The Drax Power (Generating Stations) Order

Land at, and in the vicinity of, Drax Power Station, near Selby, North Yorkshire

Environmental Statement
Appendix 9.10 - Biodiversity Net Gain Assessment

The Planning Act 2008
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulation 5(2)(a)

Drax Power Limited

Drax Repower Project

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Table of Contents

Table of Tables

1 EXECUTIVE SUMMARY

1.1.1. Biodiversity Net Gain (BNG) is the end result of a process applied to infrastructure development so that overall, there is a positive outcome for biodiversity. The process itself follows the mitigation hierarchy, which sets out that everything possible must be done to first avoid and then minimise and restore / rehabilitate losses of biodiversity on site. Only as a last resort, residual losses are compensated for using biodiversity offsets, which are distinguished from other forms of mitigation in that they are off the development site and require measurable conservation outcomes.

1.1.2. The Drax Repower Project has adopted the Defra metric and the biodiversity net gain process to undertake a baseline and preliminary post-development biodiversity and linear unit calculation to quantify the biodiversity which will be lost due to the Proposed Scheme and provide an indication of the biodiversity which will be replaced through onsite compensation once the Proposed Scheme has been built. This information will be used to indicate whether the Proposed Scheme is likely to meet no net loss or net gain for biodiversity. The methodology is detailed in full within the body of this report.

1.1.3. This assessment takes a precautionary approach and is based on the worst case scenario for habitat loss for the Proposed Scheme. It assumes that both Unit X and Unit Y will be built. A number of additional assumptions have been made and these are listed in section 3 of the report. When further information about the Proposed Scheme's landscape and biodiversity strategy is available this assessment should be updated to reflect any changes.

1.1.4. This report aims to:

- Establish the total number of baseline biodiversity units (BU) and linear units (LU) which will be lost due to construction of the Proposed Scheme.
- Establish the total number of biodiversity and linear units which will be reinstated after construction of the Proposed Scheme.
- Establish the total number of biodiversity and linear units which will be created and/or enhanced within designated Compensation Areas after the construction of the Proposed Scheme.
- Inform compensation measures designed to mitigate for habitat loss due to the Proposed Scheme.
- Determine whether the Proposed Scheme under the worst case scenario for habitat loss will result in a net loss, no net loss or a net gain for biodiversity

1.1.5. Tables 1 to 3 summarise the findings of the biodiversity net gain assessment.

Table 1 - Summary of Baseline Biodiversity Units (BU) and Linear Units (LU) Lost

Unit Type	Power station development area Permanent Loss	Power station development area Temporary Loss	Pipeline Permanent Loss	Pipeline Temporary Loss	Total Permanent Loss	Total Temporary Loss	Total Unit Loss
BU	35.4	38.8	8.6	52.6	**44.0**	**87.4**	**131.4**
LU	1167.6	2000.0	N/A	380.4	**1167.6**	**2380.4**	**3548.0**

Table 2 - Summary of Total Post-Development Biodiversity Units (BU) and Linear Units (LU)

Unit Type	Reinstated	Reinstated (Pipeline)	Compensation Areas	Total
BU	14.6	48.6	82.3	**145.5**
LU	860.5	190.2	908.4	**1959.1**

Table 3 - Summary of Total Post-Development Biodiversity Units (BU) and Linear Units (LU)

Unit Type	Total Baseline Units Lost (A)	Total Units Post-Development (B)	Unit Difference (B – A)	Outcome
BU	131.4	145.5	14.1	**NET GAIN (11% increase)**
LU	3458.0	1959.1	-1498.9	**NET LOSS**

1.1.6. Table 3 demonstrates that the Proposed Scheme under the worst case scenario (assuming the greatest impact on biodiversity) achieves a net gain for biodiversity for area based habitats and a net loss for biodiversity for linear habitats. This takes into account the temporary impacts and the habitats that are being restored or created. Please note that although the Proposed Scheme achieves a net gain for area based habitats, it cannot claim biodiversity net gain for the Proposed Scheme as a whole until sufficient compensation is put in place to achieve a net gain for linear habitats.

1.1.7. It is important to recognise that the quantification of biodiversity units is one of a number of factors to be considered when assessing the impact on biodiversity. Alongside the information within this report the decision should be informed by the ES chapter which includes other factors associated with the biodiversity lost to the Proposed Scheme.

Recommended Next Steps

1.1.8. The recommended next steps in relation to biodiversity net gain are as follows:

- Undertake a detailed post-development calculation once the biodiversity and landscape mitigation plans are finalised. This updated assessment will be based on more realistic scenario for losses and gains of biodiversity units than the current assessment, and will be able to determine exactly what habitat types and area of habitat will be recreated on site and whether additional offsite compensation will be required to meet net gain or no net loss, or whether there are options to achieve a net gain with a slight reduction in compensation provision.
- Arrange for Phase 1 habitat surveys and condition assessments of Compensation Areas A, B, O and P to be undertaken by ecologists to ensure that habitat data is up to date.
- Seek to deliver net gain for biodiversity of linear habitats by restoring these within the footprint of the Proposed Scheme where possible. If this is not possible create or enhance habitats offsite as compensation for the impact of the development.

2 BIODIVERSITY NET GAIN

2.1 Introduction

2.1.1. Biodiversity Net Gain (BNG) is the end result of a process applied to infrastructure development so that overall, there is a positive outcome for biodiversity. The process itself follows the mitigation hierarchy, which sets out that everything possible must be done to first avoid and then minimise and restore / rehabilitate losses of biodiversity on site. Only as a last resort, residual losses are compensated for using biodiversity offsets, which are distinguished from other forms of mitigation in that they are off the development site and require measurable conservation outcomes.

2.1.2. Adopting a BNG approach can account for biodiversity losses not fully covered by legal and planning systems. Whilst some species are extensively protected, many are not; with the consequence that development can be 'legally compliant' but still result in biodiversity loss. The BNG approach guards against this, enabling development to contribute towards the national and global target of halting biodiversity loss by 2020 and towards local and national strategies for conserving and enhancing wildlife.

2.1.3. In terms of nature conservation, business as usual for the Proposed Scheme (i.e. without BNG) would follow the standard Ecological Impact Assessment (EcIA) model of mitigating losses, compensating for losses and then enhancement. Under this model, mitigating losses and impacts required by UK and EU nature conservation legislation is only required for impacts to Important Ecological Features (IEFs) assessed as of local importance or above. BNG therefore goes beyond this, accounting for all direct losses of, and indirect impacts on, biodiversity from development.

2.1.4. For BNG to be used appropriately and to generate long-term gains for nature, the good practice principles established by the Business and Biodiversity Offset Programme (BBOP) can be used. These principles have been established in the context of UK development by the Construction Industry Research and Information Association (CIRIA), the Chartered Institute for Ecology and Environmental Management (CIEEM) and the Institute of Environmental Management and Assessment (IEMA) (see Appendix 1). The BNG process for Drax Repower Project adheres to these principles.

Project Context

2.1.5. The Proposed Scheme is to repower up to two existing coal-powered generating units (Units 5 and 6) at the Existing Drax Power Station Complex with up to 4 gas turbines that can operate in both combined cycle and open cycle modes. The term "Repower" is used, as existing infrastructure, such as the steam turbines and cooling towers, that are currently used for the coal fired units would be reutilised for the new gas fired generating units/stations. In order to repower to gas, a new Gas Pipeline would be constructed from the Existing Drax Power Station Complex to the National Transmission System (NTS) operated by National Grid. The Drax Repower Project has adopted the Defra metric to undertake a baseline and preliminary post-development biodiversity and linear unit calculation to quantify the biodiversity which will be lost due to the Proposed Scheme and provide an indication of the biodiversity which will be replaced through onsite compensation once the Proposed Scheme has been built. This

information will be used to indicate whether the Proposed Scheme is likely to meet no net loss or net gain for biodiversity. This assessment takes a precautionary approach and is based on the worst case scenario for habitat loss for the Proposed Scheme. It assumes that both Unit X and Unit Y will be built. A number of additional assumptions have been made and these are listed in section 3. Post submission of the DCO application it is possible that the assessment could show a different outcome when further information about the Proposed Scheme's landscape and biodiversity strategy is available. Further, the assessment would need to be updated if only unit X were to be built.

2.1.6. The Defra metric will be used to assess the biodiversity impacts and opportunities of the Proposed Scheme. This assessment will inform compensation measures designed to mitigate for habitat loss due to the Proposed Scheme. This includes informing habitat restoration and reinstatement proposals as well as new habitat creation. The Defra metric is also required to evaluate progress towards achievement of the target of net gain or no net loss. This information will provide a quantitative benchmark to inform the size and type of habitat compensation requirements as a result of habitat lost to the Proposed Scheme.

Scope of Report

2.1.7. This report aims to:

1. Establish the total number of baseline biodiversity and linear units which will be lost due to construction of the Proposed Scheme.
2. Establish the total number of biodiversity and linear units which will be reinstated after construction of the Proposed Scheme.
3. Establish the total number of biodiversity and linear units which will be created and/or enhanced within designated Compensation Areas after the construction of the Proposed Scheme.
4. Inform compensation measures designed to mitigate for habitat loss due to the Proposed Scheme.
5. Determine whether the Proposed Scheme under the worst case scenario for habitat loss will result in a net loss, no net loss or a net gain for biodiversity.

2.1.8. Please note that the BNG report does not cover requirements of the Proposed Scheme arising from potential impacts on protected species and designated sites. This information will be covered within the Environmental Impact Assessment (EIA) report and Statement to Inform Appropriate Assessment (SIAA) report.

Planning Policy

2.1.9. Although not currently a legal obligation, the National Planning Policy Framework (NPPF) refers to net gains in biodiversity under Section 11 for conserving and enhancing the natural environment:

"The planning system should contribute to and enhance the natural and local environment by: …minimising impacts on biodiversity and providing Net Gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline of biodiversity,

including establishing coherent ecological networks that are more resilient to current and future pressures" (Section 11, paragraph 109).

"When determining planning applications…: if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated or, as a last resort, compensated for, then planning permission should be refused" (Section 11, paragraph 118).

2.2 Methodology

Overview

2.2.1. The method applied followed step two of WSP's BNG process (see Appendix 2 for the full six step process). The relevant sections of step two are provided below:

Step 2 Initial Biodiversity Assessment

i. **Survey baseline habitats and their condition.** Ideally, a habitat condition assessment is undertaken during Phase 1 Habitat survey. If Phase 1 Habitat data has been collected prior to initiating the BNG process, condition assessment can be undertaken either a) retrospectively through interpretation of Phase 1 target notes, consultation with surveyors, or employing a number of assumptions; or b) during an additional site visit.

ii. **Identify irreplaceable habitat.** Following Defra guidance, irreplaceable habitats within the Proposed Scheme boundary must be identified and excluded from the biodiversity unit calculations.

iii. **Calculate baseline biodiversity units using the biodiversity metric.** This calculation includes all habitats (minus irreplaceable habitats) within the Proposed Scheme boundary prior to development, and is informed by Phase 1 Habitat data and results of the condition assessment. The baseline biodiversity unit calculation may be run on a number of scheme options if the scheme is at options appraisal stage.

iv. **Calculate post-development biodiversity units using the biodiversity metric.** This calculation accounts for all of the proposed habitats (including retained habitat and habitat lost or created as a result of the development) within the Proposed Scheme boundary post-development. The calculation is informed by scheme design, landscape plans, and proposed ecological mitigation. The assessment is based upon the target state (type, size and condition) of habitats being created.

v. **Produce an 'Initial Biodiversity Assessment' report.** The report sets out the BNG process in the context of the Proposed Scheme, and includes the method and results of initial baseline and post-development biodiversity unit calculations.

