3. MITIGATION STRATEGY

3.1 A dedicated on-site mitigation area for relocated Great Crested Newts from the on-site small meta-population will be provided within the northwest corner of the development site (Area A receptor site). Consideration was given to the retention of the waterbodies in-situ however this would significantly compromise decontamination works across this part of the development site. Even if remediation could take place with the waterbodies remaining in place, all terrestrial habitat surrounding them would be lost to facilitate the remediation and earthworks. As such, the preferred option to ensure the conservation status of the Great Crested Newt population was to create a dedicated mitigation area within the development site where no ground contamination is present and relocate the on-site population prior to the remediation works.

3.2 Any captured individuals within the southeast corner of the development site associated with the separate off-site medium population will be relocated back to enhanced breeding habitat (Area B receptor site).

Area A Receptor Site

3.3 Area A receptor site measures approximately 10.5ha in area and already supports a mosaic of highly suitable terrestrial habitats capable of supporting Great Crested Newts, such as rank/tussocky grassland, scrub, ruderal vegetation, woodland and ditches (wet, seasonal and dry). Part of Area A receptor site falls within the Puriton Meadows and Rail Spur Local Wildlife Site (LWS) which is designated on account of its notable species and areas of semi natural grassland habitat. Land outside of Area A receptor site (and the development site) to the north and west also forms part of a local wildlife site designation (North Mead Drove Fields LWS) which is designated for its grassland and rhynes being largely contiguous to habitats within the Puriton Meadows and Rail Spur LWS.

3.4 Four new ponds will be created within Area A receptor site and have been located in two existing clearings (where former buildings have been decommissioned and subsequently demolished) (see Plan ECO4 and Appendix 1) within the woodland where rank and tussocky grassland is present. The ponds have been designed specifically for Great Crested Newts and range between 100 and 300sqm in area, as depicted at Appendix 1. They will be constructed in early 2013 in advance of the relocation exercise and will be of sufficient maturity to support breeding Great Crested Newts.

3.5 Areas adjacent to the ponds will be planted to provide emergent (Emorsgate Seeds Pond Edge Mixture EP1 or similar) and marginal habitats (Meadow Mixture for Wetlands EM8 or similar). New aquatic planting would also be undertaken in order to provide immediate breeding opportunities for the relocated population. Depending on the precise drainage conditions the ponds may be constructed using a geosynthetic clay liner (or similar) in order to ensure they support water within the breeding seasons. Any areas of bare and disturbed ground around the ponds following their construction would be re-seeded where appropriate.

3.6 Four artificial hibernacula will be created in close proximity to the new ponds in order to provide additional hibernation opportunities.

3.7 Many existing ditches within Area A receptor site are choked with sediment and encroaching vegetation and these would be reinstated through dredging and thinning of dense scrub where required. This will provide further foraging and breeding opportunities for Great Crested Newts.

3.8 All remaining habitats within Area A receptor site will be retained and enhanced through appropriate management for the benefit of Great Crested Newts (see section 5 of this GCNMMP).

3.9 Area A receptor site will be fully enclosed using semi-permanent upright herpetofauna fencing prior to relocation of the on-site population. To prevent Great Crested Newts entering the wider development site, a wire mesh screen (or equivalent engineered solution as recommended by Natural England) would be utilised where fencing traverses ditches. To help alleviate any drainage issues, this screen would only be in place during the active period and will be removed from November to February inclusive (it will be installed such that the screen can be removed without compromising the adjacent fencing and any resting sites). The fencing along the northern boundary will be removed within two years following installation (it is acknowledged that Natural England do not normally licence enclosing a receptor site for more than two sites) in order to ensure dispersal of the relocated population to the north and west within the adjacent North Mead Drove Fields LWS where addition terrestrial and aquatic habitats suitable for amphibians is present. Remaining fencing would remain until all forthcoming energy park development within 500m of the new ponds is completed and would only be removed if deemed appropriate.

Area B Receptor Site

3.10 In relation to the off-site medium meta-population, any captured Great Crested Newts within the development site would be relocated off-site to restored and enhanced pond P35 (no Great Crested Newts found previously) and adjacent connecting hedgerow. Area B receptor site measures approximately 0.04ha which includes the pond and an 80m length of connecting hedgerow. Adjacent habitats include grassland pasture, ponds (which support this off-site medium meta-population) and an orchard.

