



PORT WARRINGTON AND WARRINGTON COMMERCIAL PARK DEVELOPMENT

WARRINGTON

BIODIVERSITY NET GAIN ASSESSMENT

APRIL 2020



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| Prepared for | Peel Land and Property |
| Prepared by | TEP - Warrington |
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| Approved | ACP |

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| 2 | 17/10/19 | IH | ACP | Update following client feedback | Draft |
| 3 | 17/04/20 | SD/ACP | FBH | Update regarding off-site compensation opportunities | For Issue |
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1.0 Introduction

- 1.1 Peel Land and Property are looking to develop a large site in Warrington which lies between the village of Moore in the south and Penketh in the North.
- 1.2 The proposals for the site include extension of the existing Port Warrington facility, creation of Warrington Commercial Park and the creation of Arpley Country Park.
- 1.3 As part of this development Peel Land and Property are committed to ensuring there will be overall Biodiversity Net Gain (BNG) across the development. The general approach to ensuring BNG at this site is outlined in this document.
- 1.4 This work has been undertaken to identify the suitability for the release of this site from the greenbelt for development within the new Warrington Local Plan. The site has already been provisionally identified for development within the Warrington Draft Local Plan (2019) under Policy MD1.
- 1.5 The development will extend the existing Port Warrington facility, the location of which provides a unique potential for a more sustainable approach to freight transport by linking movements along the Manchester Ship Canal not only to the strategic road network but also the rail network. This unique location, and the regional significance of the development, provides the reasons why ecological impacts cannot be avoided e.g. by placing the development elsewhere on land of lower ecological value (NPPF 2019, para. 171).
- 1.6 The creation of the new multi modal port will be partly undertaken within Moore Nature Reserve which is an existing Local Wildlife Site (LWS), whilst a new commercial park is to be built on land formerly managed as part of Arpley Landfill site. The loss of habitats within these sites is to be mitigated through the creation and long-term management of a new country park (Arpley Country Park) and through enhancement of retained sections of the existing Moore Nature Reserve LWS.
- 1.7 The proposed port facility will result in the loss of approximately 44ha of habitats and the proposed commercial park will result in the loss of approximately 31ha of habitats.
- 1.8 As a result of these losses, there is a requirement to develop a strategy for delivery of BNG. This will include habitat creation within the new country park which is approximately 136ha, significant enhancement of the remaining 46ha of the retained Moore Nature Reserve and retained green buffers and options for off-site compensation.
- 1.9 This report details the ecological surveys undertaken to establish a baseline position, what the anticipated impacts are, the proposed mitigation and a high level assessment of off-site compensation sites which identify how 10% biodiversity net gain could be delivered.

Site Overview

- 1.10 The site is located within the borough of Warrington with a central grid reference of SJ 58401 86246 (Figure 1). The site is immediately bounded to the north by the River Mersey and residential and industrial development associated with the towns of Penketh and Great Sankey. To the east lies arable land and the west coast mainline rail route with industrial and residential development associated with the town of Latchford. To the west lies extensive farmland and the River Mersey estuary and to the south the site is immediately bordered by the Manchester Ship Canal with the village of Moore present on the opposite bank.
- 1.11 Moore Nature Reserve is dominated by woodland with numerous waterbodies and areas of open grassland. The former Arpley Landfill site has been capped and remediated with new areas of woodland and grassland creation. Remediation is still ongoing at the time of writing.

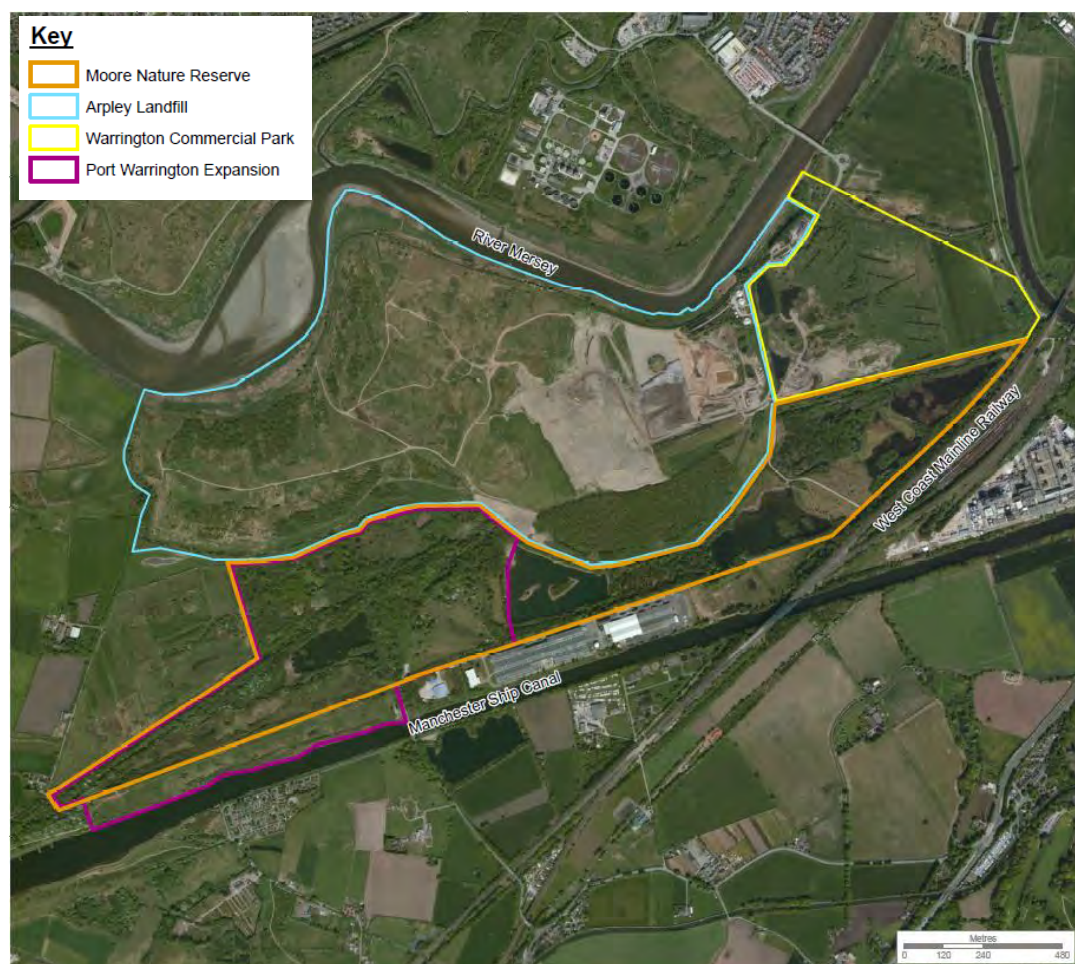


Figure 1. Site Location

Source; Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

2.0 Habitat Assessment

- 2.1 An extended Phase 1 Habitat survey (TEP Ref: 6929.01.001 V3.0) was completed by suitably qualified ecologists across March and April 2018 and across May to August 2019 using the standard JNCC Phase 1 habitat assessment method (2010)¹. This method records the habitat types present in and immediately surrounding the site, based on the JNCC descriptions. Plant species are identified in accordance with Stace (2010)² and recorded as target notes using the DAFOR³ scale.
- 2.2 The survey method was extended through the additional recording of specific features indicating the presence, or potential presence, of protected species or other species of nature conservation significance, including invasive species, with due consideration for current best practice guidance from CIEEM (CIEEM 2017⁴). Weather conditions during the survey varied from wet and cold to hot and dry across the survey period.
- 2.3 This was followed up by a number of detailed protected species surveys including those in relation to bats, wintering/breeding birds, water vole and otter.
- 2.4 The Phase 1 habitat survey identified acid grassland and woodland present on site which appeared to have good floristic diversity. In order to identify the grassland and woodland community/ communities present and to determine their biodiversity value further, a detailed vegetation survey following National Vegetation Classification (NVC) methods was undertaken (TEP Ref: 6929.01.023 and 6929.01.024). The survey was undertaken by a suitably qualified botanist (FISC Level 5, MCIEEM) during May - July 2019 and followed standard methods outlined by Rodwell (2006) using quadrats of 2m x 2m.
- 2.5 An arboricultural survey and assessment was undertaken in September 2019 by qualified arboriculturalists (TEP Report 7815.01.001).
- 2.6 Land to the east of the proposed commercial park was not covered under TEP's assessment, however an ecological assessment of this land was undertaken by AECOM on behalf of Warrington Borough Council (Report Ref 60304850 V2.0).

¹ JNCC (2010) Handbook for Phase 1 Habitat Survey: A technique for environmental audit. Joint Nature Conservation Committee, Peterborough

² Stace, C. (2010) New Flora of the British Isles. 3rd Ed. Cambridge University Press

³ DAFOR = Dominant, Abundant, Frequent, Occasional & Rare

⁴ CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd Edition. Chartered Institute of Ecology & Environmental Management

3.0 Biodiversity Impact Assessment

Habitat Losses

- 3.1 Within the footprint of the proposed Port Warrington extension approximately 44ha of habitats are to be lost. The key habitats lost will be broadleaved woodland including scattered areas of wet woodland and a number of mature reedbeds. There are also existing areas of acid grassland to be lost alongside Lapwing Lake, a large freshwater lake, within the centre of the site. Other habitats to be lost include scrub and tall ruderal vegetation.
- 3.2 Within the proposed Warrington Commercial Park approximately 31ha of habitats are to be lost. The majority of this area is still to be remediated by FCC Environmental following completion of landfill activity. The proposed remediation strategy is shown within Appendix A and it has been assumed that any part of the site that is yet to be remediated will be remediated in line with this strategy. The calculations for net gain are therefore based on a combination of survey information from areas already remediated and information taken from the remediation strategy. Habitats that are yet to be created are attributed limited ecological value in the calculations as it can be assumed they would have been only recently created at the time this development would proceed.

