



## **Supplementary Environmental Information**

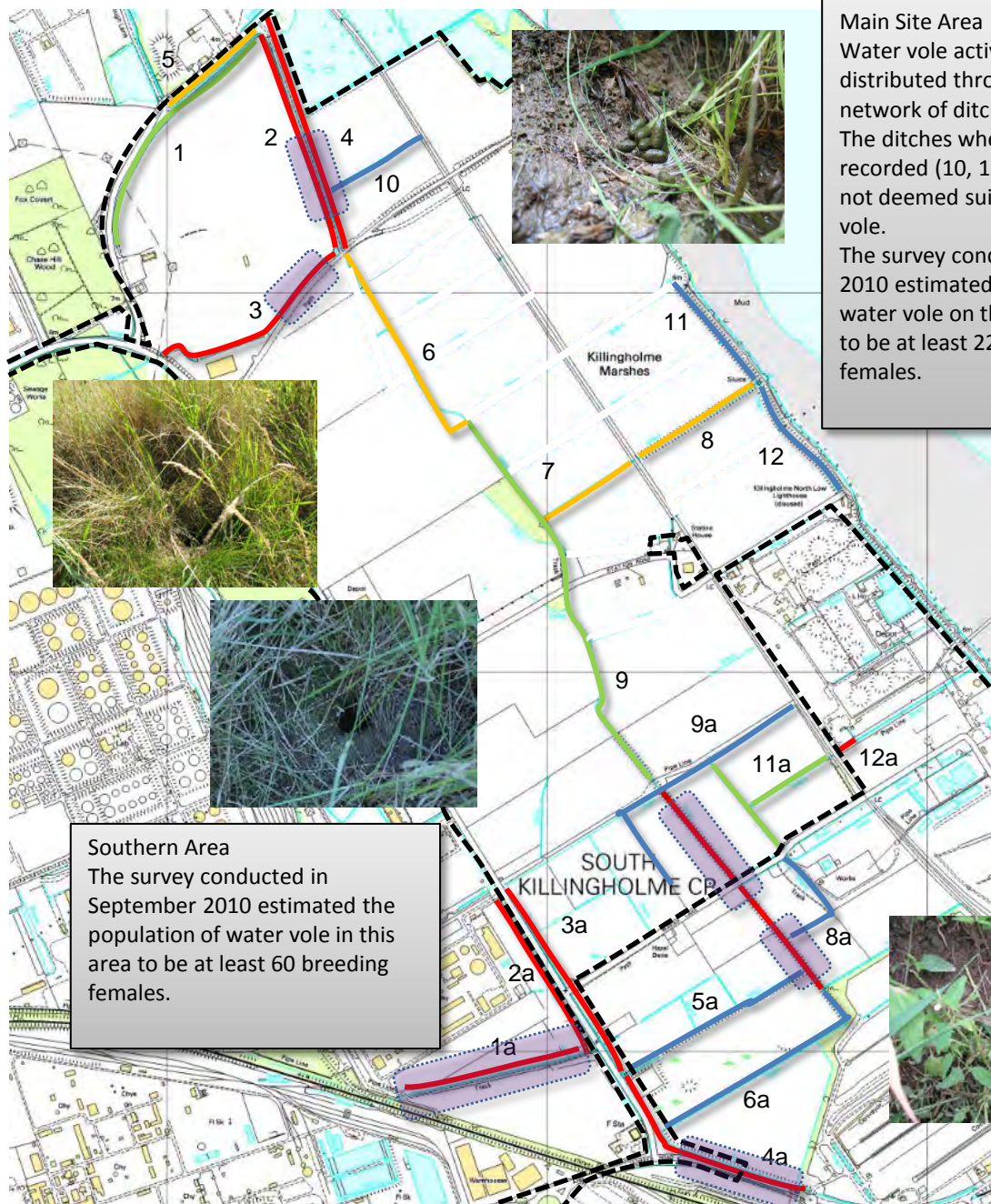
*Additional Landscape Masterplan*

*Supplementary Report EX 20.3*

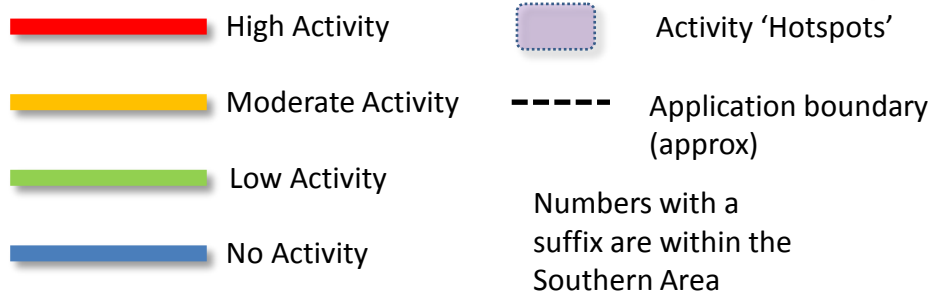
June 2012  
Revision: 0  
ERM

**Main Site Area**  
 Water vole activity is widely distributed throughout the network of ditches on the site. The ditches where no signs were recorded (10, 11 and 12) were not deemed suitable for water vole.

The survey conducted in July 2010 estimated the population of water vole on the main site area to be at least 22 breeding females.



**Southern Area**  
 The survey conducted in September 2010 estimated the population of water vole in this area to be at least 60 breeding females.