Irreplaceable Habitats

2.2.2. Following Defra guidance, irreplaceable habitats and any areas which have been put in place to mitigate or compensate for impacts on irreplaceable habitats or Sites of Specific Scientific Interest (SSSIs) have been excluded from this biodiversity unit calculation. It is important to note that BNG or No Net Loss cannot be achieved for the scheme as a whole if there is a negative impact on an irreplaceable habitat.

Linear Habitats

2.2.3. Defra recognise that hedgerows are a very important feature in terms of biodiversity value: *"Their contribution, by area, to biodiversity in the landscape is far greater than even the most biodiversity rich habitats' Defra 2012 a.* Hedgerows therefore cannot be treated as other habitats and are considered in terms of linear units (LU) rather than biodiversity units (BU). Both are arbitrary units which are not directly comparable with each other.

2.2.4. It is also worth noting that the Gas Pipeline for the Proposed Scheme will be installed by trenchless techniques where possible. Therefore, any hedgerows and watercourses along the pipeline will not be impacted directly and are not expected to be subject to significant effects in the assessment set out in the ES.

Baseline Biodiversity Unit Calculation

Extent and Sources of Baseline Habitat Data

2.2.5. 1.21 Identification of baseline habitats was based on a digitised Phase 1 Habitat layer. The BNG calculation covered all habitats (linear and non-linear) within the Proposed Scheme footprint of each Option, with the exception of the following Phase 1 habitat typologies which, in the context of BNG, are not considered 'habitats':

- Bare ground.
- Buildings.
- Fence.
- Hardstanding.
- Refuse tip.
- Wall.

2.2.6. Rivers, streams and dry ditches have also been excluded from the baseline unit calculation at this stage in the BNG process. The reason for this is the lack of available information to undertake accurate condition assessments of these habitats; both in terms of field data for the watercourses in question, and standardised guidance as to the most appropriate means of assessing condition of these habitats. For the baseline biodiversity unit calculation, running water or ditches are expressed simply as a length in metres.

2.2.7. The Phase 1 habitat survey was undertaken following Joint Nature Conservation Committee (JNCC, 2010) survey methodology.

2.2.8. Where primary Phase 1 habitat survey data was not available (for Compensation Areas A, B and O which can be identified on the map of Compensation Areas in Appendix 3), the Phase 1 habitat data collected for the White Rose Carbon Capture and Storage Project was used to determine the habitat types present. Although this data was over two years old, it was deemed suitable for the purpose of a preliminary biodiversity unit calculation. However, if a detailed biodiversity unit calculation is undertaken at a later date when the biodiversity and landscape compensation areas and planting plans are finalised, it will be necessary to survey these areas to ensure the information provided in the updated report is accurate.

2.2.9. Where no Phase 1 habitat data exists (Compensation Area P only) it is assumed that the baseline habitat is a habitat of low distinctiveness and poor condition for example improved grassland (B4).

Defra Biodiversity Unit Calculations

2.2.10. A baseline biodiversity unit calculation was completed for all areas of permanent and temporary land take within the operational footprint of the Proposed Scheme. Habitat area (or length), distinctiveness and condition were used to calculate baseline biodiversity units and linear units, providing a measure of the biodiversity on site before development. This calculation is in accordance with Defra's technical paper, guidance for developers and guidance for offset providers (Defra 2012 a, b and c). This is the standard metric used for calculating biodiversity units and linear units in the UK.

2.2.11. Distinctiveness and condition are given numerical 'scores' which are multiplied, together with ha (or linear km) of habitat to give the number of biodiversity units:

Distinctiveness x Condition x Area (ha) = BASELINE BIODIVERSITY UNITS

Length (km) x Condition = BASELINE LINEAR UNITS

Distinctiveness

2.2.12. Habitat distinctiveness is defined as a collective measure of biodiversity and includes parameters such as the number and variety of species found there (richness and diversity), how rare the species are, and how many species the habitat supports that are not common elsewhere.

2.2.13. To determine habitat distinctiveness, Phase 1 habitat types were transposed into the standard habitat distinctiveness typology and bands issued by Defra ('the Defra habitat type'). A Habitat Matrix spreadsheet was developed which matched each Phase 1 habitat type to a Defra habitat type, enabling consistent assessment of distinctiveness for all habitat parcels. This matrix is held within the WSP biodiversity toolkit.

2.2.14. Where no directly comparable Defra habitat type was available to match the vegetation recorded by Phase 1 habitat survey (e.g. tall ruderal vegetation), the closest approximation was selected.

2.2.15. The Defra distinctiveness bands and associated scores are described in Table 4.

Table 4 - Habitat Distinctiveness Bands and Scores

Distinctiveness Band	Distinctiveness Score	Habitat Types Included
High	**6**	Habitats of principal importance i.e. those which are referenced within the NERC Act 2006. This excludes ancient woodland and other habitats which are irreplaceable.
Medium	**4**	Other semi-natural habitats that do not fall within the scope of habitats of principal importance definitions, i.e. all other areas of woodland (e.g. non-native coniferous plantation), other grassland (e.g. species poor semi-improved), uncultivated field margins, road verge and railway embankments (excluding those that are intensively managed).

Distinctiveness Band	Distinctiveness Score	Habitat Types Included
Low	**2**	Improved grassland, arable fields (excluding any uncultivated margins), built up areas, domestic gardens, regularly disturbed bare ground (e.g. quarry floor, landfill sites etc.), verges associated with transport corridors.

2.2.16. For some habitat types, multiple distinctiveness bands can apply, depending on the quality of the habitat. Decisions on which distinctiveness band to assign were based on criteria listed in the Habitat Matrix, employing a precautionary approach.

2.2.17. All hedgerows are assumed to be of High distinctiveness because the vast majority of hedgerows will meet Habitat of Principal Importance (HPI) criteria. For this reason, distinctiveness is not included as part of the linear unit calculation. This follows the approach set out by Defra.

Condition

2.2.18. Condition, in the context of BNG, is defined as the quality of a particular habitat. For example, a habitat is in poor condition if it fails to support the rare or notable species for which it is valued, or if it is degraded as a result of pollution, erosion, invasive species or other factors.

2.2.19. The Defra metric requires habitat condition to be assessed using the system presented in Natural England's Farm Environment Plan (FEP) manual.

2.2.20. Habitat condition scores were assigned based on the criteria in Table 5.

Table 5 - Habitat Condition Bands and Scores

Condition Band	Condition Score	Criteria for Assigning Condition
Good	**3**	Any habitat which passes all the FEP criteria.
Moderate	**2**	Any habitat which fails **one** FEP criterion.
Poor	**1**	Any habitat which fails **two or more** FEP criteria.

2.2.21. As primary habitat condition assessment data were not available, habitat condition was assigned based on the following assumptions: poor condition was assumed for habitats of low distinctiveness, and moderate condition was assumed for all other habitats. The exception to this is defunct hedgerows, which, by nature of being defunct, fail one of the condition assessment criteria; the maximum condition score achievable is therefore moderate. Assumptions for this assessment are recorded in section 2.4.

Deriving the Total Number of Baseline Biodiversity Units

2.2.22. Following the scoring of all habitat parcels for habitat distinctiveness and condition, the total number of baseline Biodiversity Units will be calculated for each area-based habitat (including those assumed for arable field margins) using the following formula:

Distinctiveness x Condition x Area (ha) = BASELINE BIODIVERSITY UNITS

2.2.23. The scores generated by each individual habitat parcel will then be summed to provide the total number of biodiversity units generated by the baseline habitat parcels. It is important to set out the biodiversity units for the individual habitats so that these can be compared with the post-development biodiversity units for the same habitat type.

2.2.24. The number of baseline linear units present should be calculated for linear habitats (keeping hedgerows and watercourses separate).

2.2.25. The number of linear units is calculated as follows:

Length of linear habitats lost (m) x Condition = BASELINE LINEAR UNITS

Post-Development Biodiversity Unit Calculation

2.2.26. Biodiversity units and linear units resulting from landscape and ecological mitigation designs for the Proposed Scheme, including newly created and retained habitats, are referred to as post-development biodiversity units / linear units.

Linear Habitats

2.2.27. In the post-development unit calculation, linear habitats have been kept separate from units calculated for area-based habitats; this mirrors the approach for baseline unit calculations. The risk factors described below are only applicable to the area based habitat calculation. They are not included in the calculation for linear habitats. This is because the risks associated with creating the linear features are considered to be taken into account within the condition multiplier used to calculate the baseline linear units.

2.2.28. The post-development linear units from the hedgerows created are expressed simply as a length in metres.

Length (m) = POST DEVELOPMENT LINEAR UNITS

Applying Risk Factors to the Post-Development Calculation

2.2.29. Post development biodiversity units are calculated in a similar way to baseline biodiversity units. However, in addition to area, condition and distinctiveness of the proposed habitats, the key risks to delivery are taken into account through incorporation of risk factors. The Defra metric sets out three risk factors: distance from scheme (spatial risk); time taken for created or enhanced habitats to reach target condition (temporal risk); and how difficult it is to create or enhance any given habitat (delivery risk).

Spatial Risk

2.2.30. The Spatial Risk is the risk associated with delivering compensation for the loss of a habitat at a distance from that loss. The further from the site of the loss, the greater the risk. Spatial risk has not been included in the preliminary post-development calculation as it is assumed that habitat compensation and retention will be delivered within the Proposed Scheme's footprint or within the same ecological network as the loss occurs.

Table 6 - Defra Spatial Risk Factor

Location of Habitat Creation or Enhancement	Risk Factor
Habitat being created or enhanced is within 500 m of the area of loss or in the same ecological network identified in a local (county or equivalent) biodiversity, green infrastructure or offsetting strategy.	1
Habitat type being created or enhanced contributes to and is in a location identified within a local (county or equivalent) biodiversity, green infrastructure or offsetting strategy.	0.67
Habitat being created or enhanced is not making a contribution to local (county or equivalent) biodiversity, green infrastructure or offsetting strategy.	0.50

Delivery Risk

2.2.31. Delivery Risk is the risk associated with the difficulty to create or restore any specific habitat. Appendix 1 of Defra's Technical Paper (2012) provides an indicative guide to broad categories of risk for different habitats. For habitat types not listed in Defra's guidance, expert opinion was used to determine the appropriate level of delivery risk. This was informed by delivery risk levels assigned to similar habitat types by Defra. Tables 7, 8 and 9 show risk factors assigned to each level of delivery risk and type of habitat on this Proposed scheme.

Table 7 - Defra Delivery Risk Factor

Difficulty of Reinstatement or Restoration	Delivery Risk factor
Very High	0.10
High	0.33
Medium	0.67
Low	1.00

Table 8 - Delivery Risk of Created Habitats

Habitat Type	Difficulty of Recreation	Delivery Risk Factor
A1.1.1 Broadleaved woodland - semi-natural	Medium	0.67
A1.1.2 Broadleaved woodland - plantation	Low	1
A2.1 Scrub - dense/continuous	Low	1
A3.1 Broadleaved Parkland/scattered trees	Low	1
B3.2 Semi-Improved grassland	Low	1

Habitat Type	Difficulty of Recreation	Delivery Risk Factor
B4 Improved grassland	Low	1
B5 Marsh/marshy grassland	Medium	0.67
B6 Poor semi-improved grassland	Low	1
C3.1 Other tall herb and fern - ruderal	Low	1
G1 Standing water	Low	1
J1.1 Cultivated/disturbed land - arable	Low	1
J1.2 Cultivated/disturbed land - amenity grassland	Low	1
J1.4 Introduced shrub	Low	1

Table 9 - Delivery Risk of Enhanced Habitats

Habitat Type	Original Habitat Type	Difficulty of Enhancement	Difficulty Risk Factor
A1.1.1 Broadleaved woodland - semi-natural	A1.1.2 Broadleaved woodland - plantation	Medium	0.67
B3.2 Semi-Improved grassland	B6 Poor semi improved grassland	Low	1
B3.2 Semi-Improved grassland	B4 Improved grassland	Low	1
B5 Marsh/marshy grassland	B6 Poor semi improved grassland	Medium	0.67

Temporal Risk

2.2.32. In delivering compensation for loss of habitats, the timing of impact may not coincide with the new habitat reaching the required quality or level of maturity; which could result in loss of biodiversity for a period of time. This risk to the biodiversity is called the Temporal Risk.