On-site Habitat Creation and Enhancement

- 3.3 A detailed Biodiversity Mitigation Strategy (TEP Report Ref: 6929.01.039) and Landscape and Habitat Management Plan (TEP Report Ref: 6929.01.040) have been produced for the overall scheme (including both development sites, Arpley Country Park and the retained Moore Nature Reserve) which provides full detail of how habitat creation and enhancement will be achieved (see Landscape Masterplan in Appendix A). However, an outline summary of the proposals is provided below.
- 3.4 Approximately 136ha of habitat creation and enhancement at Arpley Country Park is proposed from the point at which the FCC management period ends. This avoids the potential for double counting with the landfill's remediation strategy.
- 3.5 Approximately 34ha of habitat creation is proposed and will include:
- A large expanse of new native woodland planting;
 - New areas of native scrub planting; and
 - Creation of new wildflower meadows across the site.
- 3.6 A comprehensive management plan will be implemented for the remainder of the Arpley Country Park site in order to enhance the remaining habitats including woodland, scrub, grassland and reedbed. The management plan will also ensure removal of invasive species from the site which include giant hogweed and Japanese knotweed.

- 3.7 Current management and wardening of Moore Nature Reserve is due to come to an end in October 2021, following which only minimal works will be undertaken to make the site safe. Therefore there is a significant opportunity for habitat enhancement within the retained area of the reserve, in addition to that which is proposed for the Country Park and retained green buffers, through the in-perpetuity management of the site. Peel are committed to this management which will enable all existing habitats to be enhanced to good condition through detailed methods to be laid out in the full Landscape and Habitat Mitigation Plan to be submitted during the detail design stage.
- 3.8 In addition, within the retained area of Moore Nature Reserve, a large section of the Runcorn to Latchford canal which is currently dry will be subject to rewetting works to provide enhanced provision of open water for species present on site.

Biodiversity Net Gain Assessment

- 3.9 The areas and condition (following DEFRA 2005⁵ and ecologists/arborists professional opinion) of habitats to be lost and retained, along with those that will be enhanced and created have been entered into the Environment Bank Biodiversity Impact Assessment Calculator (V2, May 2019) in order to obtain a measure of the biodiversity impact at the site. The DEFRA metric v2 will be used in due course, but as it is currently still in beta-test stage, it was premature to adopt it.
- 3.10 The habitats within the matrices have been assessed using the information gathered on site during the Phase 1 habitat surveys, tree surveys and NVC surveys.
- 3.11 Four separate matrices have been completed covering each of the following areas:
- The proposed Port Warrington development;
 - The proposed Warrington Commercial Park development;
 - Arpley Landfill to Arpley Country Park development; and
 - The retained sections of Moore Nature Reserve (including retained green buffers on Port Warrington)
- 3.12 The matrices split up change in biodiversity into both an area score and a linear score. The scores for each of these are set out below.

Area score

- 3.13 The Net Biodiversity Balance (NBB) for each area is provided in Table 1. The overall NBB for the site is -13.32 which is derived from the sum of NBBs for the proposed port development and proposed commercial park development taken away from the enhancements to the retained nature reserve and the enhancements and creation undertaken for Arpley Country Park.

Table 1 - Area biodiversity scores

| Site | Net Biodiversity Balance |
|--------------------------------------|--------------------------|
| Proposed Port Warrington development | -507.70 |

⁵ DEFRA 2005, Higher Level Stewardship: Farm Environmental Plan Guidance Handbook

| Site | Net Biodiversity Balance |
|--|--------------------------|
| Proposed Warrington Commercial Park | -129.36 |
| Arpley Landfill to Arpley Country Park development | +542.47 |
| Retained Moore Nature Reserve and green buffers | +81.27 |
| Total change in biodiversity | -13.32 |

- 3.14 In order to achieve a 10% net gain, a positive score of **+63.7** is required (10% of the initial losses of 507.7 and 129.36 shown in rows 1 and 2 of the table above. This requires off-site work to create **76 units**.

Linear score

- 3.15 The change in linear habitats, which at this site includes hedgerows and ditches, has been calculated as a NBB of +3.85 resulting in net gain of linear habitats. The score for each of the four areas is set out below in Table 2. This means that a 10% net gain in linear habitats is secured without the need for off-site works.

Table 2 - Linear biodiversity scores

| Site | Net Biodiversity Balance |
|--|--------------------------|
| Proposed Port Warrington development | -5.50 |
| Proposed Warrington Commercial Park | -2.10 |
| Arpley Landfill to Arpley Country Park development | +8.47 |
| Retained Moore Nature Reserve and green buffers | +2.98 |
| Total change in biodiversity | +3.85 |

- 3.16 Within both the area and linear assessment it has not always been possible to replace habitats lost with habitats of the same or a higher distinctiveness due to the limitations of creation of certain habitats on a capped landfill. However, the retention and enhancement of existing habitats is felt to be the most ecologically sound approach to ensuring net gain at the site as it avoids unnecessary loss of existing habitat.

Assumptions and Limitations

- 3.17 The following section describes the assumptions that have been made with regard to assessment of the habitats on site in order to best complete the biodiversity offsetting matrices to deliver an accurate and robust assessment. It also details any limitations which have become apparent during the biodiversity net gain assessment process.
- 3.18 The calculations have been completed using information gathered from the on-site surveys including the Phase 1 habitat survey, NVC survey and arboricultural survey. Determination of the condition was assessed using the above information alongside an assessment of the habitats in line with the DEFRA Farm Environmental Plan.
- 3.19 The DEFRA Farm Environmental Plan is designed specifically for assessment of condition of farmland features and does not always accurately reflect habitats identified during a Phase 1 habitat survey or the assessment criteria does not allow adequate assessment of the condition of habitats found on site. In these scenarios the expert opinion of the site ecologist or arborist has been used to determine condition.
- 3.20 With regard to the habitats assessed, primarily a top down approach was used. Where recognisable habitats were present beneath dense woodland or scrub, the woodland or scrub was recorded in the assessment. However in the case of scattered individual trees, the habitat beneath was measured, being the dominant habitat in that area. Specific requirements for individual tree loss will be detailed within the final Arboricultural Implications Assessment to be submitted within any detailed application.
- 3.21 Alongside the surveyor's notes and mapping for the site, aerial imagery was used to aid mapping the habitat boundaries as accurately as possible, but it is understood that there will be inherent minor differences between the baseline mapping and what is present on site.
- 3.22 Where habitats are yet to be remediated the plans for remediation are only available in PDF and are block drawings only with limited detail (as shown in the proposals at Appendix A). Therefore there is likely to be some level of overlap with areas already remediated. This assessment will be updated upon completion of the remediation scheme, provided this is prior to submittal of a detailed planning application, to accurately reflect the pre commencement condition of these areas and avoid any double counting of habitat creation on site. Following completion of the BNG assessment, the overall scheme is currently in net loss. However net gain in biodiversity can be achieved through off-site compensation.

4.0 Off-site Compensation Opportunities

- 4.1 The initial results of the biodiversity impact assessment, taking into account on-site habitat losses, enhancements and creations, indicate there would be a net loss of -13.32 biodiversity units. It is therefore not possible to achieve net gain within the proposed development area and opportunities for off-site compensation have been explored within Peel's nearby land holdings.
- 4.2 In order to achieve a 10% net gain in biodiversity for the development, compared to the baseline losses of 637 units, a net positive score of 63.7 units is required. Thus 76 units must be provided off-site (see Table 1 earlier). It is assumed that 10% gain will have become mandatory by the time of commencement of development.
- 4.3 Five potential sites for off-site compensation have been identified which could provide the required number of biodiversity units. These are illustrated in Drawing G6929.01.057. With the exception of one site which had been investigated previously, the timing of this work (April 2020) has coincided with restrictions to site survey as a result of the Covid19 pandemic. As a result, an assessment of the existing baseline habitats has been made via the use of satellite imagery, DEFRA's magic map and other online resources and existing data. An assumption has been made that the existing condition of habitats is Moderate and that enhancement of the habitats could achieve Good condition.

- 4.4 A summary of the potential at each site is provided below:

Gatewarth Landfill

- 4.5 Gatewarth, a large former landfill site located immediately north of site on the north side of the River Mersey is currently managed by Warrington Borough Council and supports rough grassland and scrub over former landfill. There are opportunities to enhance the biodiversity of the site, in areas of existing rough grassland, by creating additional areas of broad-leaved woodland in the east of the site.
- 4.6 This habitat creation would result in up to 80 biodiversity units being achieved at this site, providing ample scope to achieve net gain.