500 m

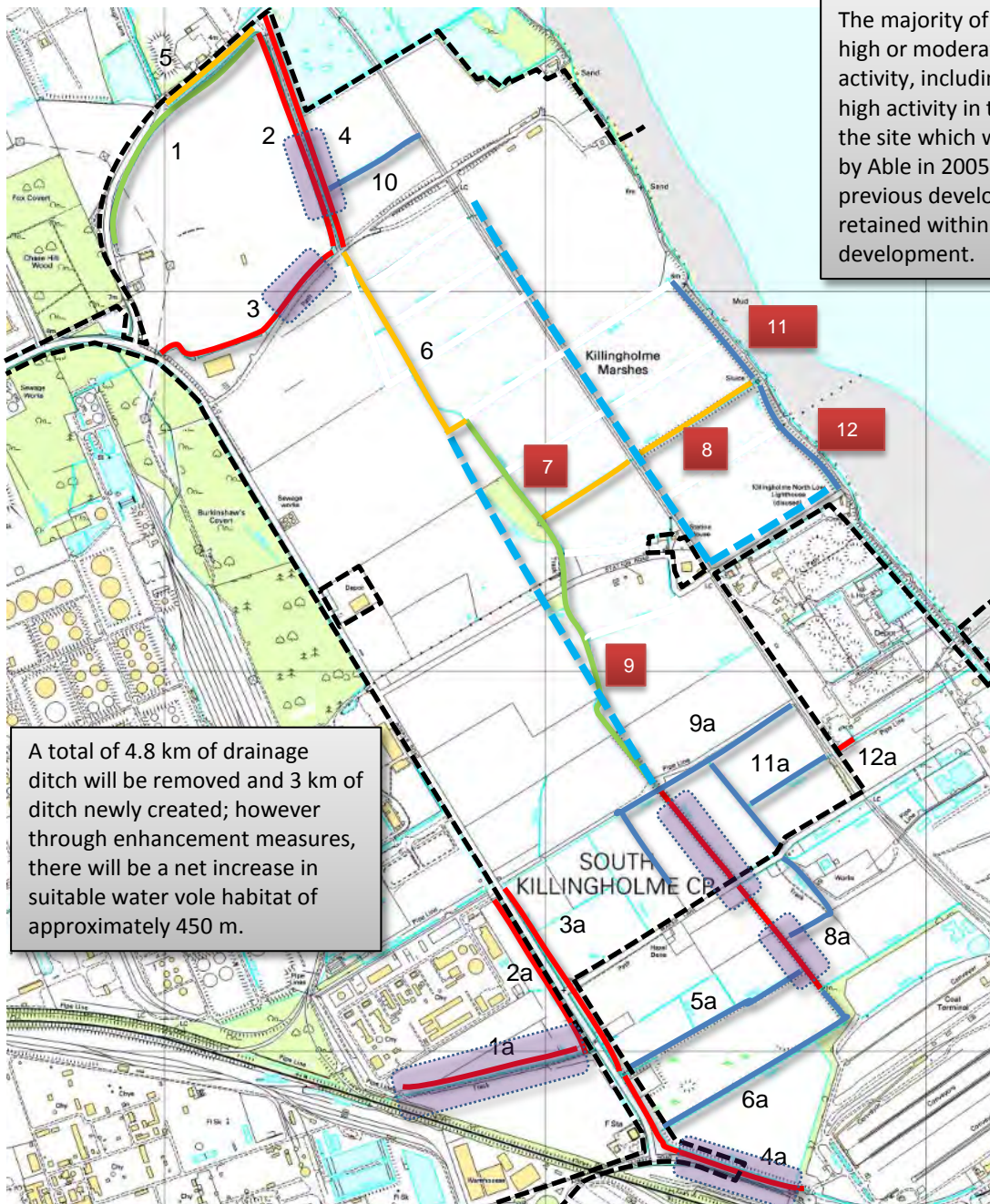


## Ecology/Landscape Detail Sheet No 1a – Water Vole Survey Existing Situation





The majority of the drains with high or moderate water vole activity, including those areas of high activity in the north west of the site which were engineered by Able in 2005 as part of a previous development, will be retained within the AMEP development.



- |  |                               |  |                     |
|--|-------------------------------|--|---------------------|
|  | High Activity                 |  | Ditch to be created |
|  | Moderate Activity             |  | Ditch to be removed |
|  | Low Activity                  |  |                     |
|  | No Activity                   |  |                     |
|  | Application boundary (approx) |  |                     |
|  | Activity 'Hotspots'           |  |                     |