2.2.33. There is no set guidance on the time taken to reach a specific condition for each habitat type. Therefore expert judgement based on experience of similar schemes was used to estimate number of years to target condition for each habitat type. Following Defra's guidance, the time taken to reach the target condition for the habitat is then assigned a risk factor as outlined in Tables 10, 11 and 12.

Table 10 - Defra temporal risk factor

Years to Target Condition	Temporal Risk Factor
0	1
1	0.97
2	0.93
3-5	0.83
6-10	0.71
11-15	0.58
16-20	0.50
21-25	0.41
26-30	0.36
>30	0.33

Table 11 - Temporal Risk for Created Habitats

Habitat Type	Years to Target Condition	Difficulty Risk Factor
A1.1.1 Broadleaved woodland - semi-natural	26-30	0.36
A1.1.2 Broadleaved woodland - plantation	11-15	0.58
A2.1 Scrub - dense/continuous	0-5	0.83
A3.1 Broadleaved Parkland/scattered trees	21-25	0.41
B3.2 Semi-Improved grassland	6-10	0.71
B4 Improved grassland	1	0.97
B5 Marsh/marshy grassland	0-5	0.83
B6 Poor semi-improved grassland	0-5	0.83
C3.1 Other tall herb and fern – ruderal	2	0.93
G1 Standing water	0	1
J1.1 Cultivated/disturbed land – arable	0	1
J1.2 Cultivated/disturbed land - amenity grassland	2	0.93
J1.4 Introduced shrub	1	0.97

Table 12 - Temporal Risk of Enhanced Habitats

Habitat Type	Original Habitat Type	Years to Target Condition	Temporal Risk Factor
A1.1.1 Broadleaved woodland - semi-natural	A1.1.2 Broadleaved woodland - plantation	6-10	0.71
B3.2 Semi-Improved grassland	B6 Poor semi improved grassland	0-5	0.83
B3.2 Semi-Improved grassland	B4 Improved grassland	6-10	0.71
B5 Marsh/marshy grassland	B6 Poor semi improved grassland	0-5	0.83

2.2.34. Table 13 illustrates the temporal risk factors employed for the Proposed Scheme. These differ to those employed by Defra because it is assumed, as a precautionary approach, that all habitats which are lost to the Proposed Scheme will be lost for a period of 7 years. All habitats which are lost to the development of the Gas Pipeline for the Proposed Scheme are assumed to be lost for one year.

2.2.35. As a precautionary approach, the risk factors employed are calculated based on the longest time it could take to create the proposed habitat plus either 7 years or 1 year. For example, to create broadleaved semi-natural woodland (A1.1.1) Defra states that it will take between 26 to 30 years. The worst case scenario would be 30 years therefore for the Proposed Scheme it is assumed that woodland which is lost for 7 years will take 37 years to create and woodland which is lost for 1 year will take 31 years to create and the relevant temporal risk factor (in this case 30 years or above (0.33)) is used.

Table 13 - Temporal Risk for the Drax Repower Project

Habitat Type	Years to target Conditions (+7 Years)	Temporal Risk Factor	Years to target Conditions (+1 Years)	Temporal Risk Factor
A1.1.1 Broadleaved woodland - semi-natural	37	0.33	31	0.33
A1.1.2 Broadleaved woodland - plantation	22	0.41	16	0.5
A2.1 Scrub - dense/continuous	12	0.58	6	0.71
A3.1 Broadleaved Parkland/scattered trees	32	0.33	26	0.36

Habitat Type	Years to target Conditions (+7 Years)	Temporal Risk Factor	Years to target Conditions (+1 Years)	Temporal Risk Factor
B3.2 Semi-Improved grassland	17	0.5	11	0.58
B4 Improved grassland	8	0.71	2	0.93
B5 Marsh/marshy grassland	12	0.58	6	0.71
B6 Poor semi-improved grassland	12	0.58	6	0.71
C3.1 Other tall herb and fern - ruderal	9	0.71	3	0.83
G1 Standing water	7	0.71	1	0.97
J1.1 Cultivated/disturbed land - arable	7	0.71	1	0.97
J1.2 Cultivated/disturbed land - amenity grassland	9	0.71	3	0.83
J1.4 Introduced shrub	8	0.71	2	0.93

Difference between Creation and Enhancement

2.2.36. Habitat creation consists of the removal or the loss of the present habitat in the action of creating the new one or creating habitat where none was previously present (including bare earth). For example, removing scrub in order to create a wetland habitat or removing hardstanding to create grassland

2.2.37. Habitat enhancement consists of improving the condition of an existing habitat and thereby increasing the ecological value of a habitat type through measures that improve its biodiversity capacity and/or by removing factors that detract from its value, such as by increasing the diversity of species that can be supported by a habitat. For example, managing improved grassland so that it becomes semi improved grassland.

2.2.38. The post-development units are calculated to reflect whether the change is as a result of the habitat being enhanced or the existing habitat is being lost and a new one created.

2.2.39. It is important to clearly identify which areas of habitat are being created and which are enhanced.

2.2.40. To calculate losses or gains in biodiversity and linear units, baseline units are subtracted from post-development units. This calculation is based on the assumptions set out in section 2.4.

1.1.1 The scores of each area based habitat present post-development will be calculated utilising the following formula (PD = Post-Development and B = Baseline).

2.2.41. **Creation:** If the habitat is being created and all existing habitat will be lost or if the habitat is being created on bare earth or by removing hard standing, the equation for habitat creation is:

PD Distinctiveness x PD Target Condition x PD Area (ha) x Delivery Risk x Temporal Risk x Spatial Risk = POST-DEVELOPMENT BIODIVERSITY UNITS (creation)

2.2.42. **Enhancement:** For areas of habitat enhancement, the risks to delivery need only be applied to the change resulting from the enhancement. As a result the Post-Development Units (enhancement) are calculated as follows:

(PD Distinctiveness x PD Target Condition x PD Area (ha) - B Biodiversity Units) x Delivery Risk x Temporal Risk x Spatial Risk = POST-DEVELOPMENT BIODIVERSITY UNITS (enhancement)

2.2.43. Please note that one project can include areas of habitat creation and areas of habitat enhancement.

Calculating the Change in Biodiversity Units from the Proposed Scheme

2.2.44. The following formula is used to calculate the change in biodiversity units as a consequence of the Proposed Scheme:

POST-DEVELOPMENT BIODIVERSITY UNITS (creation/enhancement) – PREDEVELOPMENT BIODIVERSITY UNITS = CHANGE IN BIODIVERSITY UNITS

2.2.45. If this resulting score is negative there is a loss in biodiversity for the area based habitats. If the score is close to zero (with the post-development units being within 95%-104% of the baseline units) there is no net loss of biodiversity. If there is an increase in the biodiversity units of 5% or more the project is capable of delivering net gain for biodiversity for the area based habitats. The percentage should be rounded to the nearest whole percentage point.

3 ASSUMPTIONS

3.1 Baseline Biodiversity and Linear Unit Calculations

3.1.1. The following assumptions have been made for the baseline biodiversity unit and linear unit calculations for the Proposed Scheme.

Condition

- In the absence of primary condition data:
  - Low distinctiveness habitats are assumed to be in poor condition.
  - Medium and high distinctiveness habitats are assumed to be in moderate condition.
  - Hedgerows are assumed to be in good condition. The exception to this is defunct hedgerows, which, by nature of being defunct, fail one of the condition assessment criteria; the maximum condition score achievable is therefore moderate.

Distinctiveness

- A1.1.1 Broadleaved semi-natural woodland is assumed to be of high distinctiveness.
- A3.1 Broadleaved parkland/scattered trees is assumed to be of moderate distinctiveness.
- B5 Marshy grassland is assumed to be of low distinctiveness, with the exception of that which is found in Compensation Area O which is assumed to be of high distinctiveness as the area is large enough to be managed to become a habitat of principle importance.
- G1 Standing water is assumed to be of moderate distinctiveness.
- All hedgerows are assumed to be of high distinctiveness because the vast majority of hedgerows will meet the Habitat of Principal Importance criteria. For this reason, distinctiveness is not included as part of the linear unit calculation. This follows the approach set out by Defra.

3.2 Phase 1 Habitat Data

- Where no Phase 1 habitat data exists (Compensation Area P only) it is assumed that the baseline habitat is a habitat of low distinctiveness and poor condition for example improved grassland (B4).

Post-Development Biodiversity and Linear Unit Calculations

3.2.1. The following assumptions have been made for the post-development biodiversity unit and linear unit post-development calculations for the Proposed Scheme.

Target Condition

- It is assumed that low distinctiveness habitats will reach poor condition.
- It is assumed that medium and high distinctiveness habitats will reach moderate condition.

Temporary Habitat Loss

- It is assumed that all habitats which are lost temporarily to the Proposed Scheme will be lost for a period of 7 years. This assumption employs a precautionary approach and is based on the worst case scenario for habitat loss.

- The exception to the above assumption is the Gas Pipeline. It is assumed that all habitats which are lost temporarily due to the construction of the Gas Pipeline for the Proposed Scheme will be lost for a period of 1 year.
- It is assumed that all area-based habitats which are lost temporarily will be replaced like-for-like with the same habitat type of the same condition.
- The worst case scenario assumes that all hedgerows even within the pipeline area will be lost temporarily. However, as trenchless techniques will be used to install the pipeline it is likely that hedgerows within the Pipeline Area will not be lost.
- It is assumed that all hedgerows which are lost temporarily will be replaced with native species-rich intact hedgerows (J2.1.1) which have a higher biodiversity value than species-poor hedgerows.

Compensation Areas

- It is assumed that Compensation Areas A, B, O and P are the only Compensation Areas where habitats will not be lost to the Proposed Scheme and are therefore the only Compensation Areas where habitat enhancement is possible.

Spatial Risk Factor

- It is assumed that habitat compensation, enhancement or retention will be delivered within the Proposed Scheme's footprint or within the same ecological network as the loss occurs. Therefore, the spatial risk factor is not included within the preliminary post-development biodiversity unit calculations.

3.3 Limitations

3.3.1. The biodiversity unit calculations do not account for indirect impacts to habitats outside of the Proposed Scheme footprint. If there are additional impacts resulting from compound sites or access routes used during development these will need to be addressed at a later stage.

3.3.2. As detailed ecological and landscape drawings were not available when this assessment was produced, areas of proposed habitat creation are based on preliminary proposals and interviews with those playing a key role in the development of the landscape and biodiversity mitigation strategy for the Proposed Scheme. After the submission of the DCO application these professional area estimates will be revised once more detailed information becomes available.