Wigg Island

- 4.7 Wigg Island, a reclaimed industrial site, is a community park and Local Nature Reserve. Wigg Island is located approximately 3.5km west of the Port Warrington site and is managed by Mersey Gateway Environmental Trust. The entire northern boundary is dominated by coastal saltmarsh while the rest of the Island comprises a mosaic of mixed plantation woodland, scrub and rough grassland. The condition of the areas of rough and amenity grasslands could be enhanced to create a more diverse species-assemblage.
- 4.8 Should enhancement be undertaken at Wigg Island within the areas of rough and amenity grassland, we believe that up to 13.5 biodiversity units can be achieved at this site.

Paddington Meadows

- 4.9 Paddington Meadows is a Local Nature Reserve owned by Warrington Borough Council located approximately 3.5km north east of the Port Warrington site. The site is a riverside 'meadow' dominated by semi-improved grassland, crossed by a network of hedgerows and bounded by scrub which borders the River Mersey. Opportunities for enhancement include improving the condition of the grassland to increase species-richness and the creation of new wetland habitat of approximately 1ha.
- 4.10 Should the enhancement and creation measures suggested be undertaken at Paddington Meadows, we believe that up to 80 biodiversity units can be achieved at this site, providing ample scope to achieve net gain.

New Cut Woolston

- 4.11 New Cut Woolston is a linear site adjacent to Paddington Meadows Local Nature Reserve at its western end and opposite Woolston Eyes Site of Special Scientific Importance (SSSI) at its eastern end. The site is owned by Manchester Ship Canal Company (MSCC) and is approximately 3.6km north east of the Port Warrington Site. A former canal runs the length of the site and its banks are heavily dominated by scrub. The east of the site comprises a mosaic of rough grassland and scrub and provides the greatest opportunities for enhancement at this site. Creation of new wetland and improving the condition of the grassland in this area will provide biodiversity benefits at this site. There may also be an opportunity to restore the overgrown and filled in canal but this has not been considered within the biodiversity metric calculations.
- 4.12 Should the proposed habitat enhancement and creation be undertaken at New Cut Woolston, we believe that up to 20 biodiversity units can be achieved at this site, resulting in net gain for the development proposals.

Rixton

- 4.13 Rixton, a former landfill, owned by Peel, Biffa and MSCC is located approximately 7.8km east of the Port Warrington site. Rixton comprises a mosaic of broadleaved woodland, scrub and rough grassland and in the east of the site, an area of arable land. New habitat creation within the area of arable, including new woodland planting, creation of wetland habitat and wildflower meadow is thought to be the greatest opportunities for enhancement of this site. There is also an opportunity for new woodland planting in the north-east of the site within the rough grassland on part of the former landfill.
- 4.14 Should the proposed habitat enhancement and creation be undertaken at Rixton, we believe that up to 89 biodiversity units can be achieved at this site, resulting in ample scope to achieve biodiversity net gain for the development proposals.

Conclusions

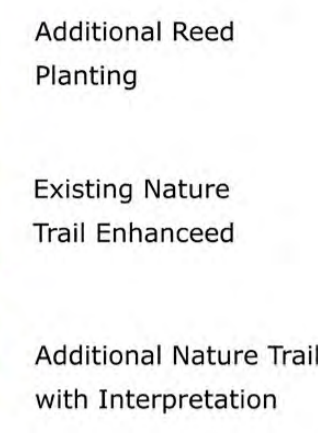
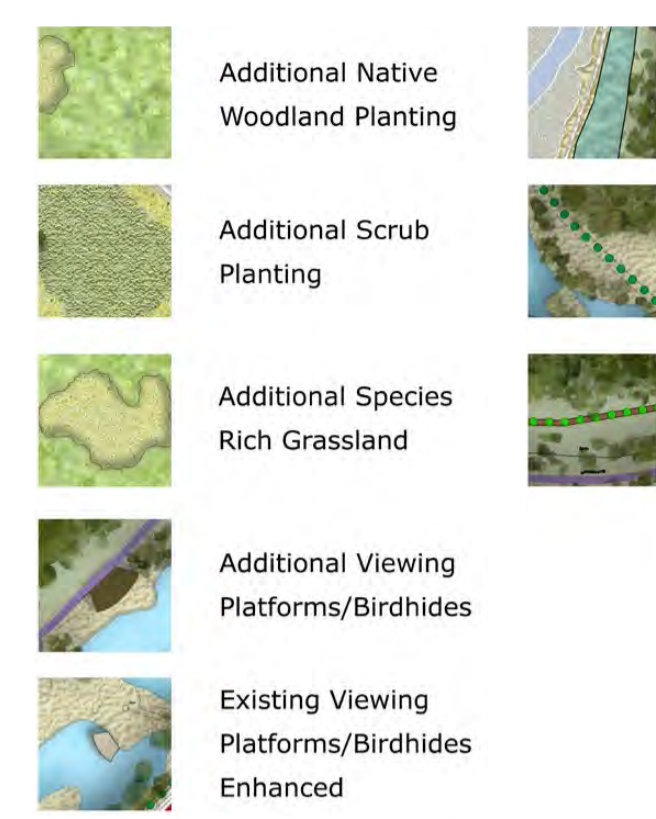
- 4.15 Following the biodiversity impact assessment using the Environment Bank's Biodiversity Impact Assessment Calculator (V2, May 2019) for the Port Warrington Expansion and Warrington Commercial Park development proposals, an initial loss of 637 biodiversity units is predicted. Applying the 10% net gain approach, a net positive score of +63.7 units is required.
- 4.16 A significant programme of compensatory and enhancement work is possible on site, at Arpley Country Park and in Moore Nature reserve, although there would still be a slight shortfall with a net loss of -13.32 biodiversity units.
- 4.17 Thus In order to achieve a 10% net gain for the proposals 76 biodiversity units must be provided off-site.
- 4.18 A high level assessment of several potential off-site compensation sites on land owned by Peel within 8km of the development proposals and all associated with the River Mersey corridor was undertaken. This assessment demonstrates that there are a range of opportunities available where wetland, woodland and grassland creation and grassland enhancement can be undertaken which would enable 10% net gain to be achieved, with Rixton former landfill, Paddington Meadows and Gatewarth former landfill providing the greatest potential.
- 4.19 An assessment of opportunities with respect to the long-term management arrangements for these sites was not part of this current study, but may provide the potential for additional biodiversity net gain if this can also be applied to the sites.
- 4.20 All the biodiversity compensation and enhancement works, whether on or off-site will need to be secured by planning condition and/or legal agreement, with a requirement for 30 years' conservation management likely to be mandated under the forthcoming Environment Act.
- 4.21 An eventual assessment using the DEFRA 2.0 metric will be required under Local Plan policy, but as this is still in beta text mode, it was deemed premature to apply it for this study. Nevertheless it is very likely that it will return a similar result.

APPENDIX A: Development Plans

ARPLEY NATURE PARK

Masterplan Key

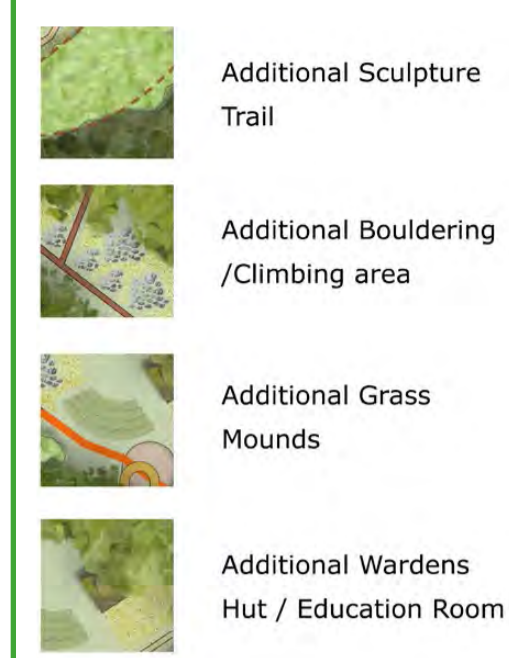
Ecological Enhancement Proposals



Country Park Features

- (A) Links to disused Canal Towpath
- (B) New Viewing Platform / Bird Hides
- (EB) Existing Platform / Bird Hides enhanced

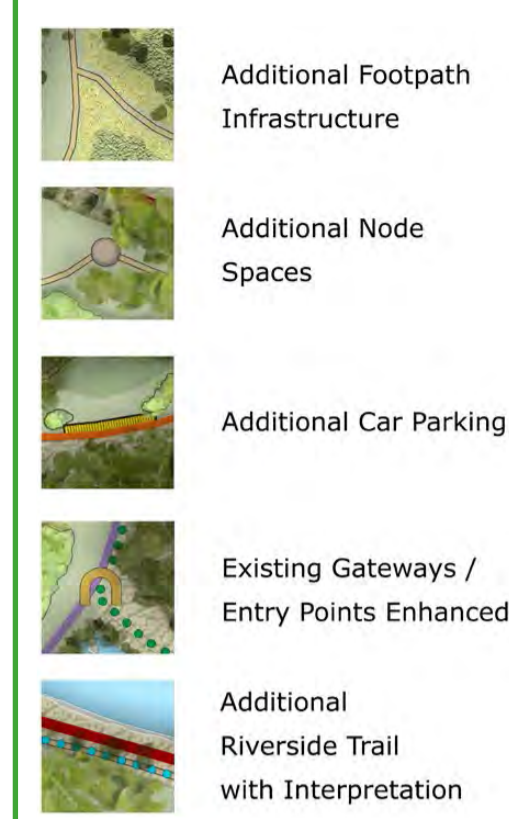
Recreation Enhancement Proposals



Country Park Features

- (C) Forestry School / Outdoor Performance Area
- (D) Young Children's Play
- (E) Adventure Play Area
- (F) Sculpture Trail
- (G) Bouldering Rock Climbing
- (H) Sculptural Feature
- (I) Wardens Hut / Education Room

