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# Wharf Road

## Environmental Strategy

Prepared by LUC for the Lee Valley Regional Park Authority

February 2013



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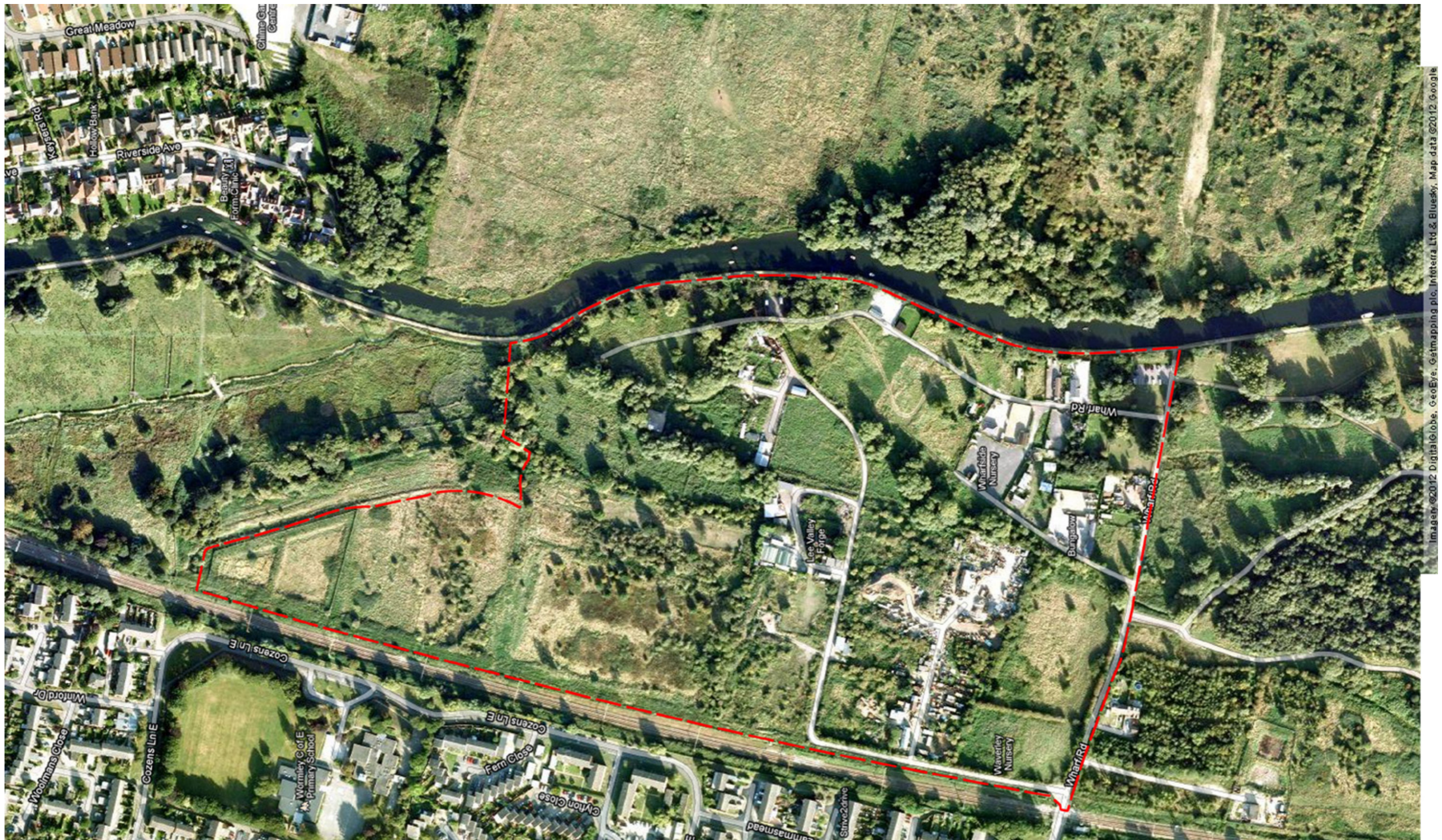


Figure 1: Study area

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# Contents

Background	7
Site history	7
Landscape Character	9
Context	9
Site description	9
Ecological appraisal	11
Recent local change	13
Principal issues	15
LVRPA objectives	15
Strategic objectives	15
The Masterplan	17
Visual integration	17
Access improvements	17
Ecological enhancement	19
Recreational facilities	19
Management plan	19
Enforcement and acquisition	19
Land outside of the Authority’s ownership	21
Revenue implications	21
Summary	21
Annex 1: Nazeing Meads & Nazeing Marsh	23

Park Boundary
  LVRPA Ownership

0 80 160 240 320m



Figure 2: Ownership plan

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## Background

The LVRPA has commissioned LUC to develop proposals for sites in the north of the park where landscape is under stress. This Environmental Strategy has been developed to Stage B of the RIBA and Landscape Institute's work stages. The principal objective of the strategy is to identify opportunities that exist for these areas which can be realised in the most cost effective way.

The study area is shown on **Figure 1**.

## Site history

The site was developed incrementally for holiday chalets in the 1920s and 1930s. Over time these chalets have been interspersed with a series of non-conforming users including boarding kennels and a waste transfer site. Since the 1970s the Authority has purchased plots as they have come to open market. However during the last 20 years there have been an increasing number of incursions by Gypsies and Travellers who through private treaty have purchased sites and occupied them without the benefit of planning permission.

Several of these sites now benefit from temporary planning permissions and others may be lawful in planning terms through the passage of time. Others have been the subject of enforcement action by the local planning authority Broxbourne Borough Council. The Council has recently been proactive in addressing this matter and has on several occasions served pre-emptive injunctions to prevent unauthorised occupation of plots.

In January 2008 the Authority agreed that this area should be included as part of the River Lee Country Park and that the Authority should continue with its policy of land purchase.

The site is currently identified in the adopted Park Plan (2000) as part of a Landscape Enhancement area requiring the protection and enhancement of features which make up its landscape character.

Recently the planning authority lost two planning appeals on these plots. The Planning Inspectors considered that amongst other things the lack of up to date and robust policies of both the local planning authority and the Authority were an important consideration in their respective decisions. The appeal decisions have given the Authority a revived impetus to address and deliver its commitments made in 2008.



Figure 3: Site Assets

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## Landscape Character

The site lies in Northern Zone of the Lee Valley - an area that is characterised by open farmland and a network of restored former gravel pits – and within Landscape Character Area 3: Nazeing Marsh – Waltham Abbey. The area is envisaged in the Park Plan as being “restored river floodplain for informal recreation based on high quality countryside and heritage value.” More specific proposals for this part of the landscape character area relate to “informal recreation and nature conservation with an emphasis on quiet recreation within a wooded, grassland and water environment”.