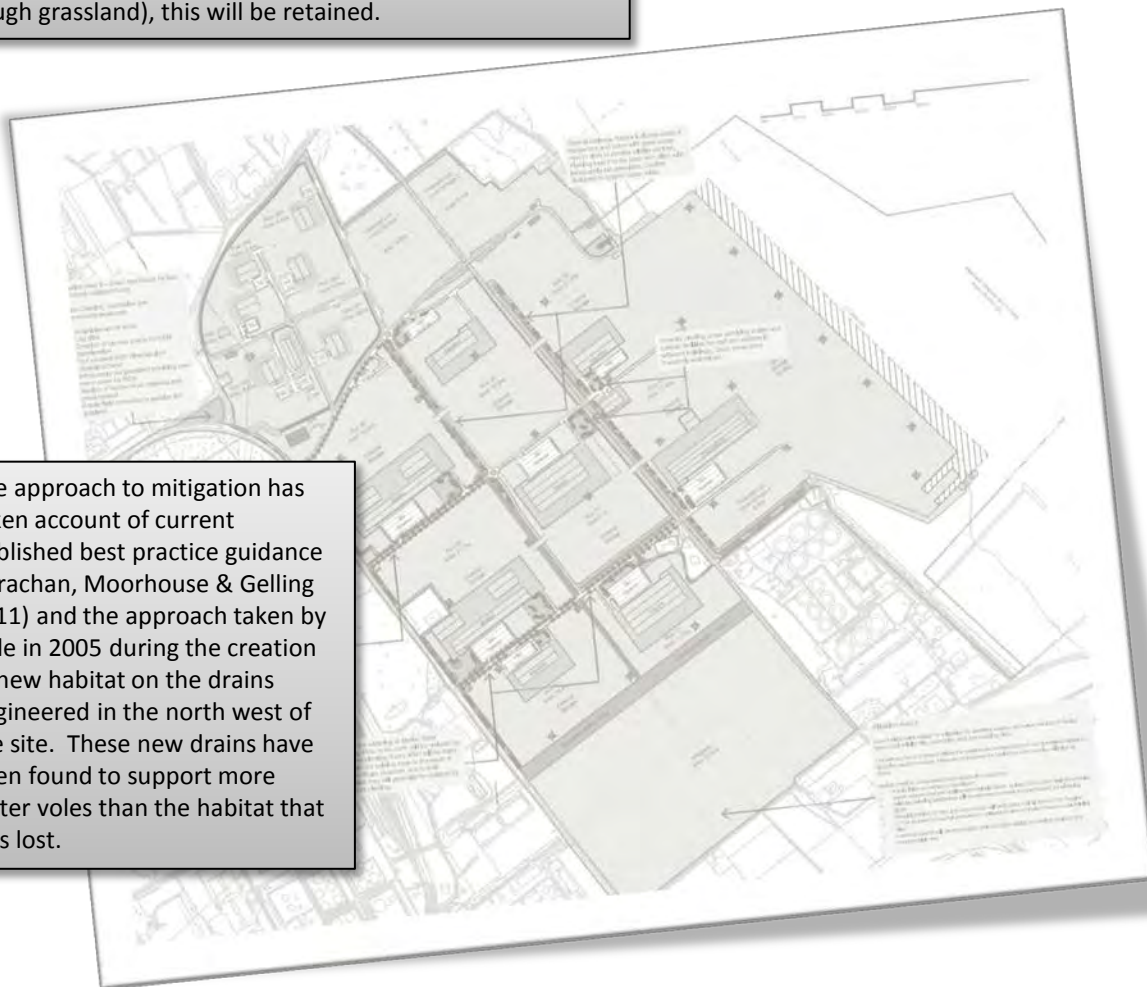
500 m



## Ecology/Landscape Detail Sheet No 1b – Water Vole Changes to Drainage Ditches



Enhancement measures will include clearance of in water vegetation where areas of open water have been lost, and surrounding vegetation where it is resulting in overshadowing. However where vegetation surrounding open water provides food and cover from predators (eg rough grassland), this will be retained.



The approach to mitigation has taken account of current published best practice guidance (Strachan, Moorhouse & Gelling 2011) and the approach taken by Able in 2005 during the creation of new habitat on the drains engineered in the north west of the site. These new drains have been found to support more water voles than the habitat that was lost.

The new realigned ditch system will be created sufficiently in advance of loss of the existing habitat to enable the habitat to establish and become attractive to water