Additional Infrastructure



Country Park Features

- (J) Main Country Park Entrances
- (K) Proposed Car Parking
- (L) Secondary Pedestrian Entrances
- (M) Node Spaces
- (N) Gateways

Proposed & Improved Vehicular Routes



Consented Enhancement Proposals



Warrington Waterfront Proposals Key



Project : Warrington Waterfront
 Client : Peel Land and Property
 Drawing Title : Landscape Masterplan Proposal
 Drawing Number : 10315_GA_PL_01







Key:

- Arpley Landfill Site Boundary
- Moore Nature Reserve
- Woodland within Moore Nature Reserve
- Grassland within Moore Nature Reserve
- Waterbody within Moore Nature Reserve
- Extent of proposed landfill development
- Proposed Pre-Settlement Contours (at 2m intervals)
- Indicative Path
- Retained Existing Woodland
- Native Woodland Planting
- Scrub
- Hedgerow (with trees)
- Open Grassland
- Conservation Grassland
- Undisturbed area: mixed tall ruderal herb with dense continuous scrub
- Retained Surface Water Lagoon
- Ditch
- Site Infrastructure Areas
- Barn Owl Box
- Area to be excavated only if required

NOTE:
The proposals shown are indicative only and will be developed in further detail, should planning consent be granted.

**Arpley Landfill Site
Extension of Operational Life
ES Addendum**

Figure 6

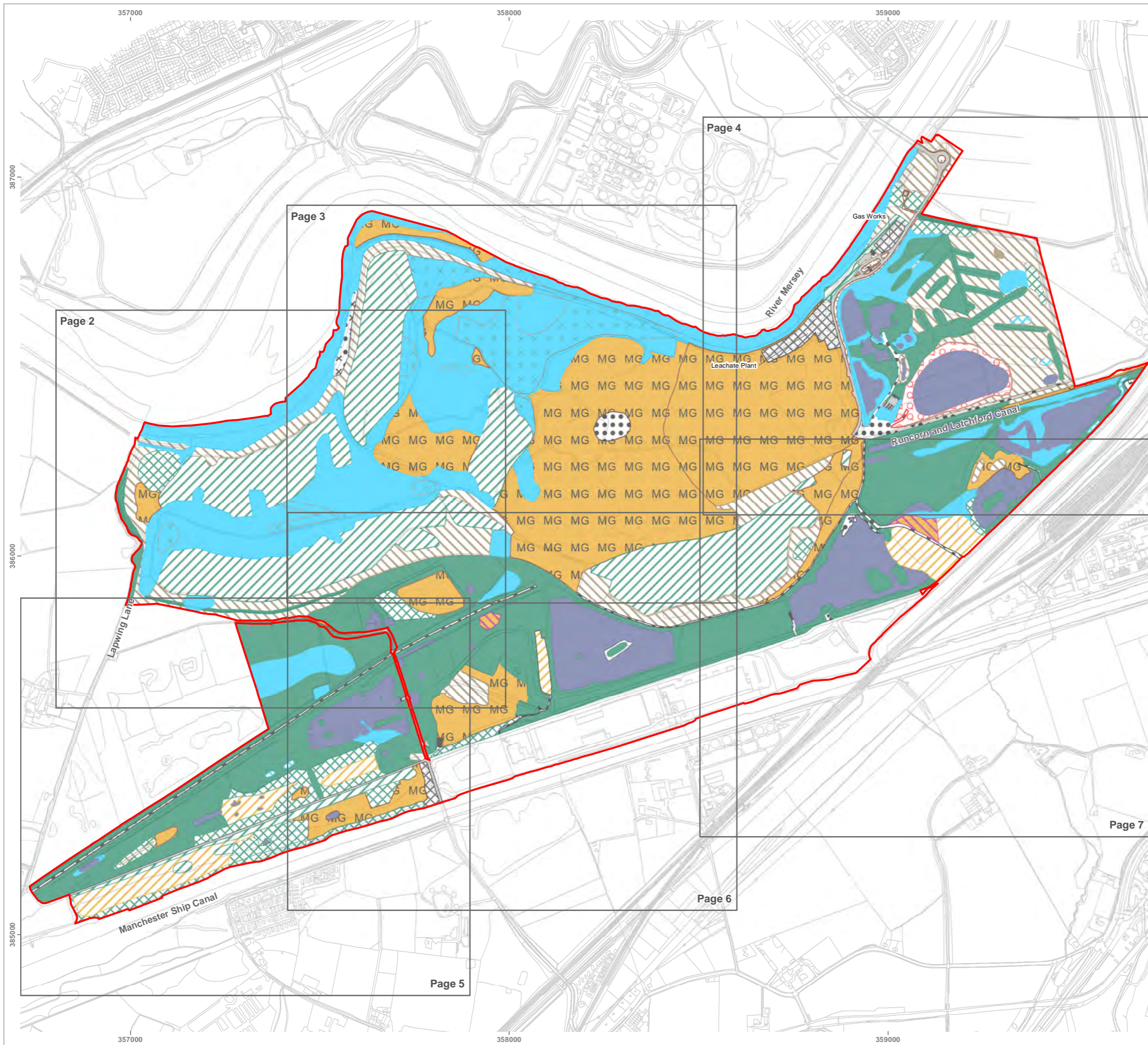
Restoration Landscaping Scheme

| | |
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| Scale 1:10,000@A3 | Date January 2015 |
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DRAWINGS:

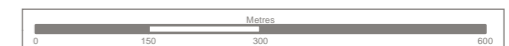
G6929.01.001B Phase 1 Habitat Map

G6929.01.057 Biodiversity Net Gain Potential Off-site Compensation Sites

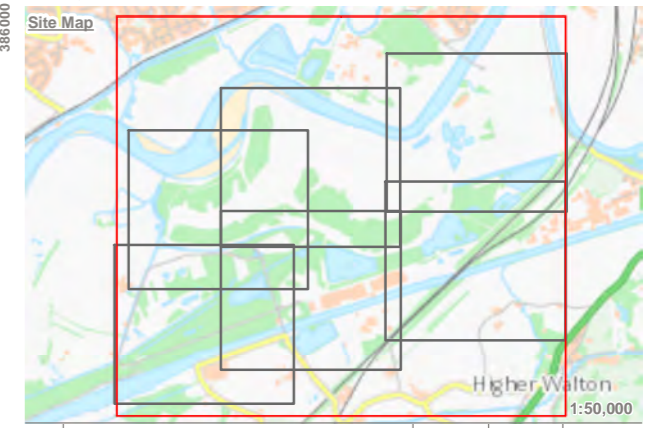


Key

- Survey boundary
- Semi-natural broad-leaved woodland
- Plantation broad-leaved woodland
- Dense/continuous scrub
- Swamp with scattered scrub
- Unimproved acid grassland
- Semi-improved acid grassland
- Modified neutral grassland
- Species-poor modified neutral grassland
- Marsh/marshy grassland
- Continuous bracken
- Tall ruderal
- Swamp
- Ephemeral pool
- Standing water
- Shingle
- Quarry
- Bare ground with ephemeral/short perennial
- Introduced shrub
- Building
- Bare ground
- Hardstanding
- Not surveyed



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| Rev | Description | Drawn | Approved | Date |
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| A | Updates to habitat areas | MK | LC | 31/08/2019 |