4 RESULTS OF BASELINE BIODIVERSITY AND LINEAR UNIT CALCULATIONS

4.1 Project Impacts

Permanent Impacts

Table 14 - Baseline biodiversity units (BU) (Permanent Impacts)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
A2.1 Scrub – Dense/continuous	Medium (4)	Moderate (2)	0.28	2.2
A3.1 Broadleaved parkland/scattered trees	Medium (4)	Moderate (2)	2.26	18.1
B5 Marshy grassland	Low (2)	Poor (1)	0.31	0.6
B6 Poor semi improved grassland	Low (2)	Poor (1)	2.17	4.3
C3.1 Other tall herb and fern – ruderal	Low (2)	Poor (1)	0.3	0.6
G1. Standing Water	Medium (4)	Moderate (2)	0.25	2.0
J1.2 Cultivated/disturbed land – Amenity Grassland	Low (2)	Poor (1)	3.57	7.1
J1.4 Cultivated/disturbed land – Introduced Shrub	Low (2)	Poor (1)	0.23	0.5
J4 - Bare ground	Low (2)	N/A	0.26	n/a
Total			**9.63**	**35.4**

Table 15 - Baseline linear units (LU) (Permanent Impacts)

JNCC Habitat Type	Condition Score	Length of Habitat (m)	LU
G2 Running water	N/A	215.51	n/a

JNCC Habitat Type	Condition Score	Length of Habitat (m)	LU
J2.1.2 Intact hedge - species-poor	Good (3)	315.62	946.9
J2.2.2 Defunct hedge - species-poor	Moderate (2)	110.37	220.7
Total		**641.5**	**1167.6**

Temporary Impacts

Table 16 - Baseline biodiversity units (BU) (Temporary Impacts) – Stage 2

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
A1.1.1 Broadleaved woodland – semi natural	High (6)	Moderate (2)	0.25	3.0
A1.1.2 Broadleaved woodland - plantation	Medium (4)	Moderate (2)	0.07	0.6
A2.1 Scrub – Dense/continuous	Medium (4)	Moderate (2)	0.1	0.8
A3.1 Broadleaved parkland/scattered trees	Medium (4)	Moderate (2)	0.37	3.0
B4 Improved grassland	Low (2)	Poor (1)	1.46	2.9
B5 Marshy grassland	Low (2)	Poor (1)	1.42	2.8
B6 Poor semi improved grassland	Low (2)	Poor (1)	1.19	2.4
C3.1 Other tall herb and fern - ruderal	Low (2)	Poor (1)	0.23	0.5
J1.1 Cultivated/disturbed land – Arable	Low (2)	Poor (1)	8.7	17.4
J1.2 Cultivated/disturbed land – Amenity Grassland	Low (2)	Poor (1)	0.47	0.9

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
J1.4 Cultivated/disturbed land – Introduced Shrub	Low (2)	Poor (1)	0.26	0.5
J4 - Bare ground	Low (2)	N/A	0.07	N/A
Total			**14.59**	**34.8**

Table 17 - Baseline linear units (LU) (Temporary Impacts) – Stage 2

JNCC Habitat Type	Condition Score	Length of Habitat (m)	LU
J2.1.1 Intact hedge - species-rich	Good (3)	52.69	158.1
J2.1.2 Intact hedge - species-poor	Good (3)	226.25	678.8
J2.2.2 Defunct hedge - species-poor	Moderate (2)	581.56	1163.1
J2.6 Dry ditch	N/A	708.96	N/A
Total		**1569.46**	**2000.0**

4.2 Pipeline

Table 18 - Baseline biodiversity units (BU) (Pipeline – Permanent Impacts)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
A3.1 Broadleaved parkland/scattered trees	Medium (4)	Moderate (2)	0.01	0.1
J1.1 Cultivated/disturbed land – arable	Low (2)	Poor (1)	4.25	8.5

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
Total			**4.26**	**8.6**

Table 19 - Baseline biodiversity units (BU) (Temporary Impacts)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
A1.1.2 Broadleaved woodland - plantation	Medium (4)	Moderate (2)	0.09	0.7
A3.1 Broadleaved Parkland/scattered trees	Medium (4)	Moderate (2)	0.1	0.8
B4 Improved grassland	Low (2)	Poor (1)	0.08	0.2
C3.1 Other tall herb and fern - ruderal	Low (2)	Poor (1)	0.07	0.1
G1 Standing water	Medium (4)	Moderate (2)	0.02	0.2
J1.1 Cultivated/disturbed land - arable	Low (2)	Poor (1)	25.31	50.6
Total			**25.67**	**52.6**

Table 20 - Baseline linear units (LU) (Temporary Impacts)

JNCC Habitat Type	Condition Score	Length of Habitat (m)	LU
J2.2.2 Defunct hedge - species-poor	Moderate (2)	190.19	158.1
J2.6 Dry ditch	N/A	260.9	678.8
Total		**451.09**	**380.4**

Table 21 - Summary of Baseline Units Lost

Unit Type	Permanent Loss	Temporary Loss	Pipeline Permanent Loss	Pipeline Temporary Loss	Total Permanent Loss	Total Temporary Loss	Total Unit Loss
BU	35.4	34.8	8.6	52.6	**44.0**	**87.4**	**131.4**
LU	1167.6	2000.0	N/A	380.4	**1167.6**	**2380.4**	**3548.0**

5 HABITAT REINSTATEMENT

5.1.1. Table 22 shows the area and BU of the habitats which will be reinstated after construction of the Proposed Scheme is complete. This information has been calculated by subtracting sum of the area of each habitat types which is found within Compensation Areas C, D, E, F, G, H, and I from the total area of each habitat lost in Table 16 to ensure there is no double counting of habitats.

Table 22 - Post-Development Biodiversity Units (BU) of Reinstated Habitats (excluding pipeline)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
A1.1.1 Broadleaved woodland - semi natural	High	Moderate	Medium	37	0.25	0.7
A1.1.2 Broadleaved woodland - plantation	Medium	Moderate	Low	22	0.01	0.0
A2.1 Scrub - dense/continuous	Medium	Moderate	Low	12	0.03	0.1
A3.1 Broadleaved parkland/ scattered trees	Medium	Moderate	Low	32	0.15	0.4
B4 Improved grassland	Low	Poor	Low	8	0.08	0.1
B5 Marshy Grassland	Low	Poor	Medium	12	1.42	1.1
B6 Poor semi improved grassland	Low	Poor	Low	12	0.35	0.4
C3.1 Other tall herb and fern - ruderal	Low	Poor	Low	9	0.08	0.1
J1.1Cultivated/disturbed land - arable	Low	Poor	Low	7	8.1	11.5
J1.2 Cultivated/disturbed land - amenity grassland	Low	Poor	Low	9	0	0.0

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
J1.4 Cultivated/disturbed land - Introduced Shrub	Low	Poor	Low	8	0.13	0.2
J4 Bare Ground	Low	N/A	Low	N/A	0.07	N/A
Total					**10.67**	**14.6**

5.1.2. 860.5m/LU of intact native species-rich hedge (J2.1.1) will be created to compensate for the loss of LU in the baseline.

5.1.3. Table 23 shows the area and BU of the habitats which will be reinstated after construction of the Gas Pipeline is complete. This information has been calculated by subtracting sum of the area of each habitat types which is found within Compensation Areas J, K, L, M and N from the total area of each habitat lost in Table 19 to ensure there is no double counting of habitats.

Table 23 - Post-Development Biodiversity Units (BU) of Reinstated Habitats within the Pipeline Area

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+1 Years)	Area of Habitat	BU Created
A1.1.2 Broadleaved woodland - plantation	Medium	Moderate	Low	16	0.09	0.4
A3.1 Broadleaved parkland/ scattered trees	Medium	Moderate	Low	26	0.1	0.3
B4 Improved grassland	Low	Poor	Low	2	0.08	0.1
C3.1 Other tall herb and fern - ruderal	Low	Poor	Low	3	0.07	0.1
G1 Standing Water	Medium	Moderate	Low	1	0.02	0.2
J1.1Cultivated/disturbed land - arable	Low	Poor	Low	1	24.49	47.5

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+1 Years)	Area of Habitat	BU Created
Total					**24.85**	**48.6**

5.1.4. 190.2m/LU of intact native species-rich hedge (J2.1.1) will be created to compensate for the loss of LU in the baseline.

6 COMPENSATION AREAS

Compensation Area A

Table 24 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
A2.2 Scattered scrub	Medium (4)	Moderate (2)	0.25	2.0
B3.2 Semi improved grassland	Medium (4)	Moderate (2)	0.25	2.0
B6 Poor semi improved grassland	Low (2)	Poor (1)	4.46	8.9
Total			**4.96**	**12.9**

6.1.1. Compensation Area A will be retained, therefore the enhancement formula has been applied as the habitat of poor semi improved grassland (B6) will be enhanced to semi-improved grassland (B3.2) as opposed to being created from scratch.

Table 25 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk	Area of Habitat (ha)	Net BU Created
A1.1.1 Broadleaved woodland – Semi natural	High	Moderate	Medium	26-30	1.63	4.7
A2.1 Scrub - dense/continuous	Medium	Moderate	Low	0-5	0.99	6.6
B3.2 Semi improved grassland (enhancement from B6)	Medium	Moderate	Low	0-5	2.08	5.6
G1 Standing water	Medium	Moderate	Low	0	0.25	2.0
Total					**4.95**	**18.9**

Compensation Area B

6.1.2. Compensation Area B will be retained, therefore the enhancement formula has been applied as the habitat will be enhanced as opposed to being created from scratch.

Table 26 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
A1.1.2 Broadleaved plantation woodland	Medium (4)	Moderate (2)	0.21	1.7
Total			**0.21**	**1.7**

Table 27 - Post Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk	Area of Habitat (ha)	Net BU Created
A1.1.1 Broadleaved woodland – semi-natural	High	Moderate	Low	0.71	0.21	0.6
Total					**0.21**	**0.6**

Compensation Area C

Table 28 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
A1.1.2 Broadleaved woodland - plantation	Medium (4)	Moderate (2)	0.06	0.5
A2.1Scrub - dense/continuous	Medium (4)	Moderate (2)	0.07	0.6
B4 Improved grassland	Low (2)	Poor (1)	1.38	2.8
B6 Poor semi-improved grassland	Low (2)	Poor (1)	0.64	1.3
J1.2 Cultivated/disturbed land - amenity grassland	Low (2)	Poor (1)	0.01	0.0
Total			**2.16**	**5.2**

Table 29 - Baseline Linear Units

JNCC Habitat Type	Condition Score	Length of Habitat (M)	LU
J2.1.2 Intact hedge - species-poor	Good (3)	180.48	541.4
Total		**180.48**	**541.4**

Table 30 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
A1.1.2 Broadleaved woodland - plantation	Medium	Moderate	Low	0.41	0.06	0.2
A2.1 Scrub - dense/continuous	Medium	Moderate	Low	0.58	0.07	0.3
B3.2 Semi improved grassland	Medium	Moderate	Low	0.5	2.04	8.2
Total					**2.17**	**8.7**

6.1.3. 180.5m/LU of intact native species-rich hedge (J2.1.1) will be created to compensate for the loss of LU in the baseline

Compensation Area D

Table 31 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
A3.1 Broadleaved Parkland/scattered trees	Medium (4)	Moderate (2)	0.17	1.4
B6 Poor semi-improved grassland	Low (2)	Poor (1)	0.20	0.4
C3.1 Other tall herb and fern - ruderal	Low (2)	Poor (1)	0.15	0.3
J1.2 Cultivated/disturbed land - amenity grassland	Low (2)	Poor (1)	0.32	0.6

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
J1.4 Cultivated/disturbed land Introduced shrub	Low (2)	Poor (1)	0.13	0.3
Total			**0.97**	**3.0**

Table 32 - Baseline Linear Units

JNCC Habitat Type	Condition Score	Length of Habitat (M)	LU
J2.2.2 Defunct hedge - species-poor	Moderate (2)	149.05	298.1
Total		**149.05**	**298.1**

Table 33 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
A2.1 Scrub - dense/continuous	Medium	Moderate	Low	12	0.39	1.8
A3.1 Broadleaved parkland/ scattered trees	Medium	Moderate	Low	32	0.39	1.0
B3.2 Semi improved grassland	Medium	Moderate	Low	17	0.78	3.1
Total					**1.59**	**6.0**

6.1.4. 149.1m/LU of intact native species-rich hedge (J2.1.1) will be created to compensate for the loss of LU in the baseline

Compensation Area E

Table 34 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
A3.1 Broadleaved Parkland/scattered trees	Medium (4)	Moderate (2)	0.05	0.4

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
Total			**0.05**	**0.4**

Table 35 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
A3.1 Broadleaved Parkland/scattered trees	Medium	Moderate	Low	32	0.05	0.1
Total					**0.05**	**0.1**

Compensation Area F

Table 36 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
B5 Marshy Grassland	Low (2)	Poor (1)	1.54	3.1
Total			**1.54**	**3.1**

Table 37 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
B5 Marshy Grassland	Low (2)	Poor (1)	Medium	12	1.54	1.2
Total					**1.54**	**1.2**

Compensation Area G

Table 38 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
J1.2 Cultivated/disturbed land – amenity grassland	Low (2)	Poor (1)	0.07	0.1
Total			**0.07**	**0.1**

Table 39 - Baseline Linear Units (LU)

JNCC Habitat Type	Condition Score	Length of Habitat (M)	LU
J2.2.2 Defunct hedge - species-poor	Moderate (2)	44.55	133.7
Total		**44.55**	**133.7**

Table 40 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
A3.1 Broadleaved parkland/scattered trees-	Medium	Moderate	Low	32	0.07	0.2
	Total				**0.07**	**0.2**

6.1.5. 44.6m/LU of intact native species-rich hedge (J2.1.1) will be created to compensate for the loss of LU in the baseline.