## Context

The site lies in an area of particularly limited access caused by the railway, Lee Navigation and River Lee and the paucity of east-west roads (the nearest cross valley route – Old Nazeing Road is 1100m to the north, and the east west track adjacent to Tumford Brook is 1900m to the south). There are effectively only three entry points to the site – Wharf Road level crossing, and the Navigation towpath extending to north and south.

The site and its context is therefore even more remote than is normal for this part of the Lea Valley. The lack of bridging points places additional emphasis on pedestrian routes, in particular the Navigation towpath, to form connections to other Lea Valley facilities such as the River Lee Country Park to the south and the Old Mill & Meadows car park to the north.

This severance is expressed physically through relatively long drive and walk times, and psychologically by a feeling of separation from its landscape and social context.

## Site description

The 18.2ha site has varied landscape quality which generally reduces with distance from the Navigation. The site exhibits significant and abrupt changes where the negative qualities of non-park related uses and unauthorized residential development collide with attractive remnants of an earlier riverine landscape. Unfortunately the number and spread of this form of development means that surrounding areas feel their detrimental effect. This characteristic is closely mirrored by the amount and disposition of land outside the Authority's ownership (which in the southern part of the site amounts to approximately half of the area). This issue is far more significant by comparison to Carthagenia. For land ownership see **Figure 2**.

Unauthorised residential plots are characterised by high screen walls / fences, extensive areas of hardstanding and chalets and caravans. Some of these have encroached onto adjacent areas of open land.

Non-park related uses include the Lea Valley Forge, Nut Tree Nursery and the waste transfer unit. In each case and in particular the latter the users have significant visual impact featuring yards, sheds, dumped materials and general dereliction. Access tracks are in poor condition. Even areas not in the above uses generally evoke neglect with visible dumped material, lack of land management, and fences, roads and tracks in poor condition.

Despite this there are areas with positive landscape qualities:

- The towpath corridor: a tranquil well-maintained route, generally well screened to the west and with attractive views across the Navigation to Nazeing Marsh to the east.
- Areas of wet woodland: providing both visual separation and amenity per se.
- Hedgerows: presumably relict features from the area's previous flood plain landscape – particularly along the towpath and on the north side of Wharf Road.
- Scrub and grassland matrix: extensive areas in the northern part of the site forming an extension to Silvermeade wildlife site immediately to the north. This area of scrub and grassland is sufficiently large and separate from the remainder of the site to retain its own, positive landscape character.

In this respect Wharf Road exhibits a greater diversity of landscape character despite its small area when compared to other sites within the Regional Park.

The site lies within flood zone 3 (1 in 100 years flood). This constrains the types of uses and additional built form which would be considered acceptable.

For site assets see **Figure 3**.



Figure 4: Ecological Assets

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## Ecological appraisal

The site is directly south of Silvermeade, a relic of floodplain grassland which used to be widespread through the valley. Lee Valley Regional Park Authority has been actively restoring Silvermeade since the 1990s. Silvermeade now supports an area of riverside meadowland varying from dry neutral grassland to sedge-dominated marshy grassland. It has numerous ditches with diverse aquatic vegetation and has scattered scrub and trees. One of these ditches, the Broxbourne Ditch extends from Silvermeade, through the site to the country park south of Wharf Road. For further details of Silvermeade's ecological resource see **Annex 1**.

The site itself is composed of a mosaic of habitat types includes fen/swamp vegetation, semi-improved neutral grassland, poor semi-improved grassland, scrub and willow dominated woodland. There are a number of species rich hedges within the site including one that runs almost the entire length of the site along the River Lee. Aside from semi-natural habitats the site also contains large expanses of hard standing associated with caravans and other dwellings.

This mosaic of semi-natural habitats is of notable ecological value and will provide a useful resource for a variety of species, including bats, birds, invertebrates and water vole that are known to use the Silvermeade site. The areas of semi-improved neutral grassland are relatively species rich including bird's-foot trefoil *Lotus corniculatus*, meadow vetchling *Lathyrus pratensis*, common knapweed *Centaurea nigra*, creeping bent *Agrostis stolonifera*, common bent *Agrostis capillaris* and crested dog's-tail *Cynosurus cristatus*. The fen/swamp areas are generally dominated by common reed *Phragmites australis* but also support a variety of other species including brown sedge *Carex disticha*, hard rush *Juncus inflexus*, jointed rush *Juncus articulatus*, meadowsweet *Filipendula ulmaria*, hemp agrimony *Eupatorium cannabinum* and marsh bedstraw *Galium palustre*.

**Figure 4** shows the broad disposition of these habitats.

The site includes significant opportunities for ecological enhancement. This enhancement should seek to expand the area of water vole habitat provided by Silvermeade further into the Wharf Road site. This could include many of the methods used to restore Silvermeade in the 1990s including the restoration and creation of ditches to improve habitats for water voles. Other ecological enhancement measures should seek to reduce the scrub that is invading much of the grassland within the site, and reducing the dominance of great willowherb *Epilobium hirsutum* in the west of the site.



Looking towards Wharf Road from towpath with Silvermeade to the right



Existing site boundaries are generally good native hedgerows



View of Nazeing Marsh over the River Lee Navigation



Occasional views from the towpath into remnant plots



Visual intrusion on towpath



View from towpath through the car park towards Wharf Road



Wharf Road car park, space for 25 cars



Recent management has allowed light into the car park



Interpretation board adjacent to the car park



Wharf Road itself is tarmaced with tree and hedge boundaries



Railway crossing is the sole vehicular access into the site

## Recent local change

Because of its remoteness the site is likely to have been relatively unaffected by the Olympic and Paralympic Games and the consequent increased awareness of the Lea Valley. Even those using the towpath are probably unaware of the majority of the site immediately to the west. The inclusion of the site within the River Lee Country Park in 2008 appears to be a mainly a statement of intent with only limited apparent impact apart from significant enhancement of Silvermeade to the north.



Track adjacent to railway forming the western study area boundary



Waste Transfer Station takes up a significant proportion of the site area



Kennels to the north of the east-west access track



Access track continues to Nut Tree Nursery (currently vehicle servicing)



View across reeds and scrub to Nut Tree Nursery



View east across reeds towards static caravans



Static caravans in walled yards along central access track



Selection of living accommodation in yard off Wharf Road



Abandoned pre-fab building between Wharf Road north link & River Lee



Fenced area between Wharf Road north link and River Lee Navigation



Previous plot tidied and safely fenced



Abandoned site full of rubbish

## Principal issues

- Physical and visual intrusion of unauthorised residential development and non-conforming users.
- The number, disposition and total area of these uses particularly in the south of the site.
- High degree of severance caused by rail and river with only three access points to the site.
- Poor quality access within the site.
- The relatively high percentage of the site area not owned by the Authority.
- An overriding character of neglect.