TEP | **THE ENVIRONMENT PARTNERSHIP**

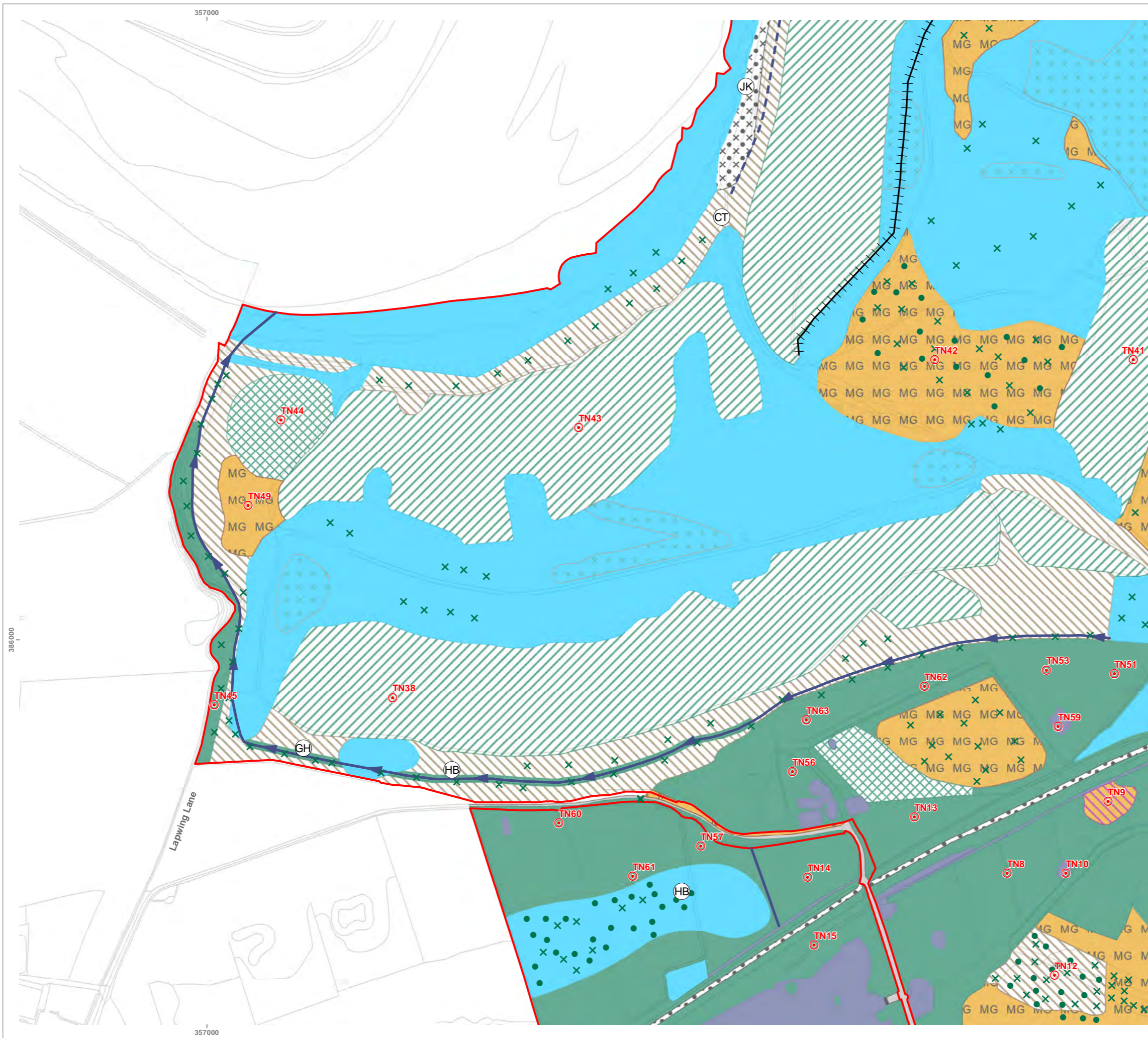
Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
 Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Port Warrington, Warrington

Title
Phase 1 Habitat Survey - Overview

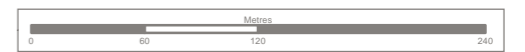
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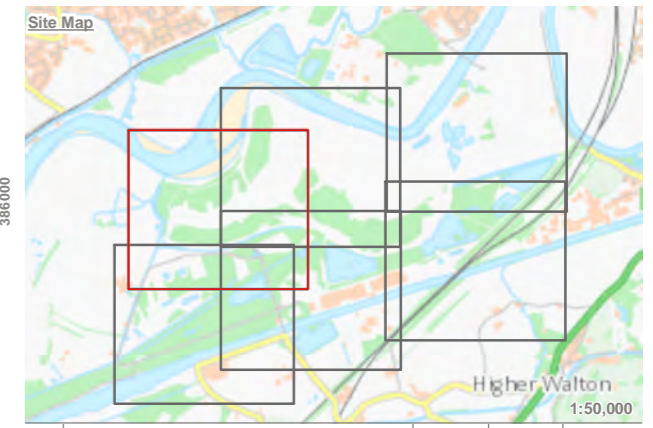


Key

- Survey boundary
- Target note
- Cotoneaster
- Giant hogweed
- Himalayan balsam
- Japanese knotweed
- x Scattered scrub
- Scattered broad-leaved tree
- Standing water
- Running water
- Fence
- Dry ditch
- Semi-natural broad-leaved woodland
- Plantation broad-leaved woodland
- Dense/continuous scrub
- Swamp with scattered scrub
- Modified neutral grassland
- Marsh/marshy grassland
- Tall ruderal
- Swamp
- Standing water
- Bare ground
- Hardstanding
- Building



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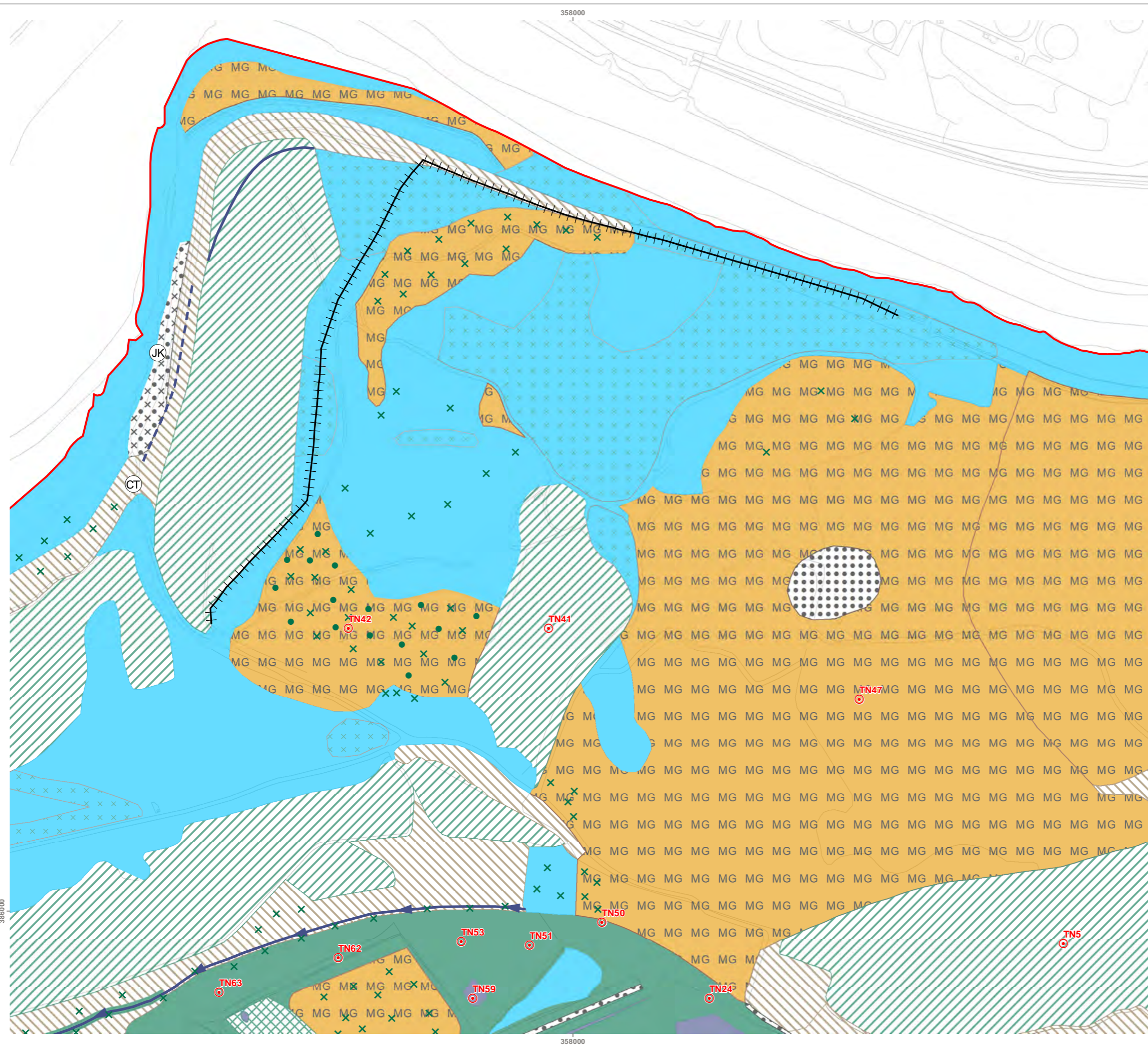
TEP | **THE ENVIRONMENT PARTNERSHIP**

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 Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

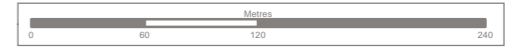
Project
Port Warrington, Warrington

Title
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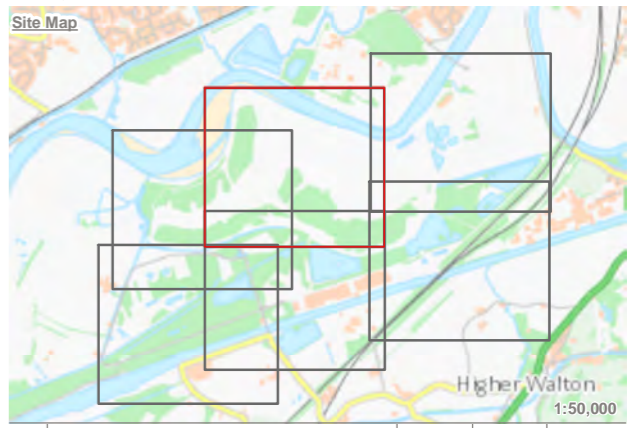
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| Drawing Number G6929.001B.2 | | | | Sheet 2 of 7 |
| Drawn JO | Checked LC | Approved IH | Scale 1:4,000 @ A3 | Date 15/09/2019 |