Compensation Area H

Table 41 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
J1.1Cultivated/disturbed land - arable	Low (2)	Poor (1)	0.38	0.7
Total			**0.38**	**0.7**

Table 42 - Baseline Linear Units (LU)

JNCC Habitat Type	Condition Score	Length of Habitat (m)	LU
J2.2.2 Defunct hedge - species-poor	Moderate (2)	380.92	761.8
J2.6 Dry ditch	N/A	569.80	N/A
Total		**569.80**	**761.8**

Table 43 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
J1.1Cultivated/disturbed land - arable	Medium	Moderate	Low	7	0.38	2.2
Total					**0.38**	**2.2**

6.1.6. 380.9m/LU of intact native species-rich hedge (J2.1.1) will be created to compensate for the loss of LU in the baseline.

Compensation Area I

Table 44 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
J1.1Cultivated/disturbed land - arable	Low (2)	Poor (1)	0.24	0.5
Total			**0.24**	**0.5**

Table 45 - Baseline Linear Units (LU)

JNCC Habitat Type	Condition Score	Length of Habitat (m)	LU
J2.1.1 Intact hedge - native species-rich	Good (3)	82.82	248.5
Total		**82.82**	**248.5**

Table 46 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
J1.1Cultivated/disturbed land - arable	Medium	Moderate	Low	7	0.24	1.4
Total					**0.24**	**1.4**

6.1.7. 82.8m/LU of intact native species-rich hedge (J2.1.1) will be created to compensate for the loss of LU in the baseline.

Compensation Area J

Table 47 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
J1.1Cultivated/disturbed land - arable	Low (2)	Poor (1)	0.05	0.1
Total			**0.05**	**0.1**

Table 48 - Baseline Linear Units (LU)

JNCC Habitat Type	Condition Score	Length of Habitat (m)	LU
J2.2.2 Defunct hedge - species-poor	Moderate (2)	70.52	141.0
Total		**70.52**	**141.0**

Table 49 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
A3.1 Broadleaved parkland/scattered trees	Medium	Moderate	Low	26	0.05	0.1
Total					**0.05**	**0.1**

6.1.8. 70.5m/LU of intact native species-rich hedge (J2.1.1) will be created to compensate for the loss of LU in the baseline.

Compensation Area K

Table 50 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
J1.1 Cultivated/disturbed land – arable	Low (2)	Poor (1)	0.06	0.1
Total			**0.069**	**0.1**

Table 51 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
A3.1 Broadleaved parkland/scattered trees	Medium	Moderate	Low	26	0.07	0.2
Total					**0.07**	**0.2**

Compensation Area L

Table 52 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
J1.1 Cultivated/disturbed land – arable	Low (2)	Poor (1)	0.17	0.3
Total			**0.17**	**0.3**

Table 53 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
A2.1 Scrub – dense/continuous	Medium	Moderate	Low	6	0.17	1.0
Total					**0.17**	**1.0**

Compensation Area M

Table 54 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
J1.1 Cultivated/disturbed land – arable	Low (2)	Poor (1)	0.30	0.6
Total			**0.30**	**0.6**

Table 55 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
A2.1 Scrub – dense/continuous	Medium	Moderate	Low	6	0.30	1.7
Total					**0.30**	**1.7**

Compensation Area N

Table 56 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
J1.1 Cultivated/disturbed land – arable	Low (2)	Poor (1)	0.24	0.5
Total			**0.24**	**0.5**

Table 57 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	BU Created
A2.1 Scrub – dense/continuous	Medium	Moderate	Low	6	0.24	1.4
Total					**0.24**	**1.4**

Compensation Area O

Table 58 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
A2.2 Scattered Scrub	Low (2)	Poor (1)	3.31	26.5
B6 Poor semi improved grassland	Low (2)	Poor (1)	2.27	4.5
C3.1 Other tall herb and fern - ruderal	Low (2)	Poor (1)	1.89	3.8
F1 Swamp	High (6)	Moderate (2)	0.76	9.1
G1. Standing Water	Medium (4)	Moderate (2)	0.95	7.6
J1.3 Cultivated/disturbed land – Ephemeral short perennial	Low (2)	Poor (1)	0.09	0.2
J4 - Bare ground	Low (2)	N/A	0.19	N/A
Total			**9.46**	**51.7**

6.1.9. Compensation Area O will be retained, therefore the enhancement formula has been applied as the habitat of poor semi improved grassland (B6) will be enhanced to marshy grassland (B5) as opposed to being created from scratch.

Table 59 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	Net BU Created
A1.1.1 Broadleaved woodland – semi natural	High	Moderate	Medium	26 to 30	3.31	9.6
B5 Marshy Grassland – (enhanced from B6)	High	Moderate	Medium	0 to 5	2.27	12.6
B5 Marshy Grassland	High	Moderate	Medium	0 to 5	2.17	14.5
F1 Swamp (retained)	Medium	Moderate	N/A	N/A	0.76	N/A units retained

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	Net BU Created
G1 Standing water (retained)	Medium	Moderate	N/A	N/A	0.95	N/A units retained
Total					**9.46**	**36.7**

Compensation Area P

Table 60 - Baseline Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Condition Score	Area of Habitat (ha)	BU
B4 Improved grassland	Low (2)	Poor (1)	0.78	1.6
Total			**0.78**	**1.6**

6.1.10. Compensation Area O will be retained, therefore the enhancement formula has been applied as the habitat of improved grassland (B4) will be enhanced to semi-improved grassland (B3.2) as opposed to being created from scratch.

Table 61 - Post-Development Biodiversity Units (BU)

JNCC Habitat Type	Distinctiveness Score	Target Condition	Difficulty Risk	Temporal Risk (+7 Years)	Area of Habitat	Net BU Created
B3.2 Semi improved grassland (enhancement)	Medium	Moderate	Low	6 -10	0.70	3.3
G1 Standing water	Medium	Moderate	Low	0	0.08	0.6
Total					**0.78**	**3.9**

Summary of Total Post-Development BU and LU

Table 62 - Summary of Total Post-Development Biodiversity Units (BU) and Linear Units (LU)

Unit Type	Reinstated	Reinstated (Pipeline)	Compensation Areas	Total
BU	14.6	48.6	82.3	**145.5**

Unit Type	Reinstated	Reinstated (Pipeline)	Compensation Areas	Total
LU	860.5	190.2	908.4	**1959.1**

7 CONCLUSION AND NEXT STEPS

7.1 Conclusion

7.1.1. Tables 63 to 65 summarise the findings of the BNG assessment.

Table 63 - Summary of Baseline Units Lost

Unit Type	Permanent Loss	Temporary Loss	Pipeline Permanent Loss	Pipeline Temporary Loss	Total Permanent Loss	Total Temporary Loss	Total Unit Loss
BU	35.5	34.8	8.6	52.6	**44.1**	**87.4**	**131.5**
LU	1167.6	1999.9	N/A	380.4	**1167.6**	**2380.3**	**3547.9**

Table 64 - Summary of Total Post-Development Biodiversity Units (BU) and Linear Units (LU)

Unit Type	Reinstated	Reinstated (Pipeline)	Compensation Areas	Total
BU	14.6	48.6	82.3	**145.5**
LU	860.5	190.2	908.4	**1959.1**

Table 65 - Summary of Total Post-Development Biodiversity Units (BU) and Linear Units (LU)

Unit Type	Total Baseline Unit Lost (A)	Total Units Post-Development (B)	Compensation Areas	Total
BU	14.6	48.6	82.3	**145.5**
LU	860.5	190.2	908.4	**1959.1**

7.1.2. Table 65 demonstrates that the Proposed Scheme under the worst case scenario achieves a net gain for biodiversity for area based habitats and a net loss for biodiversity for linear habitats. Please note that although the Proposed Scheme achieves a net gain for area based habitats, it cannot claim biodiversity net gain for the Proposed Scheme as a whole until sufficient compensation is put in place to achieve a net gain for linear habitats.

7.1.3. It is important to recognise that the quantification of biodiversity units is one of a number of factors to be considered when assessing the impact of each stage on biodiversity. The decision should be informed by a full biodiversity assessment which includes other factors associated with the biodiversity lost to the Proposed Scheme.

7.2 Recommended Next Steps

7.2.1. The recommended next steps are as follows:

- Undertake a detailed post-development calculation once the ecological and landscape mitigation plans are finalised. This updated assessment will not be based on the worst case scenario and will be able to determine exactly what habitat types and area of habitat will be recreated on site and whether additional offsite compensation will be required to meet net gain or no net loss.
- Arrange for Phase 1 habitat surveys and condition assessments of Compensation Areas A, B, O and P to be undertaken by ecologists to ensure that habitat data is up to date.
- Seek to deliver net gain for biodiversity of linear habitats by restoring these within the footprint of the Proposed Scheme where possible. If this is not possible create or enhance habitats offsite as compensation for the impact of the development.

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APPENDIX 1: CIEEM, CIRA AND IEMA UK BIODIVERSITY GOOD PRACTICE PRINCIPLES

Biodiversity Net Gain

Good practice principles for development

Biodiversity Net Gain is development that leaves biodiversity in a better state than before. It is also an approach where developers work with local governments, wildlife groups, land owners and other stakeholders in order to support their priorities for nature conservation. These ten principles set out good practice for achieving Biodiversity Net Gain and must be applied all together, as one approach.

Principle 1. Apply the Mitigation Hierarchy

Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.

Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere

Avoid impacts on irreplaceable biodiversity - these impacts cannot be offset to achieve No Net Loss or Net Gain.

Principle 3. Be inclusive and equitable

Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to Net Gain. Achieve Net Gain in partnership with stakeholders where possible, and share the benefits fairly among stakeholders.

Principle 4. Address risks

Mitigate difficulty, uncertainty and other risks to achieving Net Gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.

Principle 5. Make a measurable Net Gain contribution

Achieve a measurable, overall gain[1] for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.

1 Net Gain has been described as a measurable target for development projects where impacts on biodiversity are outweighed by a clear mitigation hierarchy approach to first avoid and then minimise impacts, including through restoration and / or compensation. Adhering to these Net Gain principles (i.e. pursuing all principles together) will help in under-pinning good practice for achieving and sustaining Net Gain.

Biodiversity Net Gain

Good practice principles for development

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APPENDIX 2: BIODIVERSITY NET GAIN PROCESS

Step 1 – Set the Scope

i. **Produce a Biodiversity Net Gain (BNG) strategy.** A short memo report setting out client commitments to BNG, scope of the BNG work, and the proposed steps required.

ii. **Workshop 1 or 1-2-1 meetings – strategy meetings.** Early engagement with key stakeholders, likely to include local conservation NGOs, local authorities and government agencies such as Natural England. Early engagement is essential to present, discuss and develop the BNG strategy; including setting the BNG good practice principles into a scheme context and agreeing local priorities for biodiversity.