3.11 Pond P35 is currently in-filled with sediment and debris and will be enhanced to reinstate the pond within its existing footprint during early 2013. It is considered appropriate to undertake the works during the winter months as no hibernation sites would be impacted upon and this would further ensure that the new pond is sufficiently established and provide immediate breeding habitat. New aquatic, marginal and emergent planting (as already described above) would also be provided where required with retention of existing rootstock where appropriate.

3.12 Semi-permanent one-way herpetofauna fencing (thereby allowing any individuals within the development site to disperse out on their own accord) herpetofauna fencing to be installed along the boundary of the development site so that it exceeds the distant (500m) terrestrial habitat zone in order to prevent any inward migration of the population. Again, a wire mesh screen (or equivalent engineered solution) would be utilised where fencing traverses ditches. This fencing will remain in place until all forthcoming energy park development within the distant habitat zone is completed.

4. MANAGEMENT OBJECTIVES

4.1 The overall aims and objectives of this GCNMMP is to safeguard and manage the habitats within the receptor sites in order to maintain the favourable conservation status of the relocated Great Crested Newts.

4.2 The following objectives have been identified:

- Objective 1: Maintain and enhance retained and newly created habitats within receptor sites to ensure the favourable conservation status of relocated Great Crested Newt population;
- Objective 2: Population monitoring of Great Crested Newt populations within receptor sites; and
- Objective 3: Biological recording to monitor efficacy of the GCNMMP.

5. MANAGEMENT AND MONITORING PRESCRIPTIONS

5.1 Management prescriptions and monitoring requirements in relation to each of the three objectives have been described below. All measures would be undertaken such that they won't compromise the survival or success of the relocated populations and ensure compliance with relevant legislation. All works which have the potential to impact upon Great Crested Newts must be done under the direction of an appropriately experienced ecologist and in line with any conditions associated with a Natural England licence.

5.2 All management and monitoring prescriptions described below will be ensured in perpetuity unless otherwise stated. As already discussed, regardless of whether the forthcoming energy park receives planning consent, this GCNMMP serves as providing the initial mechanism for management and monitoring commitments to be delivered by BAE Systems with management in perpetuity to be transferred to future occupiers of the energy park upon any forthcoming planning consent (as part of a S106 agreement).

5.3 This GCNMMP will be reviewed every five years to ensure its efficacy.

Objective 1: Maintain and enhance retained and newly created habitats within receptor sites to ensure the favourable conservation status of relocated Great Crested Newt population

Area A Receptor Site

5.4 The Puriton Meadows and Rail Spur LWS is located within Area A receptor site.

5.5 In order to prevent accidental encroachment within the LWS, access will be restricted to existing access tracks during the construction of the ponds and during subsequent works.

5.6 Herpetofauna fencing delineating the boundary of Area A receptor site would serve to safeguard retained habitats within this mitigation area. Fencing utilised for root protection purposes would serve to protect the integrity of the herpetofauna fencing.

5.7 The grassland within the LWS will be cut on an annual basis with one cut in the autumn and a further cut towards the end of the growing season if necessary. All arisings will be removed. Remaining grassland within Area A receptor site, in particular that surrounding the new ponds, will be subject to a non-intensive management regime to provide a rank and tussocky sward through cutting on a rotational basis where no more than a third would be cut in one year.

5.8 Encroachment of scrub within the grassland habitat within Area A receptor site will be monitored and kept in check through small-scale clearance every two years, where deemed necessary. The aim will be to prevent the development of further areas of scrub which will out compete grassland habitat.

5.9 The new ponds have been designed specifically for Great Crested Newts and do not form part of any drainage attenuation role. The ponds and associated planting will be monitored for successful establishment (in accordance with any conditions associated with the Natural England licence) and would be checked on a monthly basis for the first six months following their construction.

5.10 The ponds will be inspected on a quarterly basis for the presence of litter and general debris and any other sources which may provide pollutants to the water. Litter and debris would be removed by hand and taken off-site.

5.11 Management of the woodland habitat immediately surrounding the new ponds will be limited to works only required on a health and safety basis. A proportion of any harvested wood would be gathered into log piles in order to provide additional hibernation opportunities. Areas of remaining woodland habitat at greater distances from the new ponds would be subject to thinning management (once every 10 years) where required in order to maintain the understorey and ground flora. The condition of mature trees will be monitored every two years.