- Key**
- Survey boundary
 - Target note
 - CT Cotoneaster
 - JK Japanese knotweed
 - x Scattered scrub
 - Scattered broad-leaved tree
 - Standing water
 - Running water
 - Fence
 - Dry ditch
 - Semi-natural broad-leaved woodland
 - Plantation broad-leaved woodland
 - Dense/continuous scrub
 - Swamp with scattered scrub
 - Modified neutral grassland
 - Tall ruderal
 - Swamp
 - Standing water
 - Bare ground with ephemeral/short perennial
 - Bare ground



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|-----|--------------------------|-------|----------|------------|
| A | Updates to habitat areas | MK | LC | 31/08/2019 |

TEP | **THE ENVIRONMENT PARTNERSHIP**

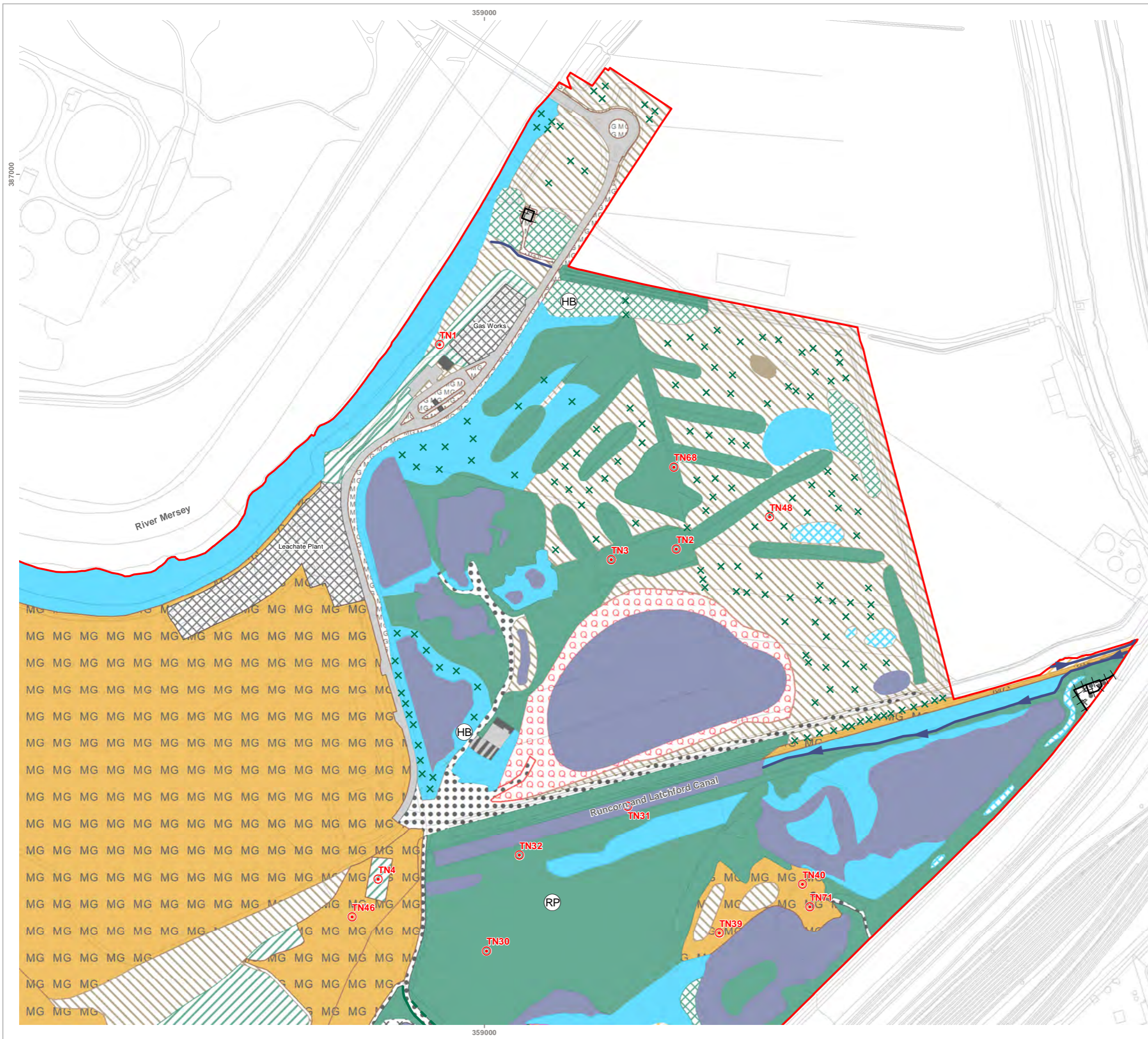
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Project
Port Warrington, Warrington

Title
Phase 1 Habitat Survey - Detailed Part 2

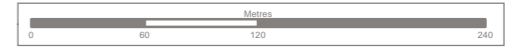
Drawing Number
G6929.001B.3 Sheet 3 of 7

| Drawn | Checked | Approved | Scale | Date |
|-------|---------|----------|--------------|------------|
| JO | LC | IH | 1:4,000 @ A3 | 15/09/2019 |

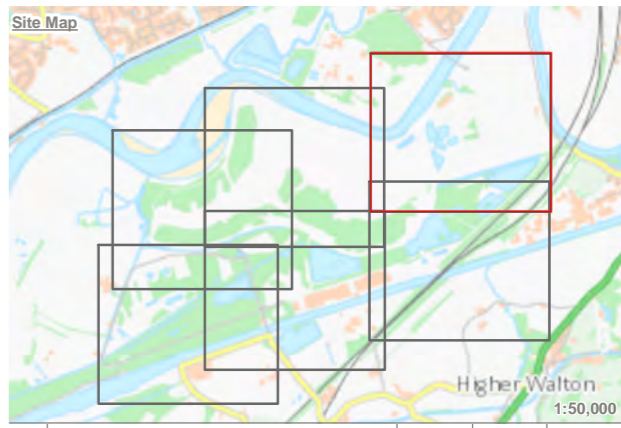


Key

- Survey boundary
- Target note
- Himalayan balsam
- Rhododendron ponticum
- x Scattered scrub
- Standing water
- Running water
- Species-poor intact hedge
- Species-poor defunct hedge
- Fence
- Semi-natural broad-leaved woodland
- Plantation broad-leaved woodland
- Dense/continuous scrub
- Swamp with scattered scrub
- Unimproved acid grassland
- Modified neutral grassland
- Species-poor modified neutral grassland
- Marsh/marshy grassland
- Continuous bracken
- Tall ruderal
- Swamp
- Ephemeral pool
- Standing water
- Quarry
- Bare ground with ephemeral/short perennial
- Introduced shrub
- Building
- Bare ground
- Hardstanding
- Not surveyed



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| A | Updates to habitat areas | MK | LC | 31/08/2019 |

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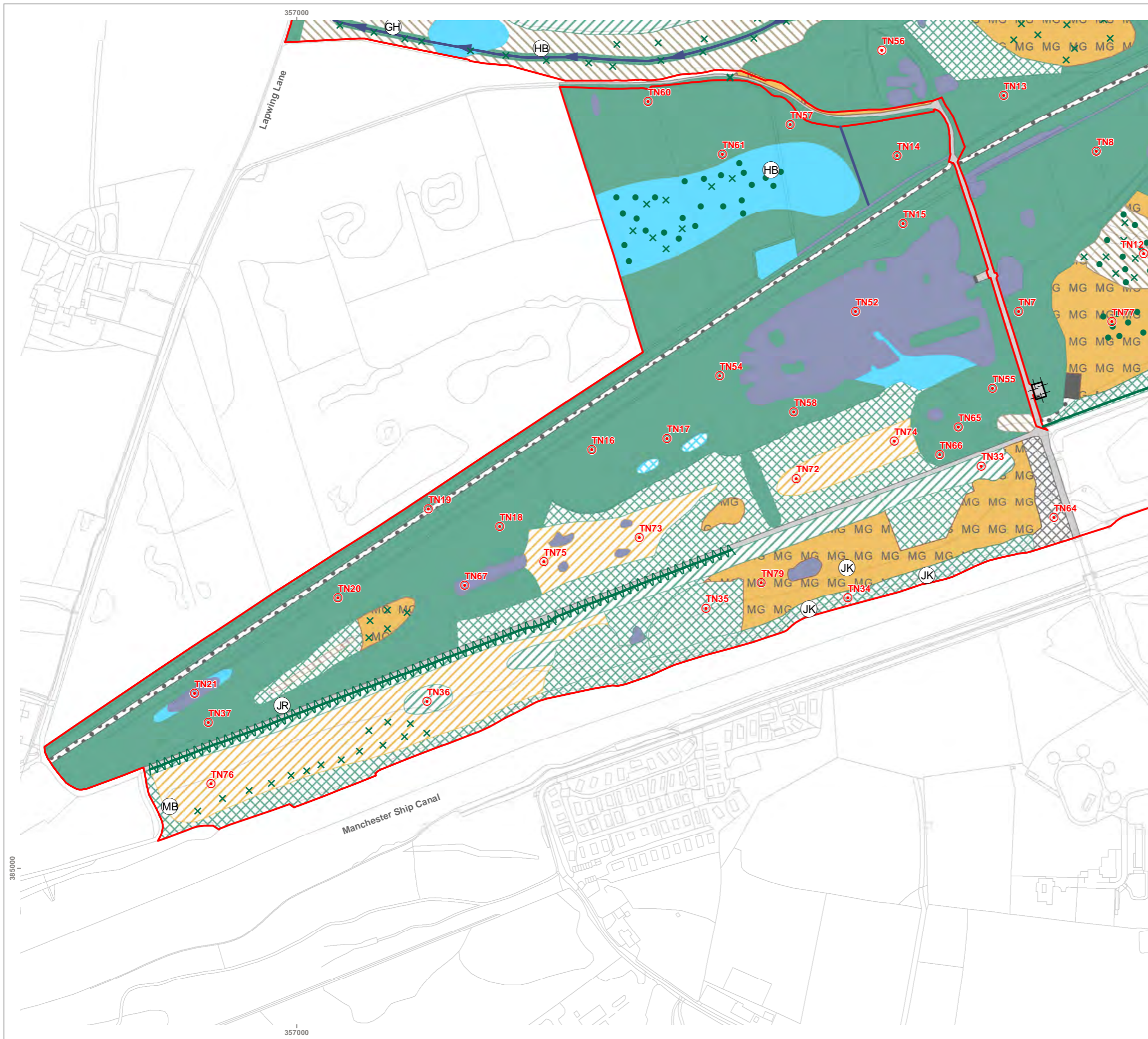
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Title
Phase 1 Habitat Survey - Detailed Part 1