Step 2 – Initial Biodiversity Assessment

i. **Survey baseline habitats and their condition.** Ideally, a habitat condition assessment is undertaken during Phase 1 Habitat survey. If Phase 1 Habitat data has been collected prior to initiating the BNG process, condition assessment can be undertaken either a) retrospectively through interpretation of Phase 1 target notes, consultation with surveyors, or employing a number of assumptions; or b) during an additional site visit.

ii. **Identify irreplaceable habitat.** Following Defra guidance, irreplaceable habitats within the scheme boundary must be identified and excluded from the biodiversity unit calculations. It is important to note that biodiversity net gain or no net loss cannot be achieved for the scheme as a whole if there is a negative impact on an irreplaceable habitat

iii. **Calculate baseline biodiversity units using the biodiversity metric.** This calculation includes all habitats (minus irreplaceable habitats) within the scheme boundary prior to development, and is informed by Phase 1 Habitat data and results of the condition assessment. The baseline biodiversity unit calculation may be run on a number of scheme options if the scheme is at options appraisal stage.

iv. **Calculate post-development biodiversity units using the biodiversity metric.** This calculation accounts for all of the proposed habitats (including retained habitat and habitat lost or created as a result of the development) within the scheme boundary post-development. The calculation is informed by scheme design, landscape plans, and proposed ecological mitigation. The assessment is based upon the target state (type, size and condition) of habitats being created.

v. **Produce an 'Initial Biodiversity Assessment' report.** The report sets out the BNG process in the context of the scheme, and includes the method and results of initial baseline and post-development biodiversity unit calculations.

Step 3 – Detailed Scheme Assessment

i. **Inform options appraisal.** If baseline biodiversity units have been calculated for a number of scheme options, results will be used to inform options appraisal.

ii. **Inform the mitigation proposals.** Results of biodiversity unit calculations performed under Step 2 are used to inform the extent and habitat type of on-site ecological mitigation and compensation land required for the scheme to meet no net loss or net gain targets.

iii. **Update biodiversity unit calculations.** Following finalisation of the scheme design and ecological mitigation proposals, the biodiversity units are updated to reflect any changes. Calculations may also be re-run if updated Phase 1 Habitat data becomes available.

iv. **Estimate the biodiversity compensation required.** The difference between baseline and post-development biodiversity units indicates the number of units required for the scheme to deliver no net loss or net gain for biodiversity. This in turn can be used to identify the extent and habitat type of compensation required. A rough cost estimate for potential compensation can be provided at this stage.

v. **Workshop 2 – compensation/offset workshop.** Work with stakeholders to gather suggestions to identify candidate compensation sites and providers. These sites could be offset sites, which are compensation sites that are situated outside the project boundary. This workshop also provides an opportunity to update stakeholders on BNG progress.

Step 4 – Assessment of Candidate Offset Sites

i. **Initial assessment of feasibility.** Any candidate offset sites which are considered not feasible for any reason are scoped out at this stage.

ii. **Survey candidate offset sites** to identify existing habitat type, extent and condition.

iii. **Calculate potential biodiversity units** deliverable by each candidate offset. Using the same methods employed for calculating baseline and post-development biodiversity units for the scheme as a whole, calculate baseline and post-development biodiversity units for offset sites to determine potential biodiversity units deliverable.

iv. **Hold one-to-one meetings with potential offset providers to:**

   a) Identify suitable locations for candidate offset sites and determine what habitats and species they could support.

   b) Determine how offsets can contribute to local biodiversity objectives and fit within ecological networks.

   c) Set out the type of agreement that would be acceptable to offset providers (e.g. long term agreement for management of the land).

   d) Collate information to feed in to offset scoring templates and offset summary sheets.

v. **Score candidate offsets** using the offset scoring template. This takes into account ecological factors, financial factors, and wider benefits and opportunities.

vi. **Produce offset summary sheets** describing each offset site in its present state and the habitats and species the proposed offsets will support. Details of land ownership, access provisions and proposed management agreements are also included in summary sheets.

vii. **Panel review of potential offset sites** to include relevant stakeholders. Decisions are made as to which candidate offset sites to take forward.

Step 5 – Completion of Biodiversity Assessment

i. **Final update of biodiversity unit calculations.** If there have been changes to the scheme design (including environmental mitigation proposals) since calculations were last updated, biodiversity units are updated to reflect any changes.

ii. **Workshop 3 – final workshop.** A third stakeholder engagement workshop is recommended to update all stakeholders on BNG progress since the last workshop, and inform them of any decisions made.

iii. **Produce a 'Full Biodiversity Assessment' report and associated GIS data.** This will detail the approach and outcomes of Steps 1 to 4, importantly, how the project has met the BNG good practice principles. It will set out candidate offset sites and enable the client to decide which offsets to support and whether to aim for no net loss or net gain.

Step 6 – Delivering Biodiversity Net Gain

i. **Implement BNG during the construction phase.** This will involve: updating the biodiversity baseline; including BNG within construction documents; training key staff; reducing the time-lag between losses and gains; acting on risks and opportunities; and collecting evidence and data.

ii. **Set up offsets.** Once offset sites to be delivered have been selected, and fine details of the scope of each offset agreed, legal agreements will be set up with offset providers to manage offsets over a set time frame (generally between 15 and 30 years). Further information on the agreement types can be provided on request.

iii. **Monitor and report** to ensure the offsets are delivered to the standard required. Monitoring and reporting is undertaken at key points throughout the management agreement (e.g. once every two or three years).

APPENDIX 3: COMPENSATION AREAS AND TEMPORARY AND PERMANENT LANDTAKE

N

Compensation Area O

Compensation Area A

Compensation Area B

Compensation Area C

Compensation Area D

Development Parcel C

Development Parcel B

Pond
Track
L Twr
Conveyor
Drain
Def
Path
Ward Bdy
FB
Tanks
Par
Path (um)
TCBs
WBs

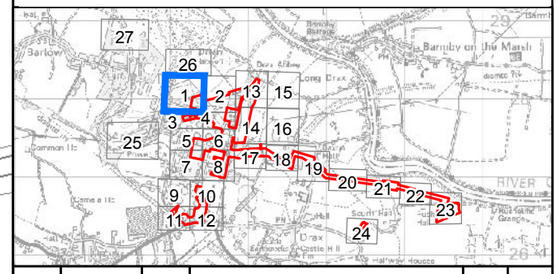
0 12.5 25 50 75 100 m

Key
- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

Landtake
- Permanent
- Temporary

Phase 1 Habitats
- Bare ground
- Introduced shrub
- Buildings
- Scrub - dense/continuous
- Broadleaved woodland - plantation
- Cultivated/disturbed land - amenity grassland
- Improved grassland
- Hard standing
- Broadleaved Parkland/scattered trees
- Semi-improved grassland
- Fence
- Intact hedge - species-poor

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



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N

Compensation Area O

Compensation Area B

Compensation Area C

Development Parcel B

Development Parcel C

Development Parcel E

Development Parcel A

Compensation Area H

Compensation Area D

Carr D... (Drain)

Path (um)

Drain

FB

Pond

Tanks

0 12.5 25 50 75 100 m

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Introduced shrub
- Buildings
- Standing water
- Scrub - dense/continuous
- Broadleaved woodland - plantation
- Cultivated/disturbed land - amenity grassland
- Improved grassland
- Hard standing
- Cultivated/disturbed land - arable
- Mixed woodland - plantation
- Broadleaved Parkland/scattered trees
- Semi-improved grassland
- Defunct hedge - species-poor
- Dry ditch
- Fence
- Intact hedge - species-poor
- Running water

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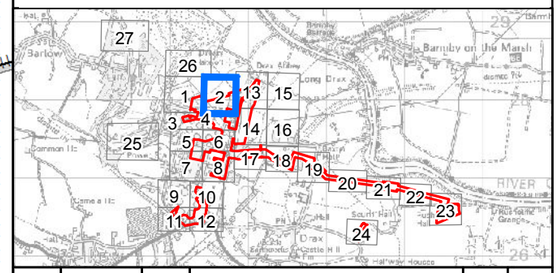

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TITLE: Compensation Areas - Sheet 2 of 27

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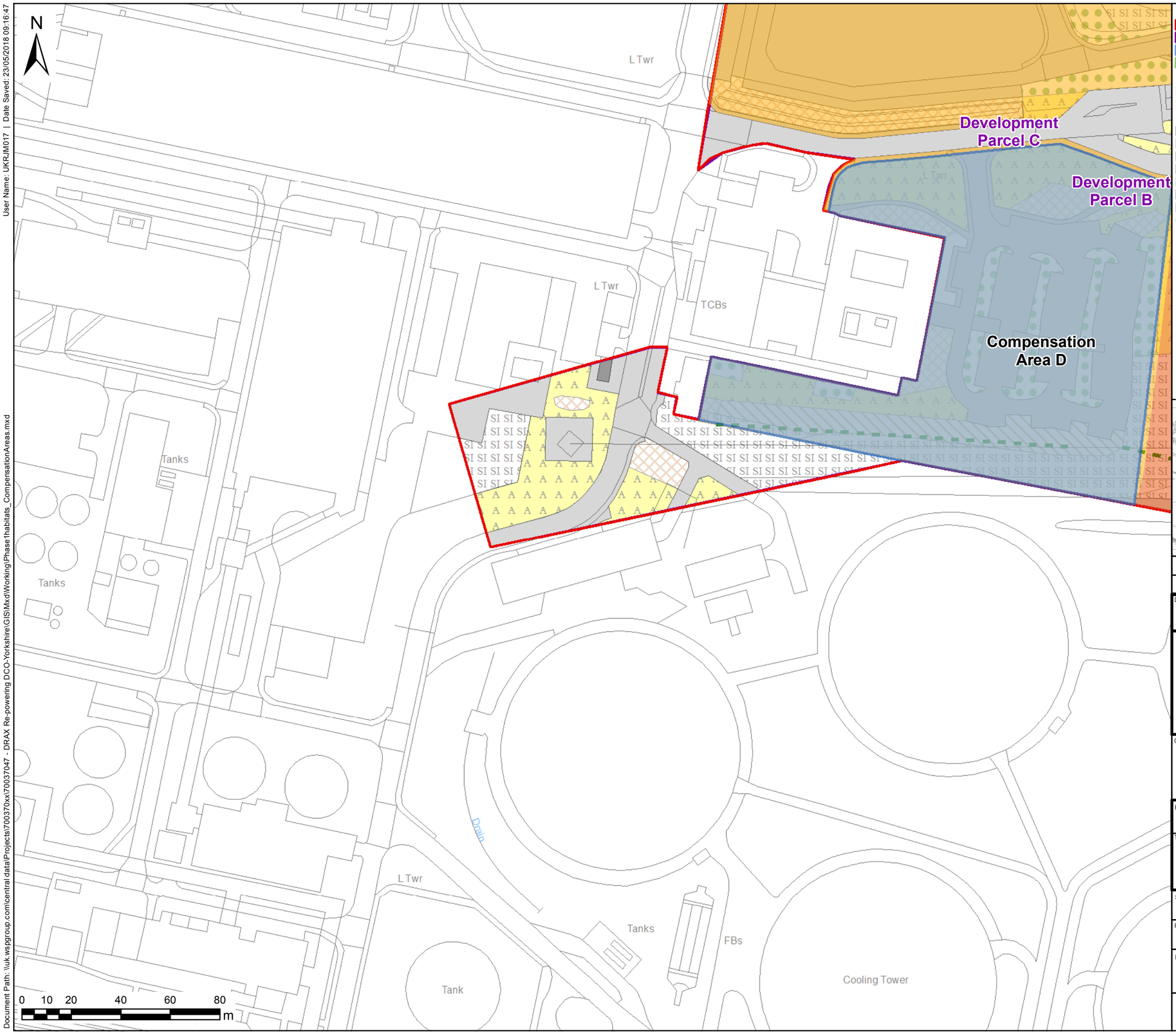