5.12 The drainage ditches are to be reinstated and enhanced through dredging and thinning of dense scrub. The condition of the reinstated/enhanced ditches will be monitored throughout. Ditches will be maintained for drainage purposes but also in a sympathetic manner in respect of their biodiversity value (in addition to Great Crested Newts they have also been designed to provide enhanced habitat for Water Vole which are known in the vicinity). Any required dredging will avoid potential damage to the banks (and adverse effects on Great Crested Newts and Water Voles). Any dredged spoil will be set away from the bank edge at a distance of around 2m. Such works will take place outside of the Great Crested Newt breeding season (i.e. avoiding March –I June inclusive). Notwithstanding that required for drainage purposes, regular management will be limited in extent. Annual condition assessments will be undertaken and remedial action taken with regard to any ‘choking’ through aquatic vegetation, or significant encroachment by scrub.

5.13 In respect of remediation and earthworks in close proximity to Area A receptor site, all tree protection measures, such as fencing associated with root protection zones will be maintained in good working order until such time as it is not required.

5.14 The condition of the herpetofauna fencing will be monitored every six weeks during the active period and replaced or repaired where necessary. The wire mesh screens (or equivalent) at ditches will be installed during the active season (Marsh –I October inclusive) and will be checked initially every two weeks during the active period with any debris deemed to be compromising the drainage role of the ditch being carefully removed. Subsequent checks may be undertaken on a less frequent basis depending on the risk of choking debris.

Area B Receptor Site

5.15 Reinstated pond P35 and associated planting will be checked on a monthly basis for the first six months and also on a quarterly basis for the presence of litter and general debris. Litter and debris would be removed by hand and taken off-site.

Objective 2: Population monitoring of Great Crested Newt populations within receptor sites

5.16 Aquatic surveys in line with Natural England's Great Crested Newt Mitigation Guidelines and in accordance with the provisions of the licence will be undertaken to monitor the relocated populations within the receptor sites.

5.17 It is proposed that surveys during the optimum period (late March – early June with half within mid-April – mid-May) of the four new ponds and reinstated ditches within Area A receptor site and the reinstated pond P35 within Area B receptor site would be undertaken in years 2014 and 2015. Bottle trapping, torching and egg-searching techniques would be utilised with terrestrial searching of refugia undertaken were required.

Objective 3: Biological recording to monitor efficacy of this GCNMMP

5.18 Surveys of all habitats within the receptor sites will be undertaken on an annual basis during the optimum period for such surveys (May – June).

5.19 In the event that the findings of the ongoing monitoring deviate from the objectives set in this GCNMMP, then it will be reviewed, in consultation with the planning authority and Natural England (as appropriate), and will be adapted as appropriate.

6. CONCLUSIONS

6.1 This GCNMMP sets out the proposed mitigation strategy and management following the relocation of the Great Crested Newt population. It serves to form part of the submitted Great Crested Newt licence application and also ensures the management and monitoring commitments to be delivered by BAE Systems in perpetuity, regardless of whether the forthcoming energy park receives planning consent.