## LVRPA objectives

The Authority's Landscape Vision 1998 recommends:

- Retention and protection of the positive and attractive character of this landscape.
- Rationalisation of signage design for the Country Park to fit with the rest of Lee Valley Park, through the use of a Park wide corporate identity, and ensure signage from other landowners is also rationalised so that it does not clutter the landscape and detract from the Park image.
- Improving the image of access points and gateways, capitalising on its positive character, through the control of other non-Park signage at gateways, and the maintenance of road verges within the Park boundary.
- Retention and enhancement where necessary of the green edge to the Park boundary.

More specifically for Wharf Road the Authority's aims are:

- Creation of a defined river corridor to the east, and better integration with the River Lee Country Park to the south.
- Ecological enhancement in accordance with the Authority's BAP.
- Integration and control of established commercial and residential uses within the Country Park, and
- Provision of a circulation network connecting to both the country park and the Navigation.

## Strategic Objectives

We suggest there are five strategic objectives:

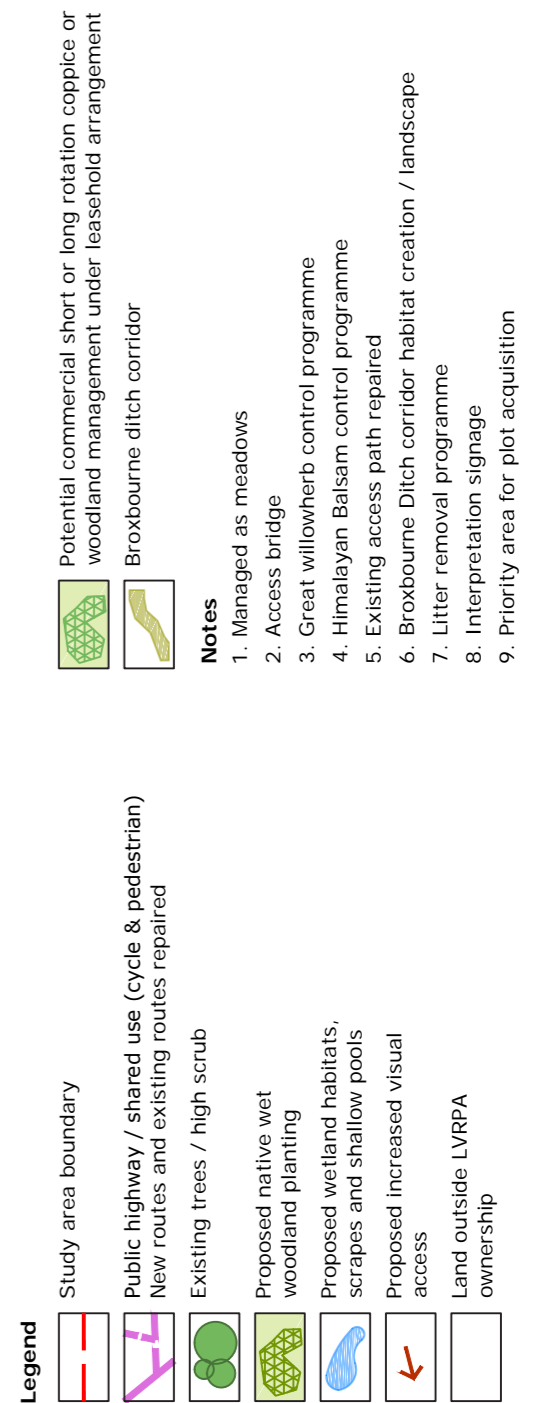
1. Extension of the positive qualities of surrounding areas to the south (Country Park), east (river corridor) and north (nature conservation) into the site.
2. Strengthening of existing landscape features including:
  - The Broxbourne ditch
  - The river edge, and
  - The use of selected areas of wet woodland planting to screen nonconforming users and residential plots. (This shall be used as an interim measure to support the development of the strategy).
3. Improving legibility and permeability of the landscape through:
  - Access improvements to provide circuits and increased access to Silvermead including repairs/upgrades to existing routes
  - Integration of the site with Silvermeade and the Country Park.
4. Strengthening biodiversity through:
  - Habitat creation including increased variety of habitats including open water and marsh habitats to encourage species such as water vole.
5. Measures to support this landscape strategy will include:
  - Enforcement against illegal encroachment onto the Authority's land, and
  - Continued selective acquisition of plots when they come on to the open market.

The first of these measures would be undertaken in conjunction with Broxbourne District Council.



Figure 5: Masterplan

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## The Masterplan

The masterplan shown in **Figure 5** covers the whole of the study area marked by the red line. It includes land outside of the Authority's ownership. The masterplan is therefore a vision for the area which will be progressively delivered as and when resources permit.

Delivery is likely to be through a number of initiatives including:

- Changes in land management practices by the Authority
- Capital works
- The Authority working with Broxbourne District Council on enforcement actions where appropriate, and
- Consideration of the use of compulsory purchase orders where / as resources permit.

## Visual integration

- Planting of locally native wet woodland to extend and consolidate existing scattered tree clumps to provide enhanced screening to visually intrusive uses. Approximately 2ha area of mixed forestry transplants and larger stock with associated protective fencing and establishment management. Species should be mainly willow, alder and birch with some oak, with a focus on the creation of alder carr. (Strategic objective 2; cost allowance £60,000).
- Thinning / removal of existing vegetation to improve intervisibility of areas such as the Navigation and to remove the legacy of chalet plot development. The focus will be on the removal of inappropriate species (mainly surviving garden species from previous chalet development) and poor quality trees (Strategic objectives 1 and 3; cost allowance £15,000).

## Access improvements

1. Repairs to existing roads, tracks and paths including Wharf Road (£125,000 allowance). It is suggested that the unmade up road accessing the Lee Valley Forge and Nut Tree Nursery is upgraded / repaired at a future date. (Strategic objective 3).
2. Creation of a major new pedestrian spine parallel with the Broxbourne Ditch corridor. This will provide a different pedestrian environment and relieve pressure on the Navigation towpath, (Strategic objective 3; cost allowance £100,000).
3. Extension of the existing path network by further new tracks and paths as shown. This will form extra links and circuits reducing reliance on the towpath. An additional path along the southern edge of Silvermeade Wildlife site would be subject to agreement by those responsible for running the site. Restricted access is suggested to the scrub and grassland areas south-west of Silvermeade using a timber post and stock mesh fence to reduce both personal safety risks and disturbance of wildlife. (Strategic objective 3; cost allowance £75,000)
4. Creation of a new maintenance access point to Silvermeade including a short linking track, bridge and lockable gate. This will avoid having to use the towpath which is owned by the Canal and Rivers Trust (Strategic objective 3; cost allowance £40,000).
5. New links should include suitable access control measures to prevent unwanted vehicular and motorcycle access, (Strategic objective 3; cost allowance £10,000).
6. Monitor use of the existing car park in the Country Park and consider extension if necessary.