Drawing Number
G6929.001B.4 Sheet 4 of 7

| Drawn | Checked | Approved | Scale | Date |
|-------|---------|----------|--------------|------------|
| JO | LC | IH | 1:4,000 @ A3 | 15/09/2019 |



Key

- Survey boundary
- Target note
- GH Giant hogweed
- HB Himalayan balsam
- JK Japanese knotweed
- JR Japanese rose
- MB Montbretia
- x Scattered scrub
- Scattered broad-leaved tree
- Standing water
- ▶ Running water
- Native species-rich intact hedge
- Species-poor intact hedge
- Fence
- Semi-natural broad-leaved woodland
- Plantation broad-leaved woodland
- Dense/continuous scrub
- Unimproved acid grassland
- Modified neutral grassland
- Tall ruderal
- Swamp
- Ephemeral pool
- Standing water
- Building
- Bare ground
- Hardstanding
- Not surveyed

0 60 120 240
Metres

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Site Map

Higher Walton
1:50,000

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|-----|--------------------------|-------|----------|------------|
| A | Updates to habitat areas | MK | LC | 31/08/2019 |

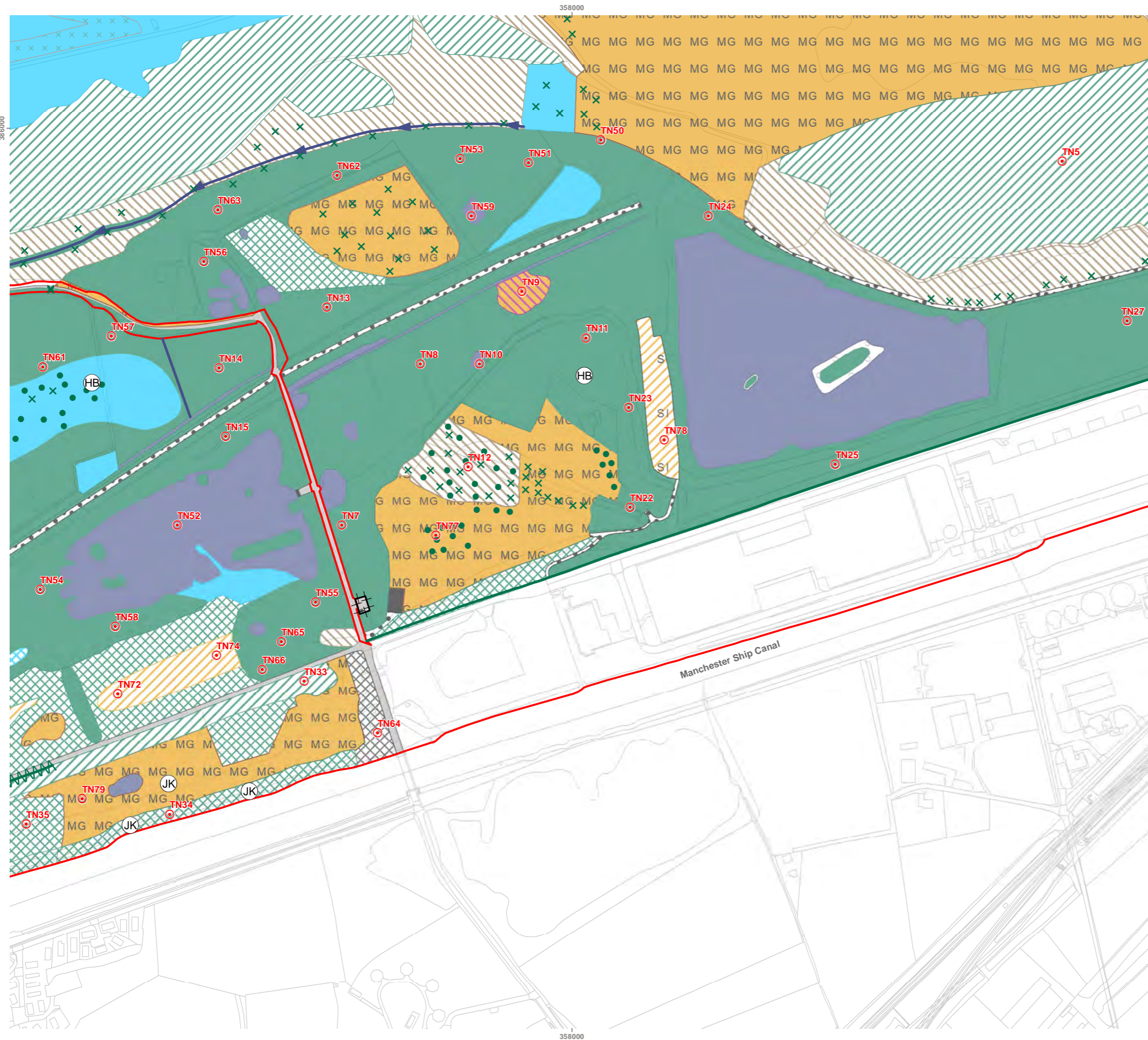
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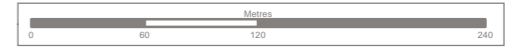
Title
Phase 1 Habitat Survey - Detailed Part 6

| | | | | |
|---------------------------------------|---------------|----------------|-----------------------|--------------------|
| Drawing Number G6929.001B.5 | | | | Sheet 5 of 7 |
| Drawn JO | Checked LC | Approved IH | Scale 1:4,000 @ A3 | Date 15/09/2019 |

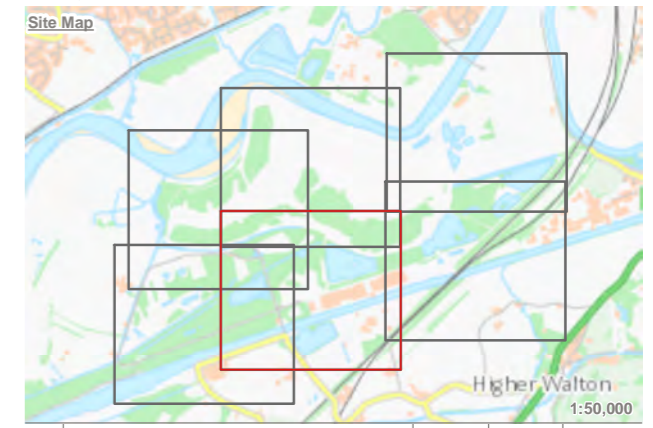


Key

- Survey boundary
- Target note
- Himalayan balsam
- Japanese knotweed
- x Scattered scrub
- Scattered broad-leaved tree
- Standing water
- Running water
- ~ Native species-rich intact hedge
- Species-poor intact hedge
- + Fence
- Semi-natural broad-leaved woodland
- Plantation broad-leaved woodland
- Dense/continuous scrub
- Swamp with scattered scrub
- Unimproved acid grassland
- Semi-improved acid grassland
- Modified neutral grassland
- Marsh/marshy grassland
- Tall ruderal
- Swamp
- Ephemeral pool
- Standing water
- Shingle
- Building
- Bare ground
- Hardstanding
- Not surveyed



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|-----|--------------------------|-------|----------|------------|
| A | Updates to habitat areas | MK | LC | 31/08/2019 |