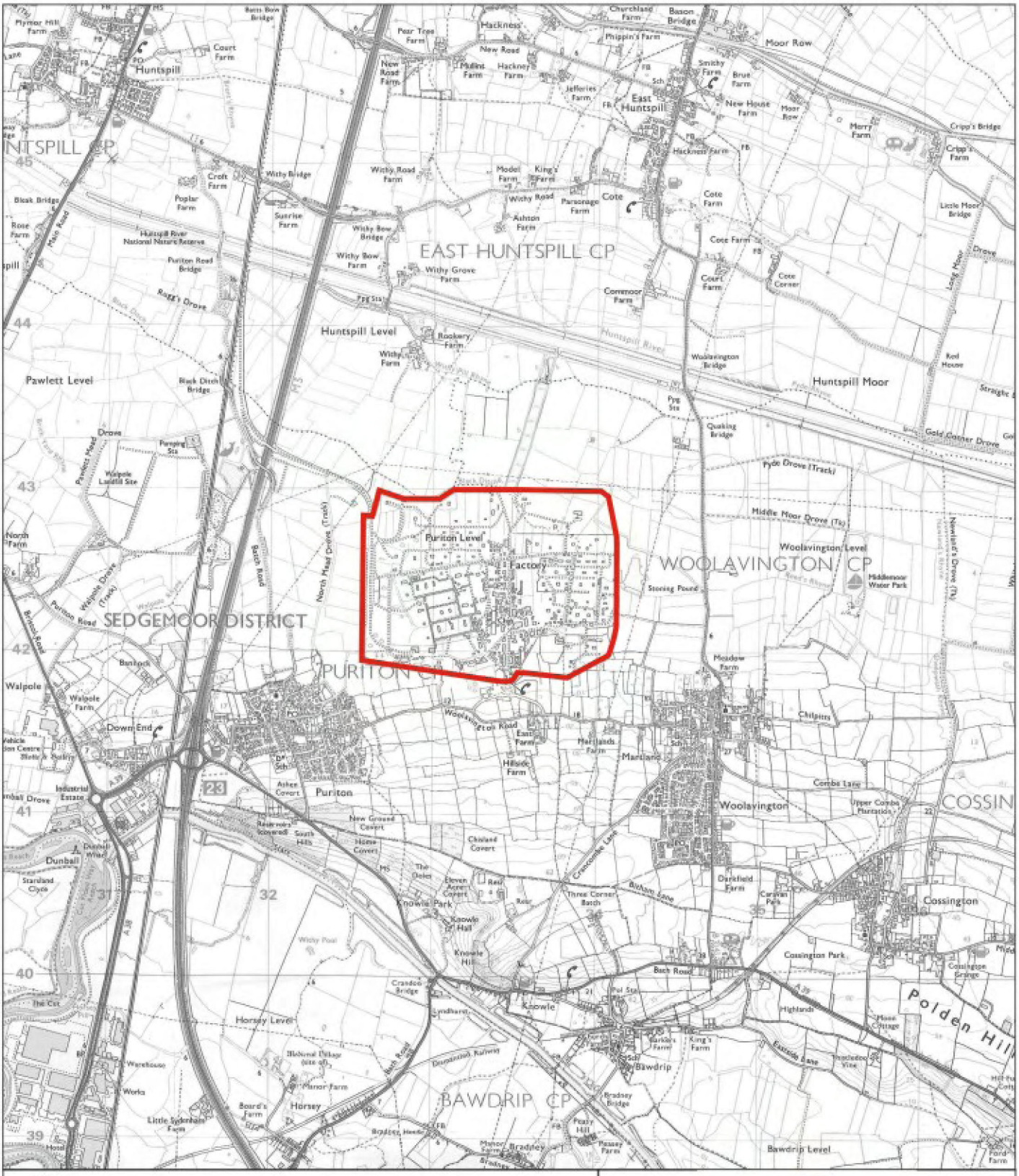
6.2 In adopting the measures put forward within this GCNMMP, the relocated population will be retained at a favourable conservation status and the ecological interest of retained habitat features will be protected and indeed enhanced over time.