Track through reeds and scrub land in north east corner



Willows growing in Broxbourne Ditch in the north east corner



View up into north west corner of site of grassland and scrub



Existing scrub and large shrubs in the central / northern area



View through hedge into south west corner with good quality grassland and scrub invasion



View from Wharf Road into smaller scrub / grassland area



Scrub and grassland area between Wharf Road and eastern access track



Entrance to existing visitor area to the south of Wharf Road



Picnic site amongst the trees south of Wharf Road

## Ecological enhancement

The ecological qualities of Silvermeade would be extended both to the area north east of Nut Tree Nursery, and along the Broxbourne Ditch. This would effectively extend Silvermeade and start to provide a recognisable landscape character which is currently desperately missing. Areas to the south west of Silvermeade would be managed as grassland (west part), and scrub grassland matrix (east part). This would be achieved through a number of initiatives:

- Investigate provision of new scrapes, shallow pools and marsh habitat creation proposed to the north and south of Nut Tree Nursery. This will extend existing habitats in Silvermeade and provide visually accessible habitats adjacent to new paths. Arisings would need to be disposed of in selected locations on site to avoid any reduction in flood plain capacity. Contamination surveys and Phase 1 and Phase 2 Ecological surveys are also required. (Cost allowance £80,000).
- Broxbourne Ditch: removal of selected trees and pollarding of ditchside willows to reduce excessive shading; removal of litter; desilting and possible easing of bank gradients in limited numbers of selected locations. This will create habitat suitable for water vole. (Cost allowance £80,000)
- A scrub control programme is recommended for areas south-west of Silvermeade, and north of Wharf Road. This will conserve potentially interesting grassland and reedbed habitat. This should be accompanied by a litter clearance programme in the Wharf Road area (Cost allowance £25,000).
- Active intervention against the over dominance of great willowherb in the north west of the site and Himalayan Balsam in the north east is also suggested (Cost allowance £10,000).
- Hedgerows on Wharf Road and on the Navigation should be subject to cyclical management, removal of inappropriate species and localised gapping up (Cost allowance £20,000 over 5 years).
- Introduce meadow management on land west of Silvermeade. Investigate feasibility of using cattle for grazing. This could only proceed after completion of works to reduce great willow herb. (Capital costs included in access improvements above).

## Recreation facilities

It is not thought necessary or appropriate to provide facilities such as seating, picnic tables or interpretation in the majority of the site. An illustrated information board is suggested for the car park, along with additional signage for information, interpretation and orientation throughout the study area (Cost allowance £10,000). All other facilities should be located to the south of Wharf Road.

## Management Plan

The area south west of Silvermeade should be considered for inclusion within the wildlife site and a suitable management plan prepared.

All other publicly accessible areas should be also subject of improved but low-key management with particular attention to litter removal, maintenance and development of ditch network, path repairs, and scrub control.

## Enforcement and acquisition

It is understood that in several locations there has been incremental encroachment on to LVRPA land. Action should be taken so that this will act as a deterrent to further encroachment.

Acquisition of all land not owned by the Authority will take considerable resources and time. It should be considered a long-term objective with the interim objective being visual and physical containment of these intrusive uses.

Acquisition will be largely dependent on properties coming onto the open market and therefore will be opportunistic. However we suggest that priority is given to acquiring properties close to the Navigation and in particular properties near Nut Tree Nursery. Acquisitions here would have particularly significant benefits in enhanced access and landscape quality in this narrow stretch of publicly accessible river corridor.

These actions will support strategic objective 5.



## Land outside of the Authority's ownership

A significant proportion of the study area lies outside the Authority's ownership. All but two of the residential plots have been illegally developed. In total the area of these plots is less than that of the non-conforming uses also on privately owned land. Of these the largest are the waste transfer station, Nut Tree Nursery and the Kennels. Taken together these illegal and non-conforming uses have a very significant detrimental impact on the area, and an impact far in excess of its footprint.

It is therefore proposed that the Authority working with the local planning authority could undertake a long term strategy of removing such uses. This could be through a range of actions including planning enforcement action and compulsory purchase if necessary. This could be in tandem with the local council's identification of an alternative Gypsy and Traveller site to relocate the existing residents, and identification of other sites for the other non park related uses. Given the scale of the task this represents a long-term objective.

Acquisitions / enforcement should if possible target properties with the highest level of negative impact and/or are in strategically important locations. However it is acknowledged that it is more likely that properties will be reclaimed on an opportunistic manner.

Once taken into the Authority's ownership plots should be cleared of all development, services capped off and made safe and all inappropriate landscape fabric removed. Adjacent existing landscape character and provision should then be extended into the newly acquired land as a general rule although each case should be treated on merit.

Larger areas of non-conforming use may present issues of contamination and unsafe ground conditions unsuitable for public access. Given that remediation is likely to have significant costs it is suggested that these areas are assumed to be fenced to prevent public access, and to serve as a refuge area for wildlife. It is suggested that the Authority investigates demand for medium term lease of these areas by those wishing to plant, manage and crop short rotation coppice. This could include areas of hazel coppice and/ or the cultivation of cricket bat willows. Such uses would provide a good fit with the Authority's sustainability and landscape aspirations at the same time as being cost neutral. If successful this initiative could be extended to other Authority owned land that is currently under-utilised and in search of a new and more productive use.

These actions will support strategic objective 5.

Plans for the possible allocation by Broxborne Borough Council of a permanent Gypsy/Traveller site are considered inappropriate within the Park, and are incompatible with this vision for Wharf Road. Such plans are likely to compound the current issues identified above.

## Revenue implications

It is acknowledged that the above proposals will inevitably lead to increased revenue costs resulting from additional management activity. Some of this cost increase will result from an increase in the area which is to be managed. This could be in the large part addressed by the short-rotation coppice proposal or some other suitable leasehold activity.

For the remainder it is vital that the proposed capital investment in the above environmental enhancements is underwritten by appropriate ongoing management not only of the landscape fabric but also of new and existing assets such as fencing and site furniture. Public awareness of the condition of such elements is important in creating attitudes to the wider landscape, and these in turn are related to the behavior of users in this environment.

