey with binoculars indicated that acid grassland was present, but may be suffering from nitrification/ scrub encroachment.
- **Area F** - Heathland along the dismantled railtrack (and public footpath) south of Forshaws Tip, which is at risk of being shaded by trees. Also, the large area of colliery spoil tipped land to the north and east of Barlow Farm, some of which retains acid grassland and small patches of heather. However, these are all on privately-owned land.
- **Area G** - Ashton Heathland is currently being restored by the Ashton Heath Residential Group, an associate group of BCTV. However, there has been some difficulty in re-establishing Ling heather, and this process may be benefited by help from the council. Areas of council owned neutral grassland (un-surveyed but mapped as neutral in the 1986 Phase 1 survey) lie to the north of this heathland, which could also potentially be managed to improve species diversity.
- **Area H** - To the west of Bickershaw and directly east of Park Lane Colliery is an area of bare ground on private land near to a disused shaft, which may be interesting but un-surveyed due to access issues. Potential areas of marshy grassland lie to the east, again un-surveyed.
- Commons land to the east of Leigh Road (see above - East of Leigh Road TEP ref 006) has been highlighted as potential land for redevelopment. A small section of this to the north is council-owned, and holds potential for restoration of acid grassland on areas of colliery spoil if offsetting of other development is required.
- Council-owned areas around and to the south of Westwood Park Gardens (east of Westwood Flash SBI) are due to be developed, however, there may be some potential for restoration within and around the developed areas, to be incorporated within the planning design. Another possibility is that materials could be recovered from the mounds of Pulverised Fuel Ash and used elsewhere, to encourage the creation of calcareous habitats (see above - Westwood TEP ref 015).