PLANS & APPENDICES

PLANS

PLAN ECO1

Development Site Location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SEDGEMOOR DISTRICT
PURITON CP
BAWDRIP CP
Huntspill
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Puriton
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Bawdrip
Puriton Level
Factory
Huntspill Level
Pawlett Level
Huntspill Moor
Woolavington Level
Horsey Level
Bawdrip Level
Polden Hill
Cote
Knowle
Down End
Walpole
Dunball
Horsey
Cossington
Moor Row
Cote Farm
Cote Corner
Common Farm
Huntspill River
Woolavington Bridge
Quaking Bridge
Fyde Drove (Track)
Middle Moor Drove (Tk)
Stoning Pound
Meadow Farm
Chilpitts
Marland
Combe Lane
Upper Combe Plantation
Darsfield Farm
Three Corner Batch
Bishon Lane
Cossington Park
Cossington Grange
Highlands
Bach Road
Knowle Park
Knowle Hill
Crandon Bridge
Lyndhurst
Bradley Bridge
Bradley Heath
Manor Farm
Horsey
Board's Farm
Little Sydenham Farm
Warehouse
Works
Industrial Estate
Dunball Wharf
Stanland Clyde
The Cut
Puriton Road
Walpole Drove (Track)
North Head Drove (Track)
Batch Road
Woolavington Road
Cranmore Lane
Newland's Drove (Tk)
Middlemoor Water Park
Huntspill River National Nature Reserve
Pumping Sta
Walpole Landfill Site
Pawlett Head
Drove
Rogg's Drove
Main Road
Bleak Bridge
Rose Farm
Poplar Farm
Croft Farm
Sunrise Farm
Witby Bridge
Witby Road Farm
Witby Bow Bridge
Witby Bow Farm
Witby Grove Farm
Witby Farm
Rookery Farm
Model Farm
King's Farm
Witby Road
Parsonage Farm
Ashton Farm
Hackness
New Road
Pear Tree Farm
New Road Farm
Mullins Farm
Hackney Farm
Jefferies Farm
Phippin's Farm
Churchland Farm
Bason Bridge
Smithy Farm
Brue Farm
New House Farm
Merry Farm
Cripp's Bridge
Cripp's Farm
Little Moor Bridge
Red House
Gold Corner Drove
Straight
Black Ditch Bridge
Puriton Road Bridge
Batts Bow Bridge
Plymor Hill Farm
Court Farm
Huntspill
Hackness Farm
Meadow Farm
Hillside Farm
East Farm
Merlands Farm
Ashen Covert
New Ground Covert
Home Covert
Chiland Covert
The Oaks
Eleven Acres Covert
Red Rear
Knowle Park
Knowle Hill
Knowle
Witby Pool
Dunball Wharf
Bawdrip
Barkers Farm
King's Farm
Bawdrip Sta
Pool Sta
Pasture Farm
Pasture Hill
Manor Farm
Bradley
Bradley Heath
Highlands
Moss Cottage
Eastside Farm
Hackness Farm
Merry Farm
Cripp's Farm
Little Moor Bridge
Red House
Gold Corner Drove
Straight
Quaking Bridge
Fyde Drove (Track)
Middle Moor Drove (Tk)
Stoning Pound
Meadow Farm
Chilpitts
Marland
Combe Lane
Upper Combe Plantation
Darsfield Farm
Three Corner Batch
Bishon Lane
Cossington Park
Cossington Grange
Highlands
Bach Road
Knowle Park
Knowle Hill
Crandon Bridge
Lyndhurst
Bradley Bridge
Bradley Heath
Manor Farm
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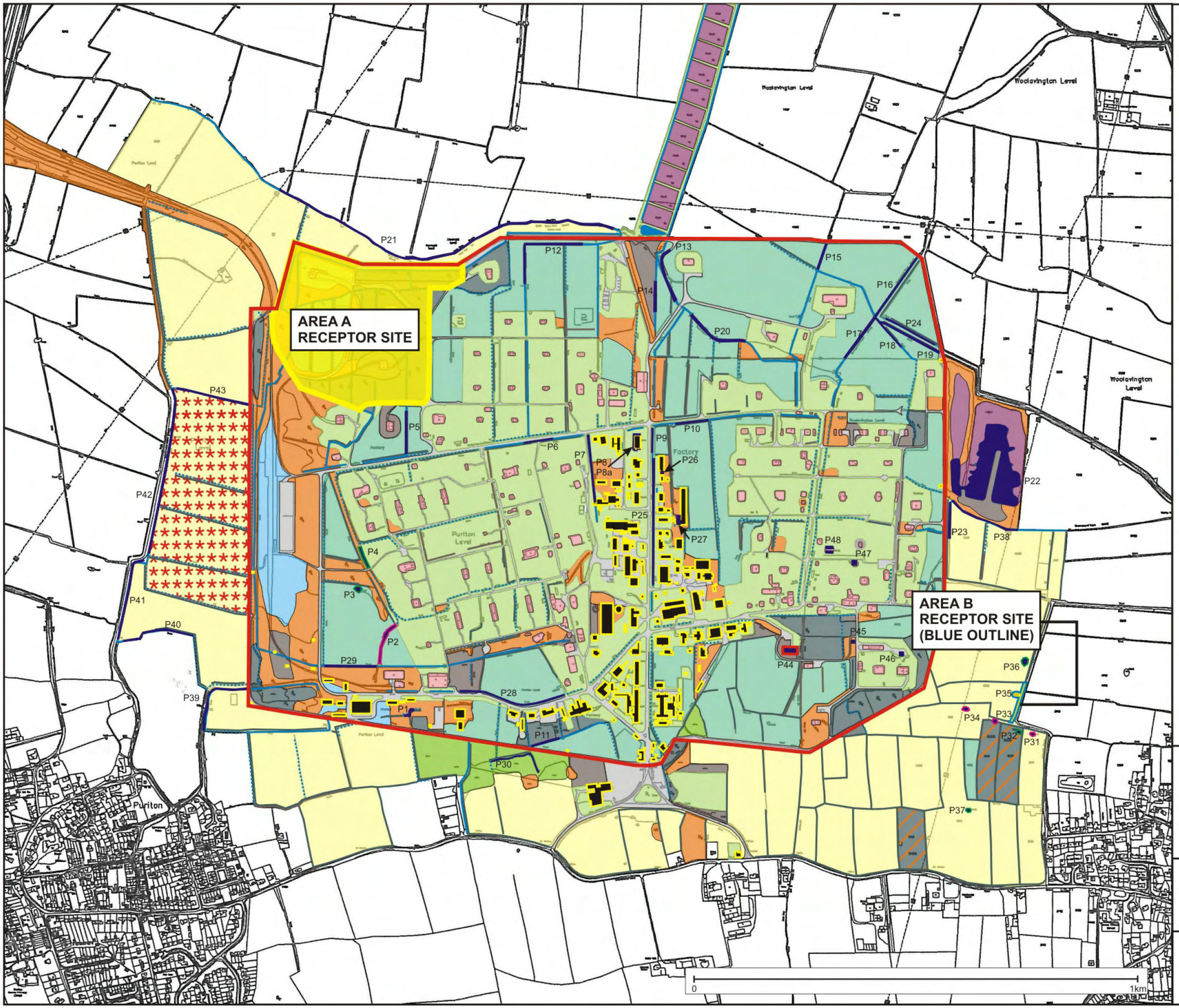
Poplar Farm
Croft Farm
Sunrise Farm
Witby Bridge
Witby Road Farm
Witby Bow Bridge
Witby Bow Farm
Witby Grove Farm
Witby Farm
Rookery Farm
Model Farm
King's Farm
Witby Road
Parsonage Farm
Ashton Farm
Hackness
New Road
Pear Tree Farm
New Road Farm
Mullins Farm
Hackney Farm
Jefferies Farm
Phippin's Farm
Churchland Farm
Bason Bridge
Smithy Farm
Brue Farm
New House Farm
Merry Farm
Cripp's Bridge