We recommend that the Authority's continued commitment to managing, enhancing and improving the recreational, biodiversity and conservation value of its landholding should include an increase to management budgets. We strongly suggest that this welcome move should include increase of management budgets, even if this results in some reduction in capital spend.

Both the proposed informal landscape character and the reliance on ecologically oriented management principles are cost effective and highly appropriate means of managing large areas. However they are still reliant on some degree of highly targeted management and repair. Without this Wharf Road is unlikely to break out of its current cycle of neglect.

## Summary

The Wharf Road site has the potential to be significantly improved through these suggested measures.

Success will be dependent on acknowledging the limits placed by extensive and dispersed areas outside the Authority's ownership, and by achieving rapid and effective screening of these intrusive uses. This, together with the other proposals and enhanced management, will allow the site to become an attractive and accessible extension to the River Lee Country Park to the south and Silvermeade to the north.

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# Annex 1

Silvermeade ecological details



#### OLD DESCRIPTION:

A large area of wet/marshy alluvial grassland divided by a brook/drain running approximately north-south through the site. To the north and south-east the community is rough damp grassland with coarse grasses dominant. The sward supports Hairy Sedge (*Carex hirta*), Common Knapweed (*Centaurea nigra*), Meadow Buttercup (*Ranunculus acris*), Great Willowherb (*Epilobium hirsutum*), Marsh Horsetail (*Equisetum palustre*), Meadow Vetchling (*Lathyrus pratensis*) and Meadowsweet (*Filipendula ulmaria*), and rushes (*Juncus* spp.) are also quite common. At the northern end Common Reed (*Phragmites australis*) is frequent while sedges (*Carex* spp.) are more common to the south. The western field supports mainly sedge marsh, mainly Greater Pond-sedge (*Carex riparia*) with some higher, drier ground in the central area. Other species present include Reed Canary-grass (*Phalaris arundinacea*) and Hard Rush (*Juncus inflexus*) plus occasional Meadowsweet (*Filipendula ulmaria*) and Tufted Hair-grass (*Deschampsia cespitosa*). At the southern end of the site and fringing part of the western boundary is a bed of Common Reed. The site is drained by numerous ditches that support a reasonable diversity of aquatic species. Planted groups and single trees plus shrubs and small areas of Bramble (*Rubus fruticosus* agg.) are also present, mainly around the perimeter of the site. The site is good for dragonflies and Water Voles (*Arvicola amphibius*) have been recorded along the drains. Wildlife Site criteria: Grassland indicators; fen and swamp indicators.

#### 2011 DESCRIPTION:

An area of riverside meadowland varying from dry neutral grassland to sedge-dominated marshy grassland. The land has numerous ditches with diverse aquatic vegetation and has scattered scrub and trees. Drier areas are dominated by False Oat-grass, Yorkshire Fog and Cock's-foot, whilst the damper areas have Lesser Pond Sedge and abundant Hard Rush. Neutral grassland indicators include Crested Dog's-tail, Hardheads, Meadow Vetchling, Pepper-saxifrage and Bird's-foot Trefoil. The damper areas support Angelica, Marsh Bedstraw, Brown Sedge, Meadowsweet, Common Fleabane and Jointed Rush. The ditches are richly vegetated and support a diversity of aquatic and marginal plants, with associated areas of tall fen vegetation. Aquatics include Fat and Ivy-leaved Duckweeds, although Least Duckweed and Water Fern are also frequent. Marginals include Water Dock, Branched Bur-reed, Common Reed, Fool's Water-cress, Greater Reedmace and Hemp Agrimony.

Previously poorly managed, the site shows some signs of 'improvement' in parts and was planted with numerous ornamental trees. Recent grazing and cutting management by the LVRPA has significantly enhanced the site. Higher areas of land towards the western side support a poorer coarse grassland that is not grazed: Stinging Nettle, Creeping Thistle and Great Willowherb now dominate large patches of this area.

#### Silvermead

**Site No:** 72/022    **Grid Ref:** TL372064    **Area:** 10.77    **District:** Broxbourne

**Wildlife site survey:** June 2011    **Surveyor:** Graham White

**Location/aspect.** Flat meadow land and ditches adjacent to the River Lee Navigation.

**Geology/Soils.** Alluvial gley soils with a high water level. Flat land with ditches.

**Site description.** An area of riverside meadowland varying from dry neutral grassland to sedge-dominated marshy grassland. The land has numerous ditches with diverse aquatic vegetation and has scattered scrub and trees. Drier areas are dominated by False Oat-grass, Yorkshire Fog and Cock's-foot, whilst the damper areas have Lesser Pond Sedge and abundant Hard Rush. Neutral grassland indicators include Crested Dog's-tail, Hardheads, Meadow Vetchling, Pepper-saxifrage and Bird's-foot Trefoil. The damper areas support Angelica, Marsh Bedstraw, Brown Sedge, Meadowsweet, Common Fleabane and Jointed Rush. The ditches are richly vegetated and support a diversity of aquatic and marginal plants, with associated areas of tall fen vegetation. Aquatics include Fat and Ivy-leaved Duckweeds, although Least Duckweed and Water Fern are also frequent. Marginals include Water Dock, Branched Bur-reed, Common Reed, Fool's Water-cress, Greater Reedmace and Hemp Agrimony.

Previously poorly managed, the site shows some signs of 'improvement' in parts and was planted with numerous ornamental trees. Recent grazing and cutting management by the LVRPA has significantly enhanced the site. Higher areas of land towards the western side support a poorer coarse grassland that is not grazed: Stinging Nettle, Creeping Thistle and Great Willowherb now dominate large patches of this area.

**Management.** The main meadows are sympathetically grazed and cut by the LVRPA. Some scrub management is undertaken. Overall, management is maintaining the quality of the site.

**Surrounding land.** The River Lee Navigation flows along the eastern boundary, beyond that is housing or land previously excavated for minerals but now infilled. Broxbourne Meadows Wildlife Site is located to the west.

**Fauna.** Water Voles are numerous in the ditch systems. Breeding birds include Reed Bunting, Sedge Warbler, Reed Warbler and Whitethroat. Large Skipper butterflies are numerous. The ditches support a range of typical dragonflies, including Red-eyed Damselfly.