vole. The approach will be to discourage water vole from the ditches to be removed (including through incremental strimming of bankside vegetation) and to provide suitable habitat through watercourse creation and enhancement to encourage them to move to these areas. The watercourses will be monitored to ensure that all water voles have moved from the ditches to be affected prior to any disturbing works. If any water vole remain then translocation under licence from Natural England may be required.



## Ecology/Landscape Detail Sheet No 1c – Water Vole Mitigation Measures



## **EXPLANATION**

A landscape masterplan was submitted as Annex 4.5 of the Able Marine Energy Park application. To illustrate how habitat impacts are being mitigated for the benefit of wildlife the following detailed plans have been prepared:

## **LIST OF PLANS**

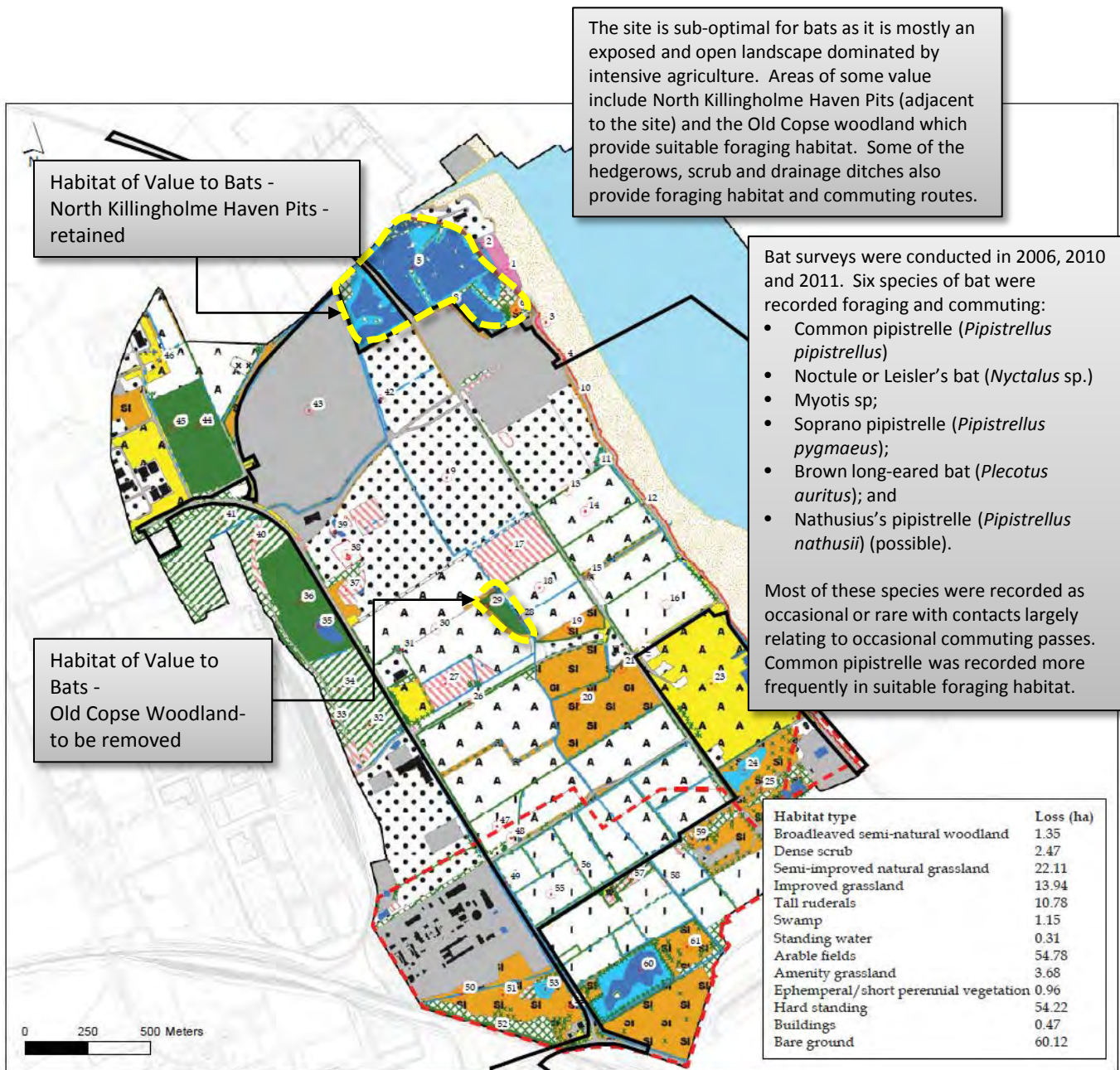
Ecology/Landscape Detail Sheet No 1a – Water Vole Survey Existing Situation