PLAN ECO2

Location of Receptor Sites



KEY:

- DEVELOPMENT SITE BOUNDARY
- PONDS/DITCHES SURVEYED
- GCN POND/DITCH: GCN PRESENT IN 2008/9 SURVEY ONLY
- GCN POND/DITCH: GCN PRESENT IN 2008/9 AND 2011 SURVEYS
- GCN CONCRETE TANK: 2012
- IMPROVED GRASSLAND
- SEMI-IMPROVED GRASSLAND
- AMENITY / ROUGH GRASSLAND
- MARSHY GRASSLAND
- PLANTATION / WOODLAND
- ORCHARD
- SCRUB
- HEDGEROW
- TALL RUDERAL VEGETATION
- EPHEMERAL / SHORT PERENNIAL VEGETATION
- STANDING WATER
- REED BED
- DRAINAGE DITCH
- SEASONAL DRAINAGE DITCH
- DRY DITCH
- BUILDING (PRIOR TO DECOMMISSIONING/DEMOLITION
- HARDSTANDING
- CLEARED LAND
- SOLAR PARK (EXISTING)

N

ecology solutions ltd

5106: REMEDIATION APPLICATION (BAE BRIDGWATER), PURITON

PLAN ECO2: LOCATION OF RECEPTOR SITES

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PLAN ECO3

Development Site Ecological Features

KEY:

- DEVELOPMENT SITE BOUNDARY
- PONDS/DITCHES SURVEYED
- GCN POND/DITCH: GCN PRESENT IN 2008/9 SURVEY ONLY
- GCN POND/DITCH: GCN PRESENT IN 2008/9 AND 2011 SURVEYS
- GCN CONCRETE TANK: 2012
- IMPROVED GRASSLAND
- SEMI-IMPROVED GRASSLAND
- AMENITY / ROUGH GRASSLAND
- MARSHY GRASSLAND
- PLANTATION / WOODLAND
- ORCHARD
- SCRUB
- HEDGEROW
- TALL RUDERAL VEGETATION
- EPHEMERAL / SHORT PERENNIAL VEGETATION
- STANDING WATER
- REED BED
- DRAINAGE DITCH
- SEASONAL DRAINAGE DITCH
- DRY DITCH
- BUILDING (PRIOR TO DECOMMISSIONING/DEMOLITION
- HARDSTANDING
- CLEARED LAND
- SOLAR PARK (EXISTING)