Species		Habitat type**						DAF OR*
English Name	Latin Name	AWI	Fen	Calc	Acid	Neut	Wet	
Agrimony, Hemp	<i>Eupatorium cannabinum</i>		X					O
Alder	<i>Alnus glutinosa</i>							O
Angelica	<i>Angelica sylvestris</i>		X				X	O
Ash	<i>Fraxinus excelsior</i>							O
Bedstraw, Marsh	<i>Galium palustre</i>		X					O
Bindweed, Hedge	<i>Calystegia sepium</i>							R
Birch, Silver	<i>Betula pendula</i>							R
Birds-foot Trfl, Common	<i>Lotus corniculatus</i>			X		X		R
Bittersweet	<i>Solanum dulcamara</i>							O
Blackthorn	<i>Prunus spinosa</i>							O
Bramble	<i>Rubus fruticosus agg</i>							O
Brooklime	<i>Veronica beccabunga</i>							R
Bryony, White	<i>Bryonia dioica</i>							R
Burdock, Lesser	<i>Arctium minus</i>							O
Bur-reed, Branched	<i>Sparganium erectum</i>							F
Buttercup, Creeping	<i>Ranunculus repens</i>							F
Butercup, Meadow	<i>Ranunculus acris</i>					X		O
Cherry, Wild	<i>Prunus avium</i>							R
Chestnut, Sweet	<i>Castanea sativa</i>							R
Cleavers	<i>Galium aparine</i>							O
Clover, Red	<i>Trifolium pratense</i>							O
Clover, White	<i>Trifolium repens</i>			X		X		O
Comfrey, Common	<i>Symphytum officinale</i>		X					O
Cranes-bill, Cut-leaved	<i>Geranium dissectum</i>							O
Daisy	<i>Bellis perennis</i>							R

Dandelion	<i>Taraxacum spp</i>							O
Dock, Broad-leaved	<i>Rumex obtusifolius</i>							O
Dock, Clustered	<i>Rumex conglomeratus</i>							O
Dock, Curled	<i>Rumex crispus</i>							O
Dock, Water	<i>Rumex hydrolapathum</i>							R
Duckweed, Common	<i>Lemna minor</i>							F
Duckweed, Fat	<i>Lemna gibba</i>							R
Duckweed, Ivy-leaved	<i>Lemna trisulca</i>							O
Duckweed, Least	<i>Lemna minuta</i>							R
Elder	<i>Sambucus nigra</i>							O
Fleabane, Common	<i>Pulicaria dysenterica</i>						X	O
Forget-me-not, Water	<i>Myosotis scorpioides</i>							R
Gipsywort	<i>Lycopus europaeus</i>							R
Hawthorn	<i>Crataegus monogyna</i>							O
Hogweed	<i>Heracleum sphondylium</i>							O
Horehound, Black	<i>Ballota nigra</i>							R
Ivy	<i>Hedera helix</i>							R
Knapweed, Common	<i>Centaurea nigra</i>			X			X	F
Lettuce, Prickly	<i>Lactuca serriola</i>							R
Loosestrife, Purple	<i>Lythrum salicaria</i>		X					O
Maple, Field	<i>Acer campestre</i>							O
Maple, Norway	<i>Acer platanoides</i>							R
Meadowsweet	<i>Filipendula ulmaria</i>		X				X	A
Mint, Water	<i>Mentha aquatica</i>							R
Mouse-ear, Common	<i>Cerastium fontanum</i>							O
Mugwort	<i>Artemisia vulgaris</i>							O
Mustard, Garlic	<i>Alliaria petiolata</i>							O
Nettle, Stinging	<i>Urtica dioica</i>							F
Oak, Pedunculate	<i>Quercus robur</i>							O
Parsley, Cow	<i>Anthriscus sylvestris</i>							F
Reedmace, Greater	<i>Typha latifolia</i>							O
Plantain, Greater	<i>Plantago major</i>							R
Saxifrage, Pepper	<i>Silium silaus</i>						X	R
Selfheal	<i>Prunella vulgaris</i>							R
Silverweed	<i>Potentilla anserina</i>							O
Sorrel, Common	<i>Rumex acetosa</i>						X	O
Sow-thistle, Perennial	<i>Sonchus arvensis</i>							R
Stitchwort, Lesser	<i>Stellaria graminea</i>						X	O
Sycamore	<i>Acer pseudoplatanus</i>							R
Teasel	<i>Dipsacus fullonum</i>							R
Thistle, Creeping	<i>Cirsium arvense</i>							O
Vetch, Common	<i>Vicia sativa</i>							O
Vetchling, Meadow	<i>Lathyrus pratensis</i>						X	O
Water Starwort spp	<i>Callitriche spp</i>							O
Watercress	<i>Nasturtium officinale</i>							R
Watercress, Fool's	<i>Apium nodiflorum</i>							O
Water Plantain	<i>Alisma plantago-aquatica</i>							O
Willow, Crack	<i>Salix fragilis</i>							O
Willow, Goat	<i>Salix caprea</i>							O
Willow, Grey	<i>Salix cinerea</i>							O
Willow, White	<i>Salix alba</i>							O
Willowherb, Great	<i>Epilobium hirsutum</i>							F

Woundwort, Hedge	<i>Stachys sylvatica</i>							O
Yarrow	<i>Achillea millefolium</i>							O
Bent, Creeping	<i>Agrostis stolonifera</i>							O
Canary-grass, Reed	<i>Phalaris arundinacea</i>		X					F
Cocksfoot	<i>Dactylis glomerata</i>							A
Dogtail, Crested	<i>Cynosurus cristatus</i>					X		O
Fescue, Red	<i>Festuca rubra</i>							O
Foxtail, Meadow	<i>Alopecurus pratensis</i>							O
Hair-grass, Tufted	<i>Deschampsia cespitosa</i>							O
Meadow-grass, Rough	<i>Poa trivialis</i>							A
Meadow-grass, Smooth	<i>Poa pratensis</i>							O
Oat-grass, False	<i>Arrhenatherum elatius</i>							D
Reed, Common	<i>Phragmites australis</i>		X					LA
Rush, Hard	<i>Juncus inflexus</i>							F
Rush, Jointed	<i>Juncus articulatus</i>						X	O
Rush, Soft	<i>Juncus effusus</i>							F
Rye-grass, Perennial	<i>Lolium perenne</i>							A
Sedge, Brown	<i>Carex disticha</i>		X				X	R
Sedge, Greater Pond	<i>Carex riparia</i>							R
Sedge, Hairy	<i>Carex hirta</i>							O
Sedge, Lesser Pond	<i>Carex acutiformis</i>		X					A
Sweet-grass, Reed	<i>Glyceria maxima</i>							F
Timothy	<i>Phleum pratense</i>							O
Yorkshire Fog	<i>Holcus lanatus</i>							A
Horsetail, Marsh	<i>Equisetum palustre</i>		X				X	R
Total number of indicators			11	3	1	9	6	
Species threshold***		10	5	8	5	8	5	
Minimum Size of Site****		1	0.3	0.25	0.25	0.25	0.25	
Total grassland species (richness):		15						
Total number of species:		103						

\*The **DAFOR** Scale – indicates the frequency of occurrence of each species found.