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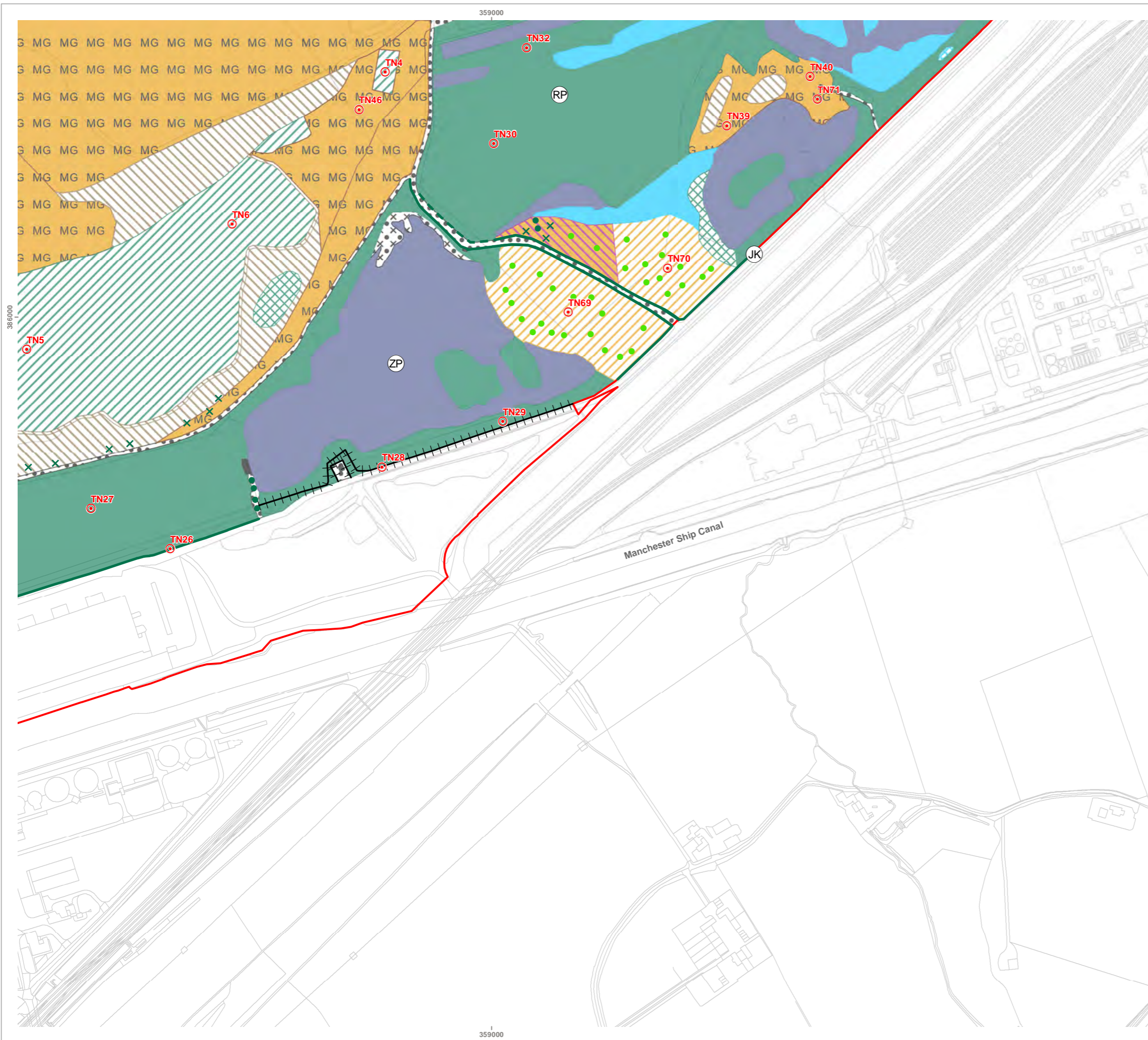
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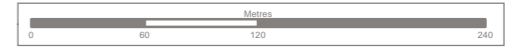
Title
Phase 1 Habitat Survey - Detailed Part 5

Drawing Number
G6929.001B.6 Sheet 6 of 7

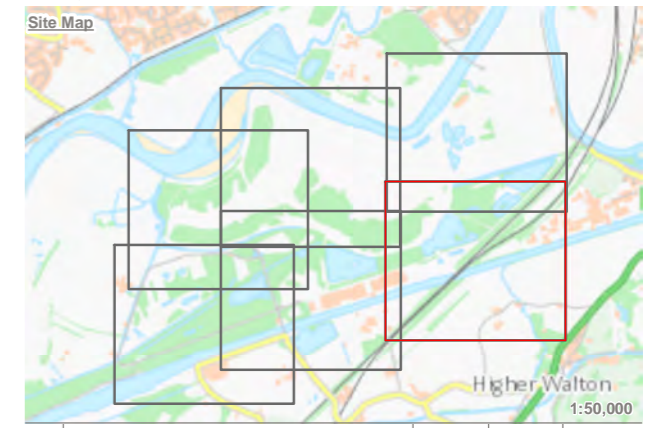
| Drawn | Checked | Approved | Scale | Date |
|-------|---------|----------|--------------|------------|
| JO | LC | IH | 1:4,000 @ A3 | 15/09/2019 |



- Key**
- Survey boundary
 - Target note
 - Japanese knotweed
 - Rhododendron ponticum
 - New Zealand pygmyweed
 - x Scattered scrub
 - Scattered broad-leaved tree
 - Scattered coniferous tree
 - Species-poor intact hedge
 - Species-poor defunct hedge
 - Fence
 - Semi-natural broad-leaved woodland
 - Plantation broad-leaved woodland
 - Dense/continuous scrub
 - Unimproved acid grassland
 - Modified neutral grassland
 - Marsh/marshy grassland
 - Tall ruderal
 - Swamp
 - Ephemeral pool
 - Standing water
 - Bare ground with ephemeral/short perennial
 - Building
 - Bare ground



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|-----|--------------------------|-------|----------|------------|
| A | Updates to habitat areas | MK | LC | 31/08/2019 |

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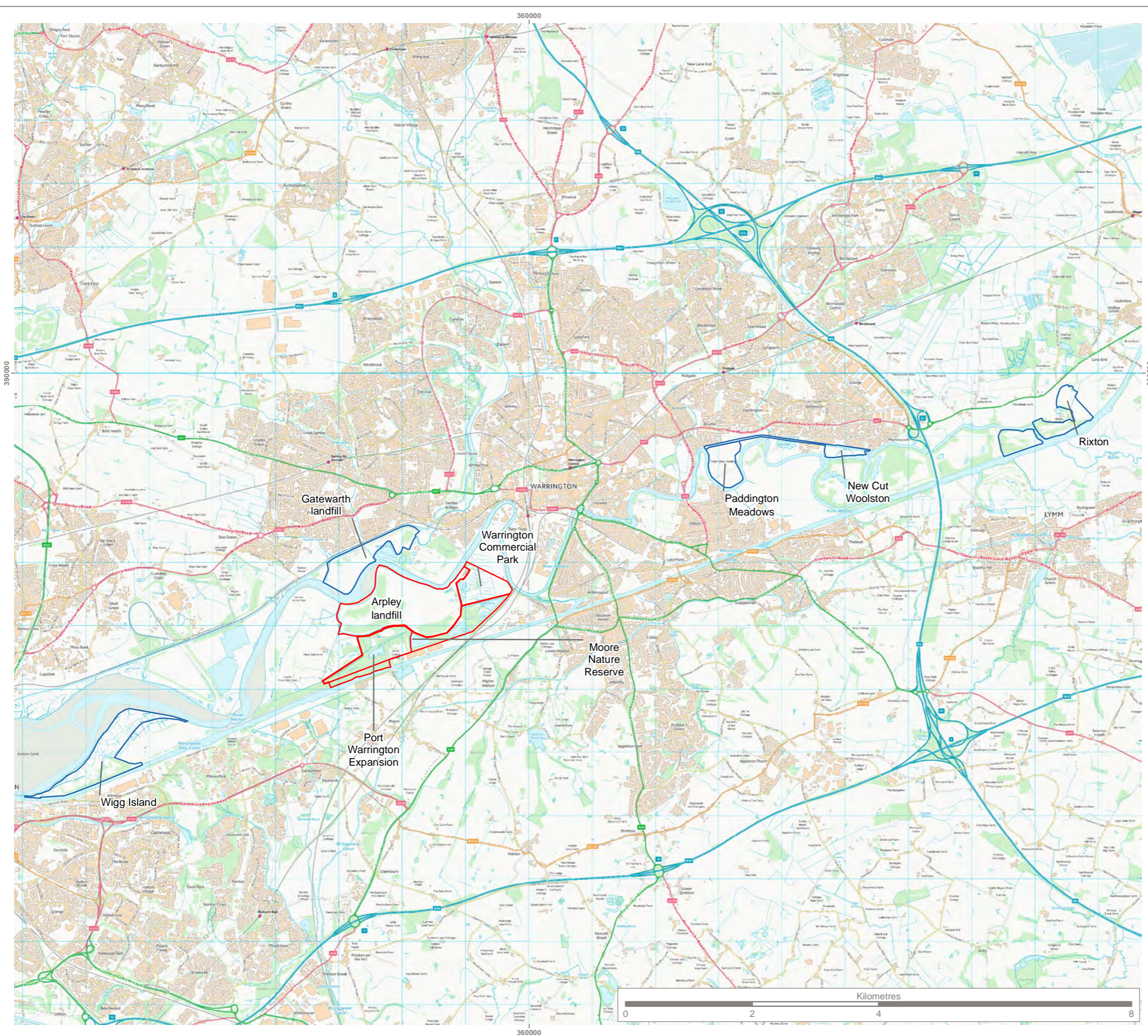
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Title
Phase 1 Habitat Survey - Detailed Part 4

Drawing Number
G6929.001B.7 Sheet 7 of 7

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KEY

- Port Warrington Sites
- Potential Off-site Compensation Sites

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1:400,000

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Project
Port Warrington, Warrington

Title
Biodiversity Net Gain Potential Off-site Compensation Sites

Drawing Number
G6929.01.057

| Drawn | Checked | Approved | Scale | Date |
|-------|---------|----------|---------------|------------|
| MW | JO | SD | 1:60,000 @ A3 | 16/04/2020 |