N

ecology solutions ltd

5106: REMEDIATION APPLICATION (BAE BRIDGWATER), PURITON

PLAN ECO3: DEVELOPMENT SITE ECOLOGICAL FEATURES

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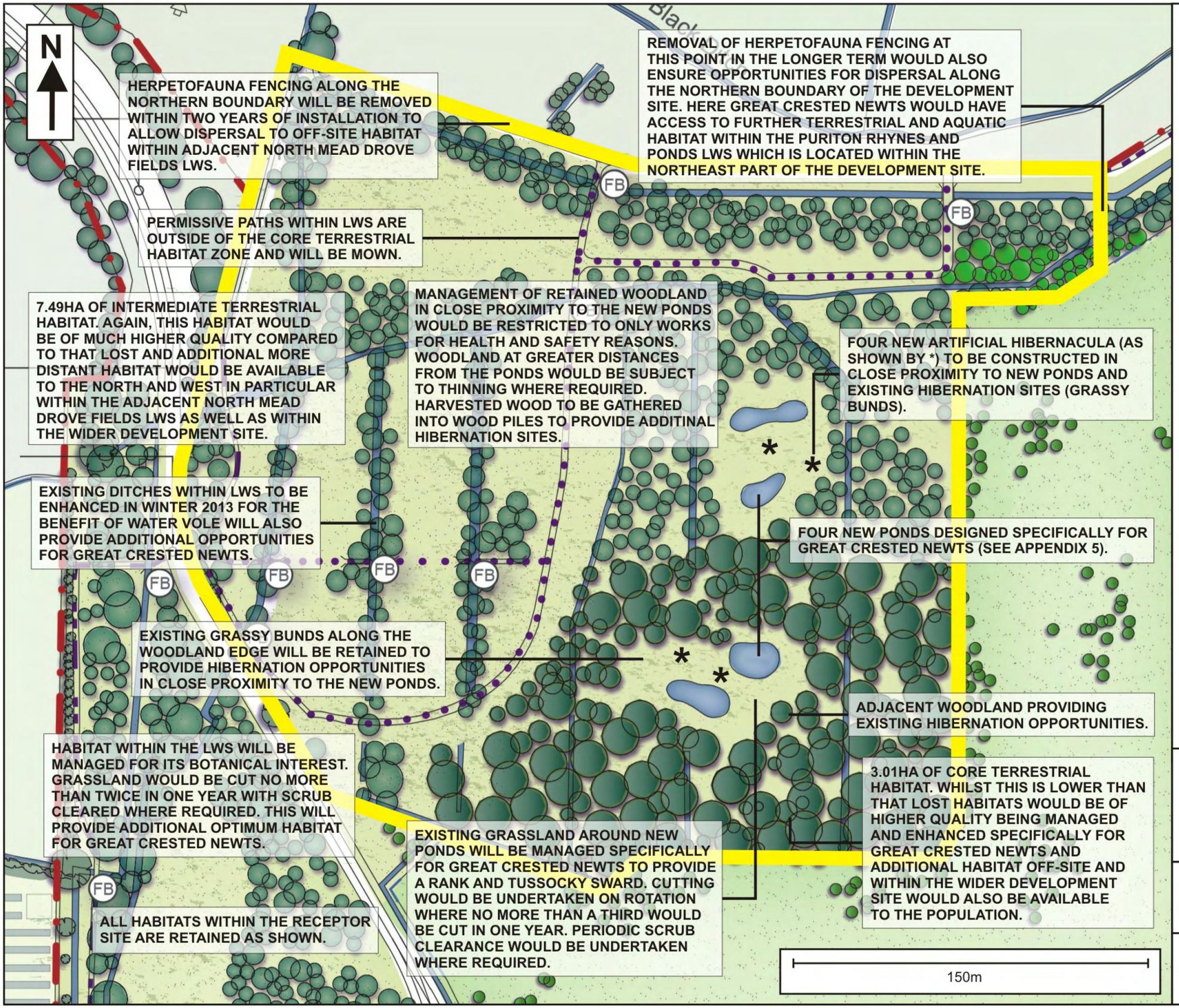
PLAN ECO4

Area A Receptor Site Mitigation Strategy



KEY:

AREA A RECEPTOR SITE

ecology solutions ltd

5106: REMEDIATION APPLICATION (BAE BRIDGWATER), PURITON

PLAN ECO4: AREA A RECEPTOR SITE MITIGATION STRATEGY

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APPENDICES

APPENDIX 1
Pond Designs