D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare
L	Locally

\*\* Habitats are divided into 6 types: Ancient woodland, fen and swamp, calcareous grassland, acid grassland, neutral grassland and wet grassland.

\*\*\* Species threshold shows how many indicator species are needed per habitat type for a site to be meet Wildlife Site criteria.

\*\*\*\* Minimum size of site shows how large a site needs to be (for each habitat type) to meet Wildlife Site criteria.

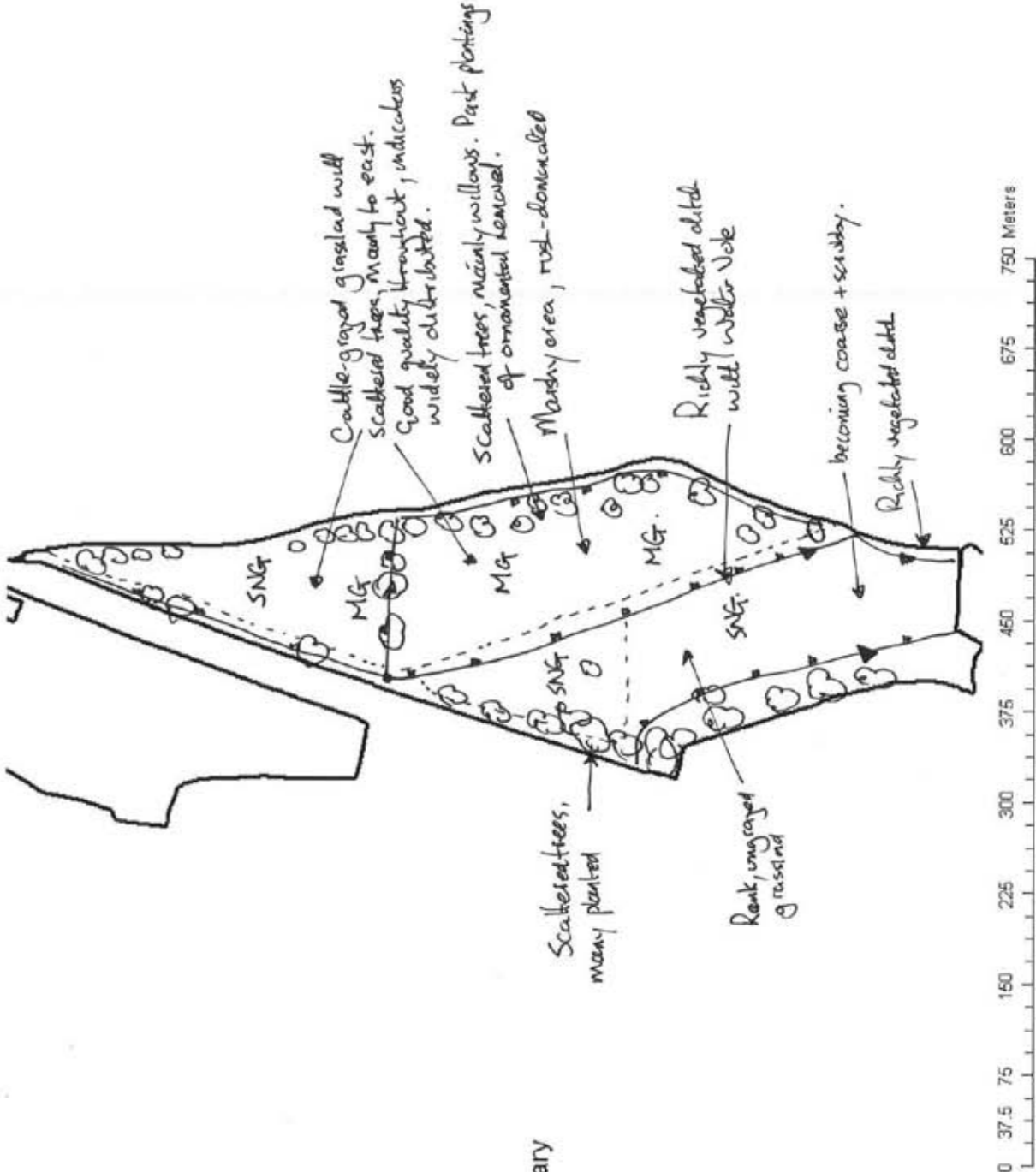
E.g. A site over 1ha in size and with over 10 ancient woodland indicators meets Ancient Woodland



72/022 Silvermead

Legend

Wildlife Site boundary



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100019606,2011

Swamp South of Silvermead

Site No: 72/023    Grid Ref: TL372059    Area: 0.97ha    District: Broxbourne  
Wildlife site survey: June 2011    Surveyor: Graham White

Location/aspect. Scrubby unmanaged marsh close to the River Lee Navigation.

Geology/Soils. Alluvial gley soils with a high water level. Flat land with ditches.

Site description. A small area of unmanaged tall fen/marsh vegetation surrounded by scrub/hedgerows and with scrub slowly invading. Vegetation mainly dominated by Common Reed, Lesser Pond Sedge, Stinging Nettle and Creeping Thistle, reflecting its unmanaged nature. Smaller amounts of typical marshy grassland/fen herbs, such as Comfrey, Meadowsweet, Angelica, Marsh Thistle, Marsh Horsetail and Reed Canary-grass, were present throughout the sward but never numerous.

Ditches flowed alongside two of the boundaries, but were mostly silted and overgrown with reed as well as over-shaded by trees, mainly Crack Willows which have fallen in a jumble in and around the ditches. Few aquatics in the ditches due to heavy shading.

Self-set scrub or trees on all sides of the site. Dominated by willows but also Hawthorn, Pedunculate Oak, Hazel and Wild Plum. A line of tall Crack Willows dominated the ditchline towards the Navigation. A higher bank on the western edge is covered with Bramble, Stinging Nettle and scrub.

Management. Appears to have been no management for many years.

Surrounding land. Silvermeade to north, disused, disturbed, scrubby land on most sides. Raised (in-filled?) land to the west.

Fauna. Wren, Blackcap and Chiffchaff holding territories. Dark Bush-crickets in the scrub.