Ecology/Landscape Detail Sheet No 2a – Great Crested Newt Existing Situation

Ecology/Landscape Detail Sheet No 3a – Bats Existing Situation

Ecology/Landscape Detail Sheet No 4a – Breeding Birds Existing Situation





No evidence of occupied roosting or resting places was found within any of the trees on the AMEP site.

No significant impacts on bats are predicted, but there will be some temporary loss of foraging area and disruption to commuting routes which has been the focus of the mitigation.



## Ecology/Landscape Detail Sheet No 3a – Bats

### Existing Situation







Proposed Bat Corridors



Proposed Bat Foraging Areas

Green corridors across the site will be retained and enhanced to encourage commuting and foraging bats, especially between NKHP, Burkinshaw's Covert, Area A and Rosper Road Pools. New corridors will also be created within the main site and around the margins of Mitigation Area A. The provision of trees will also provide roosting opportunities for bats in the long term as mature trees decay.

The planting will include new tree belts, avenues of trees, hedgerows, realigned ditches and provision of new rough grassland strips..



## Ecology/Landscape Detail Sheet No 3B – Bats

### Proposed Mitigation



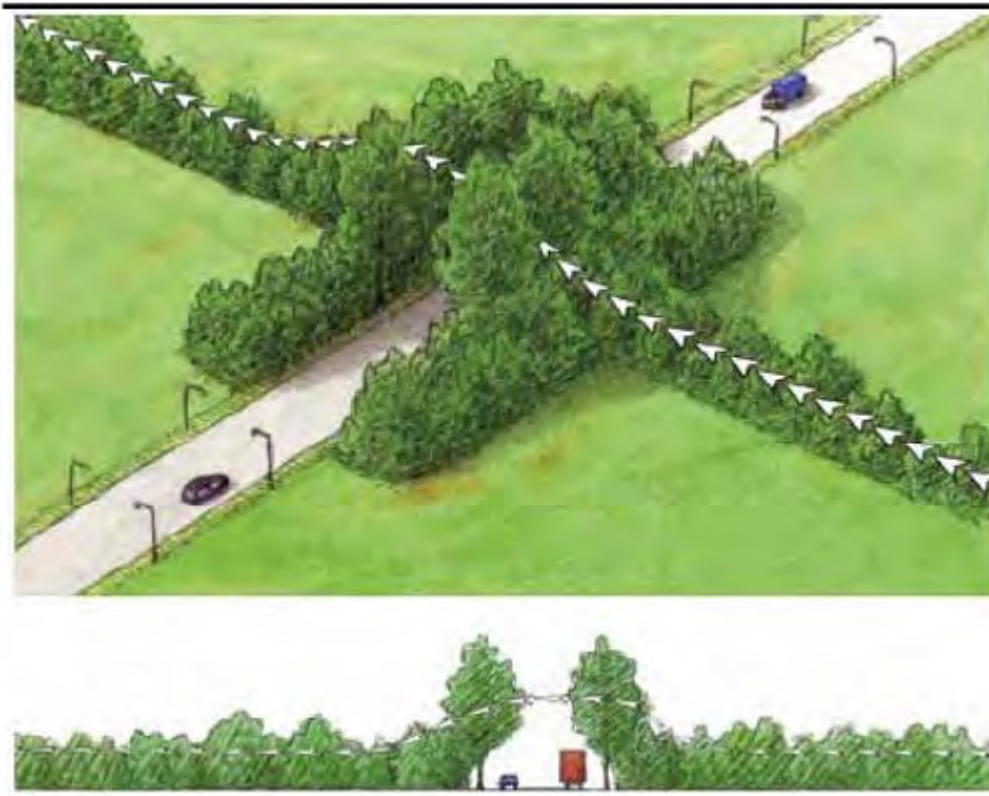


Figure taken from Limpens *et al.* (2005)

The new planted corridors seek to link existing semi-natural habitat at Burkinshaw's Covert and habitat on the north side of Rosper Road, using hop-overs to facilitate crossing over the road as illustrated above.

Enhancement of drains and green corridors within Area B will provide further opportunities for bats. Bat boxes suitable for use by the bat species identified will be erected on suitable trees in this area in agreement with NE and NLC.

Lighting across the AMEP will also be directed away from green corridors and where necessary be of a type that will reduce the risk of impacts on commuting and foraging bats.





North Killingholme Haven Pits supports shelduck, pochard, grasshopper warbler, spotted flycatcher and tree sparrow.

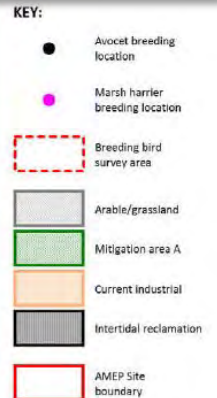
Marsh harrier and avocet (both Humber Estuary SPA breeding species) were recorded within North Killingholme Haven Pits. A single pair of marsh harrier was breeding within the reed bed on the western pit. Eight breeding pairs of Avocets were recorded breeding on scrapes of the eastern pit.

The gravel area in the northern part of the site supports shelduck, ringed plover and lapwing.

Hedgerow, scrub and woodland habitats on the site support dunnoek, song thrush, willow tit and bullfinch.

Arable and grassland habitats on the site support skylark, yellow wagtail, tree sparrow, yellow hammer, linnet and reed bunting.

Rosper Road Pools supports gadwall, shelduck, shoveler, pochard duck and lapwing.



A total of 20 breeding species recorded were classed as medium sensitivity, either being on the UK BAP as priority species or being present in regionally important numbers.

The impacts of the development relating to breeding birds are as follows:

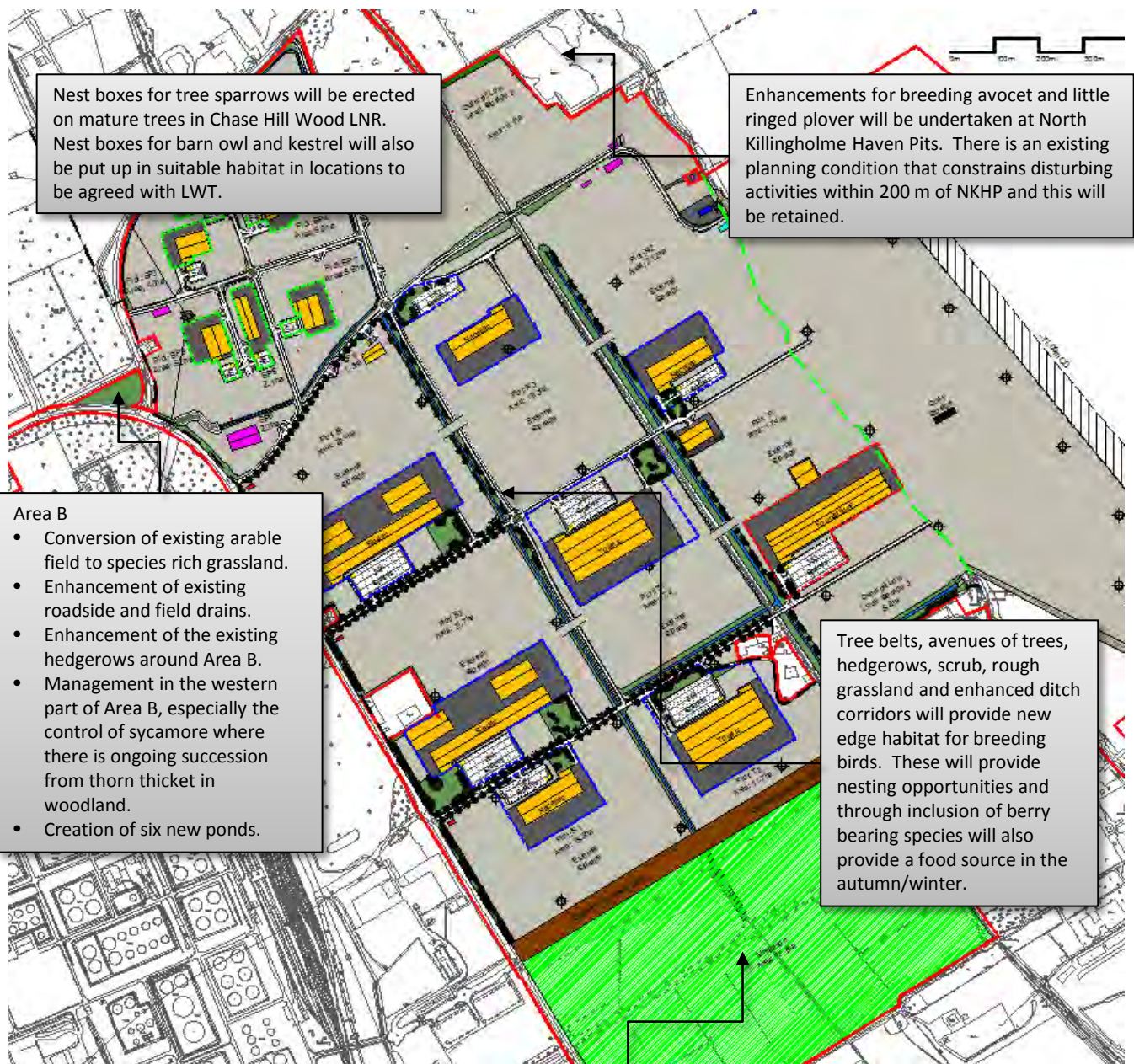
- Loss of 100 ha arable/semi-improved grassland
- Loss of seven ponds
- Loss of neutral grassland and elm hedge, both of local value and included as part of a Local Wildlife Site
- Loss of breeding bird habitat including species poor hedgerow, tall ruderal vegetation, sand and gravel, arable/pasture fields and semi-natural woodland. Drainage ditches lost will largely be replaced by new ones.

No significant effects on breeding birds are predicted.



## Ecology/Landscape Detail Sheet No 4a – Breeding Birds Existing Situation





Nest boxes for tree sparrows will be erected on mature trees in Chase Hill Wood LNR. Nest boxes for barn owl and kestrel will also be put up in suitable habitat in locations to be agreed with LWT.

Enhancements for breeding avocet and little ringed plover will be undertaken at North Killingholme Haven Pits. There is an existing planning condition that constrains disturbing activities within 200 m of NKHP and this will be retained.

#### Area B

- Conversion of existing arable field to species rich grassland.
- Enhancement of existing roadside and field drains.
- Enhancement of the existing hedgerows around Area B.
- Management in the western part of Area B, especially the control of sycamore where there is ongoing succession from thorn thicket in woodland.
- Creation of six new ponds.

Tree belts, avenues of trees, hedgerows, scrub, rough grassland and enhanced ditch corridors will provide new edge habitat for breeding birds. These will provide nesting opportunities and through inclusion of berry bearing species will also provide a food source in the autumn/winter.

#### Area A

The wet grassland proposed in this area will provide habitat to support breeding waders such as lapwing. The wader scrapes will attract insects and birds that prey on them to feed their young, such as thrushes, yellow wagtail and reed bunting. Swallows will also prey on the flying insects. The grassland will be managed to create tussocky swards which will provide nesting habitat for skylark and meadow pipit.

A tree belt will be planted along the western boundary of Area A adjacent to Rosper Road comprising taller trees to help screen the birds from highway traffic.

Unmanaged strips of between two and six metres wide will be created in the edge of the fields adjacent to hedgerows and will provide habitat for species including grey partridge, tree sparrow, linnet and reed bunting.



## Ecology/Landscape Detail Sheet No 4B – Breeding Birds Proposed Mitigation