Species		Habitat type**						DAFO R*
English Name	Latin Name	AWI	Fen	Calc	Acid	Neut	Wet	
Angelica	Angelica sylvestris		X					O
Bindweed, Hedge	Calystegia sepium							F
Bistort, Amphibious	Persicaria amphibia							R
Bittersweet	Solanum dulcamara							R
Blackthorn	Prunus spinosa							R
Bramble	Rubus fruticosus agg							O
Bryony, White	Bryonia dioica							R
Burdock, Lesser	Arctium minus							R
Bur-reed, Branched	Sparganium erectum							R
Buttercup, Creeping	Ranunculus repens							R
Cleavers	Galium aparine							F
Comfrey, Common	Symphytum officinale		X					F
Dead-nettle, White	Lamium album							R
Dogwood	Cornus sanguinea							R
Elder	Sambucus nigra							O
Figwort, Water	Scrophularia auriculata							O
Fleabane, Common	Pulicaria dysenterica						X	O
Forget-me-not, Water	Myosotis scorpioides							O
Ground-ivy	Glechoma hederacea							O
Hawthorn	Crataegus monogyna							O
Hazel	Corylus avellana	x						R
Hogweed	Heracleum sphondylium							R
Hop	Humulus lupulus							R
Ivy	Hedera helix							R
Meadowsweet	Filipendula ulmaria		X					O
Mint, Water	Mentha aquatica							R
Nettle, Stinging	Urtica dioica							D
Oak, Pedunculate	Quercus robur							O
Plum	Prunus domestica							R
Rose, Dog	Rosa canina agg							O
Sycamore	Acer pseudoplatanus							O
Thistle, Creeping	Cirsium arvense							R
Thistle, Marsh	Cirsium palustre		X					R
Thistle, Welled	Carduus crispus							R
Vetch, Tufted	Vicia cracca					X		F
Vetchling, Meadow	Lathyrus pratensis					X		R
Watercress, Fool's	Apium nodiflorum							O
Willow, Crack	Salix fragilis							F
Willowherb, Great	Epilobium hirsutum							O
Woundwort, Hedge	Stachys sylvatica							O
Woundwort, Marsh	Stachys palustris							R
Canary-grass, Reed	Phalaris arundinacea		X					O
Cocksfoot	Dactylis glomerata							O
Couch, Common	Elytrigia repens							O
Foxtail, Meadow	Alopecurus pratensis							O
Hair-grass, Tufted	Deschampsia cespitosa							R
Meadow-grass, Rough	Poa trivialis							R
Oat-grass, False	Arrhenatherum elatius							D

Reed, Common	<i>Phragmites australis</i>		X					D
Rush, Hard	<i>Juncus inflexus</i>							R
Sedge, Lesser Pond	<i>Carex acutiformis</i>		X					F
Sweet-grass, Reed	<i>Glyceria maxima</i>							LA
Yorkshire Fog	<i>Holcus lanatus</i>							O
Horsetail, Marsh	<i>Equisetum palustre</i>		X					O
	<b>Total number of indicators</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	
	<b>Species threshold***</b>	10	5	8	5	8	5	
	<b>Minimum Size of Site****</b>	1	0.3	0.25	0.25	0.25	0.25	
	<b>Total grassland species (richness):</b>	<b>3</b>						
	<b>Total number of species:</b>	<b>56</b>						

\*The **DAFOR** Scale – indicates the frequency of occurrence of each species found.

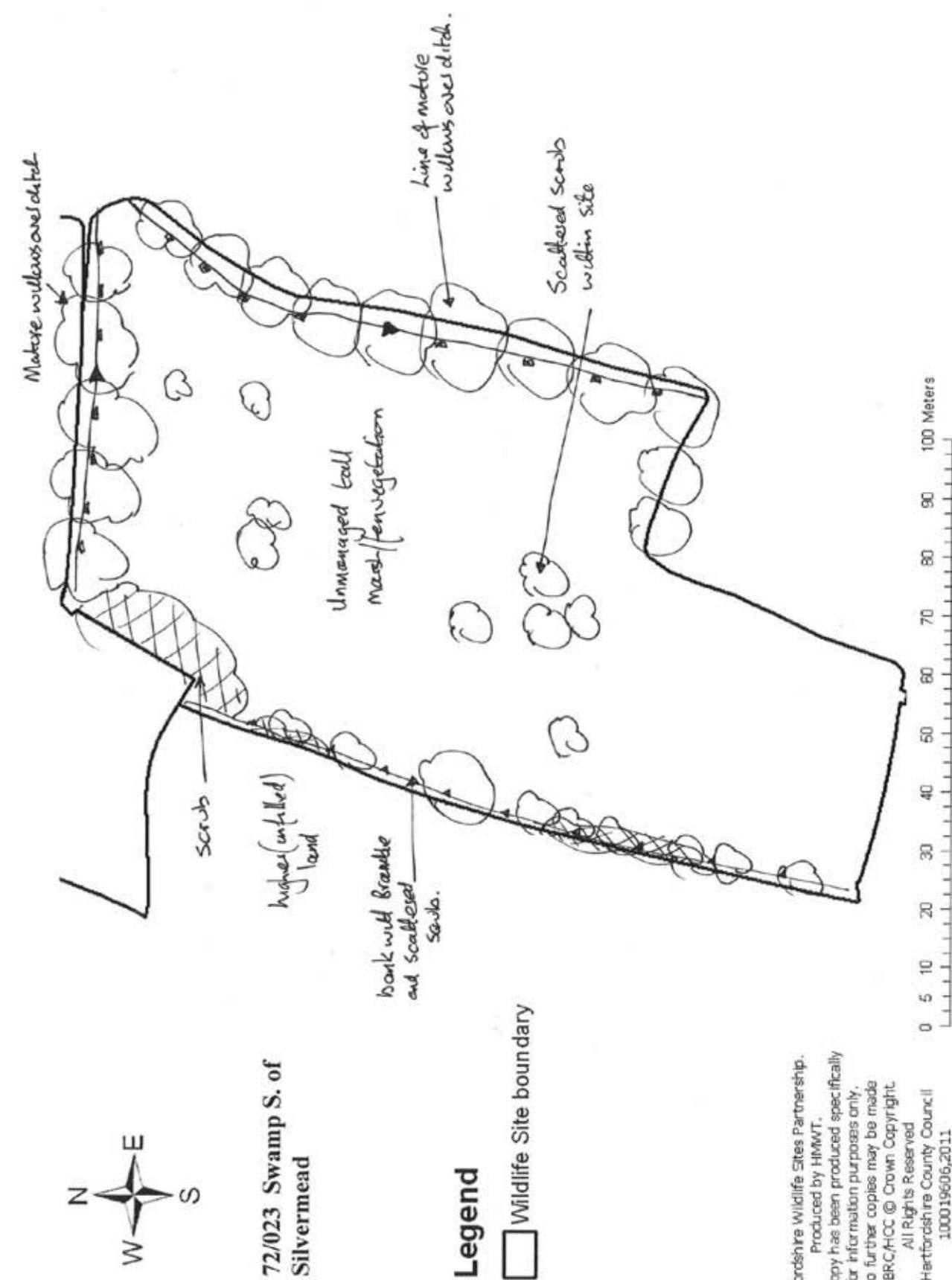
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