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Introduced shrub
- Buildings
- Other tall herb and fern - ruderal
- Cultivated/disturbed land - amenity grassland
- Hard standing
- Broadleaved Parkland/scattered trees
- Semi-improved grassland
- Defunct hedge - species-poor

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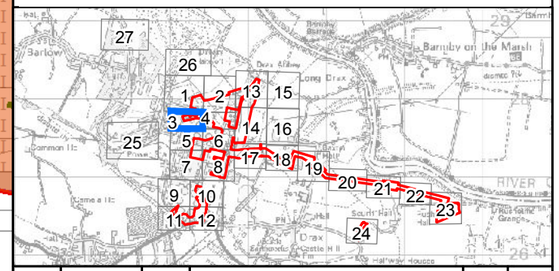

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N

Compensation Area C

Development Parcel B

Compensation Area D

Development Parcel C

Development Parcel E

Development Parcel F

Development Parcel D

Compensation Area E

Compensation Area H

Development Parcel A

WBs

Twr

Pond

Tanks

FB

Tank

Sluice

Sludge Lagoons

Slurry Bed

Cooling Tower

0 10 20 40 60 80 m

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Bare ground
- Introduced shrub
- Buildings
- Other tall herb and fern - ruderal
- Standing water
- Scrub - dense/continuous
- Broadleaved woodland - plantation
- Cultivated/disturbed land - amenity grassland
- Improved grassland
- Hard standing
- Cultivated/disturbed land - arable
- Mixed woodland - plantation
- Broadleaved Parkland/scattered trees
- Semi-improved grassland
- Defunct hedge - species-poor
- Dry ditch
- Fence
- Intact hedge - species-poor

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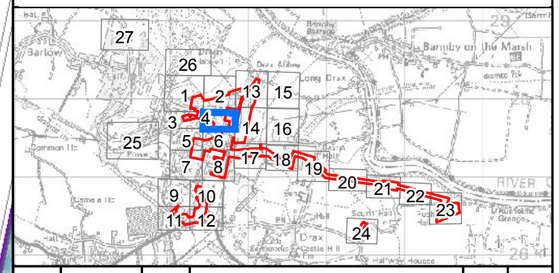

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N

Drain
L Twr
Tanks
FBs
Tank
Cooling Tower
FB
Tanks
Trav Crane
L Twr
Travelling Crane
ettling onds

Development Parcel F

0 10 20 40 60 80 m

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Buildings
- Hard standing

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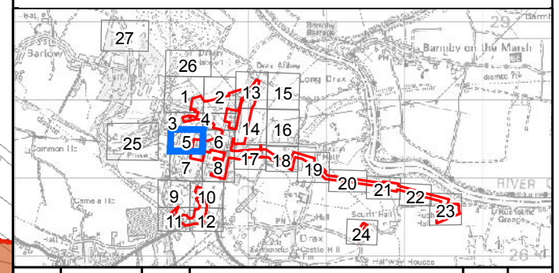

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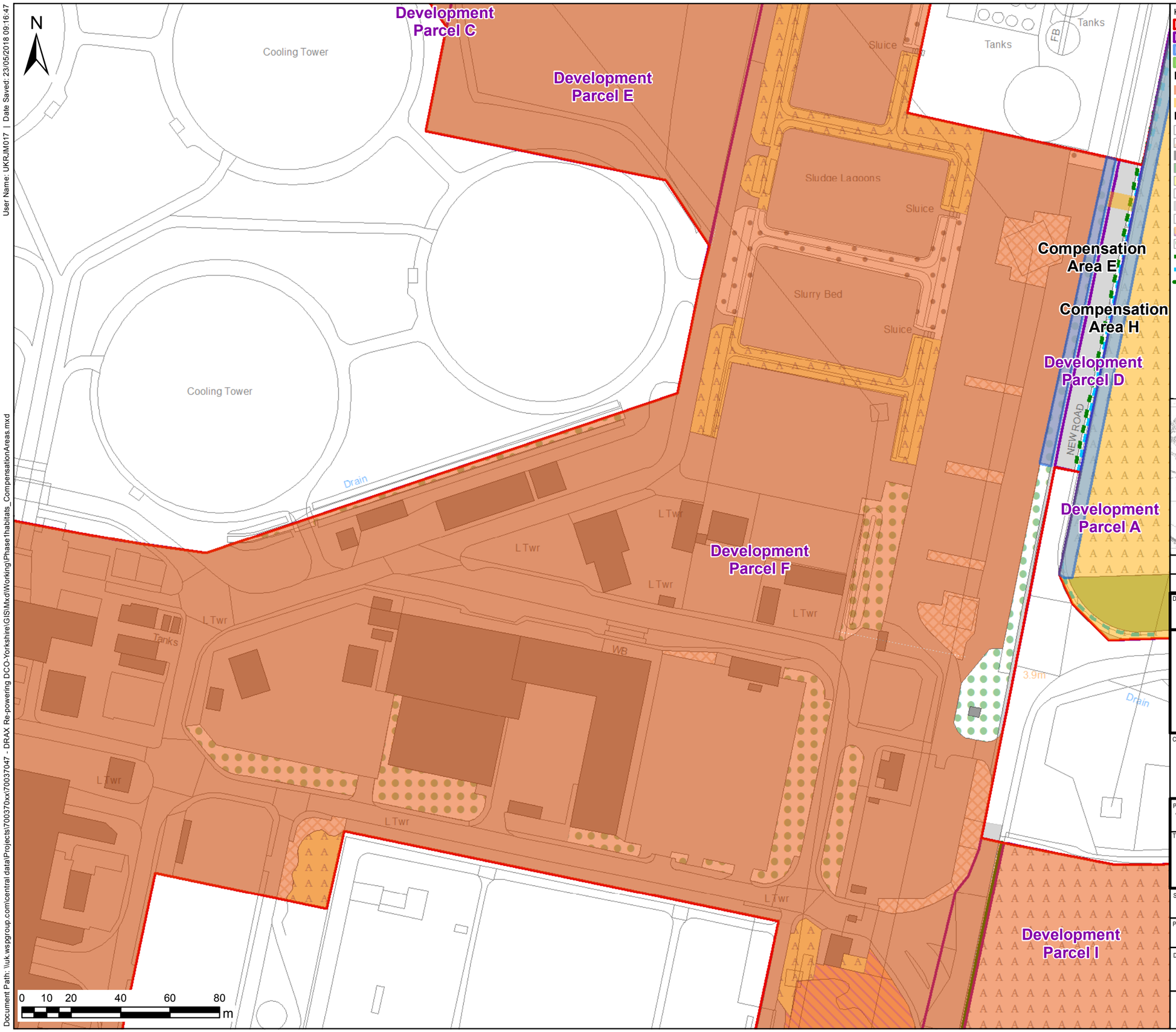


Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

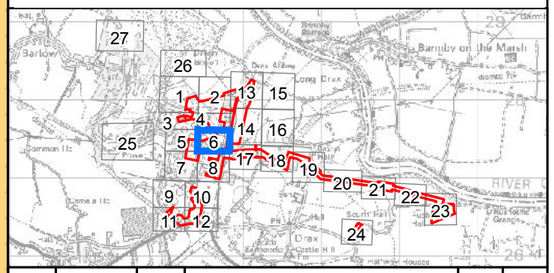
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Bare ground
- Introduced shrub
- Buildings
- Broadleaved woodland - semi-natural
- Cultivated/disturbed land - amenity grassland
- Improved grassland
- Hard standing
- Cultivated/disturbed land - arable
- Marsh/marshy grassland
- Broadleaved Parkland/scattered trees
- Defunct hedge - species-poor
- Dry ditch
- Intact hedge - species-poor

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



REV	DATE	BY	DESCRIPTION	CHK	APP
A	23/04/2018	RMcC	FIRST ISSUE	PD	CT

DRAWING STATUS: FINAL

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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 6 of 27

SCALE @ A3:	CHECKED:		APPROVED:
1,500 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

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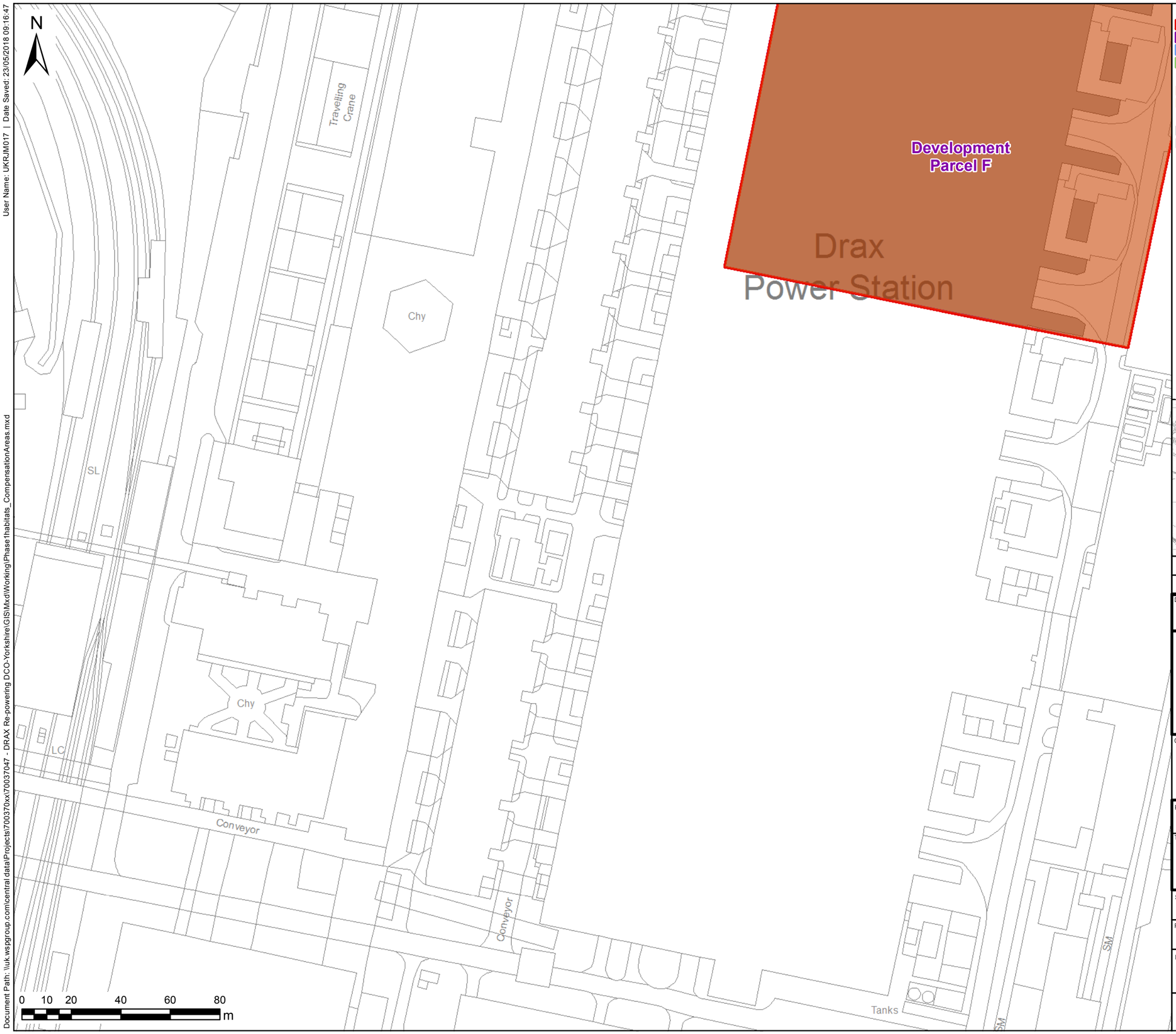


Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

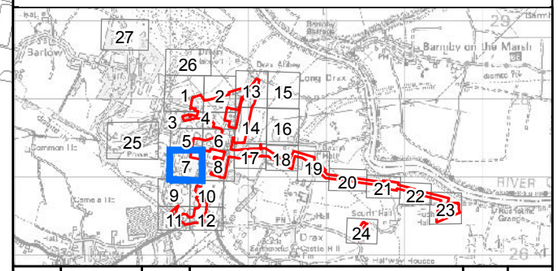
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Buildings
- Hard standing

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



REV	DATE	BY	DESCRIPTION	CHK	APP
A	23/04/2018	RMcC	FIRST ISSUE	PD	CT

DRAWING STATUS: FINAL

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CLIENT: drax

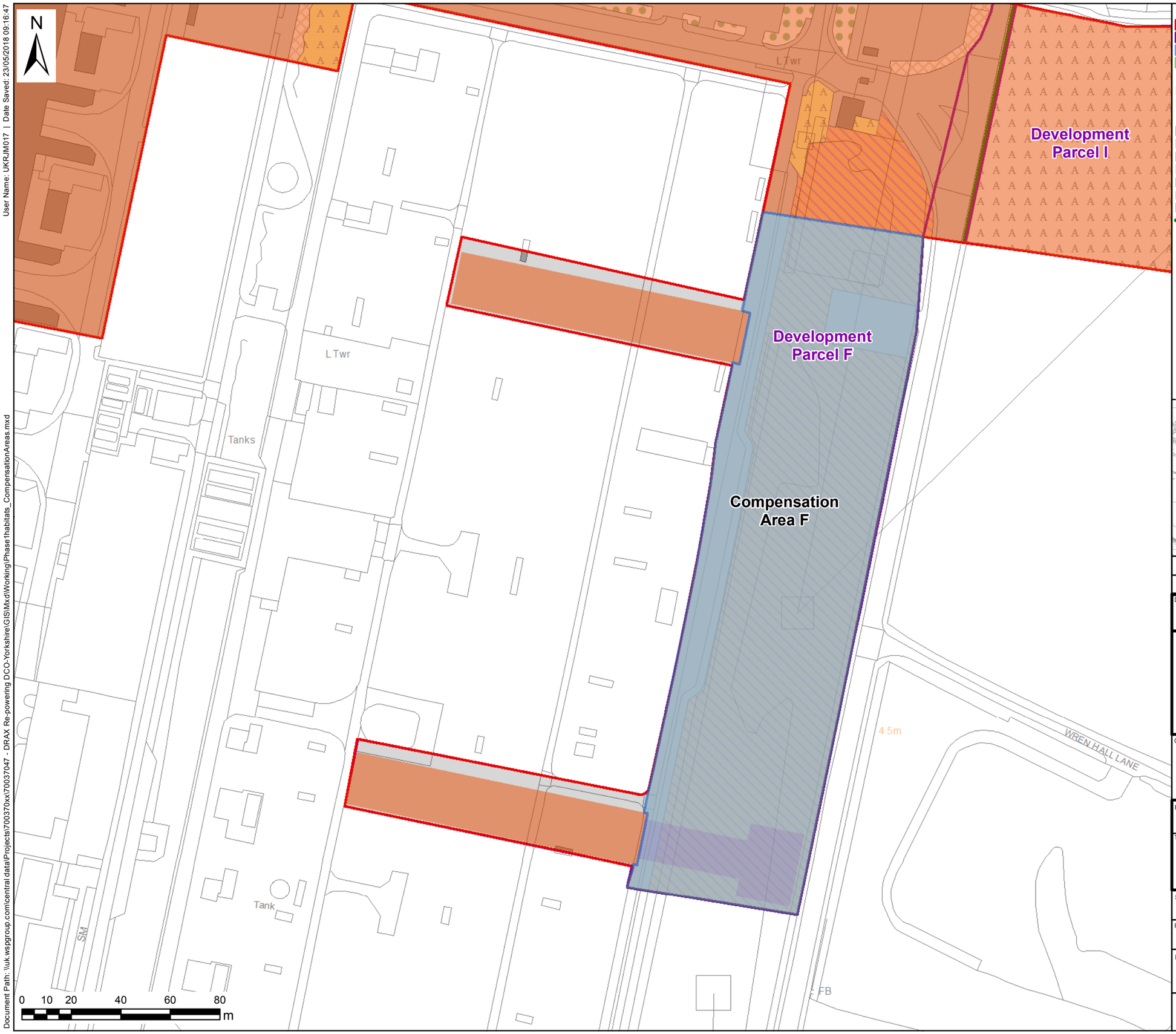
PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 7 of 27

SCALE @ A3:	CHECKED:	APPROVED:
1,500 @ A3	PD	CT

PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

DRAWING No: | REV: A



Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

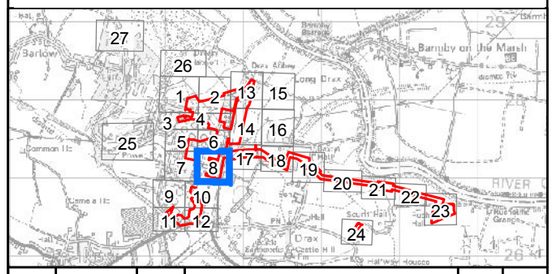
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Introduced shrub
- Buildings
- Cultivated/disturbed land - amenity grassland
- Hard standing
- Cultivated/disturbed land - arable
- Marsh/marshy grassland
- Broadleaved Parkland/scattered trees
- Intact hedge - species-poor

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



REV	DATE	BY	DESCRIPTION	CHK	APP
A	23/04/2018	RMcC	FIRST ISSUE	PD	CT

DRAWING STATUS: FINAL

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CLIENT: drax

PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 8 of 27

SCALE @ A3:	CHECKED:		APPROVED:
1,500 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

DRAWING No: | REV: A

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

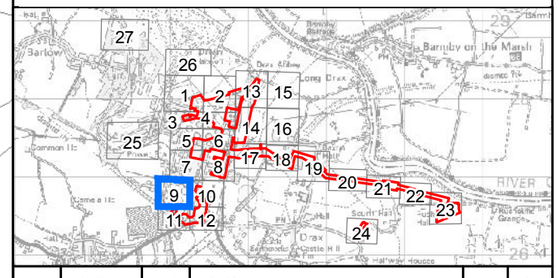
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Bare ground
- Buildings
- Hard standing

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



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A	23/04/2018	RMcC	FIRST ISSUE	PD	CT

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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 9 of 27

SCALE @ A3:	CHECKED:		APPROVED:
1,500 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

DRAWING No: | REV: A

N

Compensation Area F

Development Parcel H

Tank
Tanks
L Twr
SM
FB
Sluice
Drain
Cooling Tower
Mast (Telecommunication)
NEW ROAD
4.7m

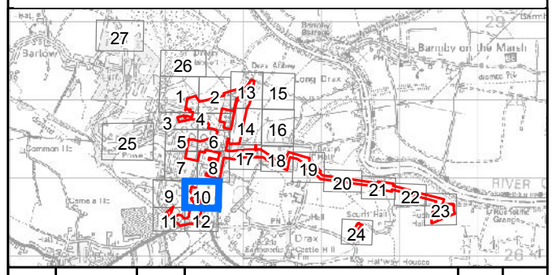
0 10 20 40 60 80 m

Key
- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

Landtake
- Permanent
- Temporary

Phase 1 Habitats
- Introduced shrub
- Buildings
- Standing water
- Cultivated/disturbed land - amenity grassland
- Hard standing
- Marsh/marshy grassland
- Broadleaved Parkland/scattered trees
- Intact hedge - species-poor

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



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A	23/04/2018	RMcC	FIRST ISSUE	PD	CT

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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 10 of 27

SCALE @ A3:	CHECKED:		APPROVED:
1,500 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
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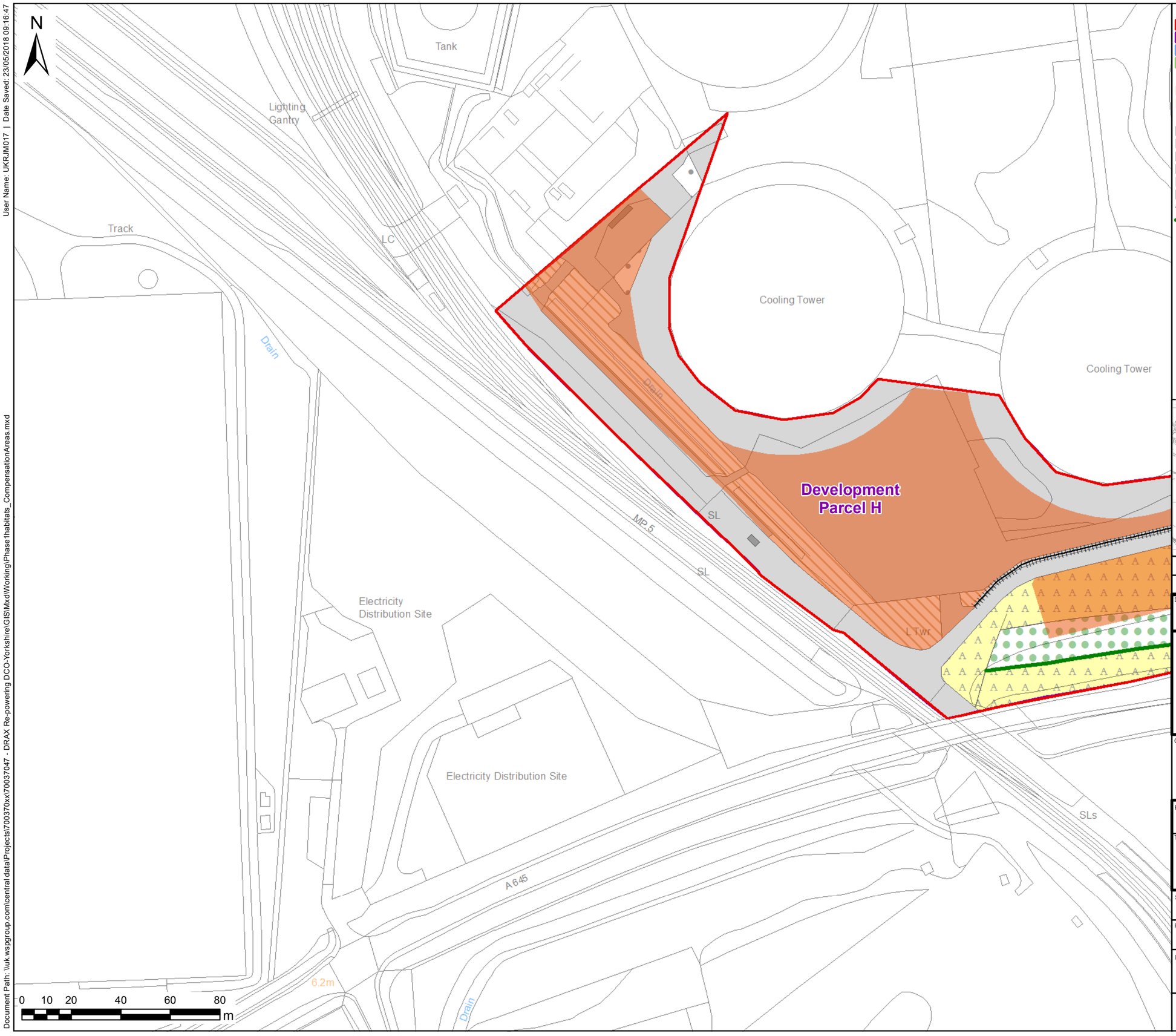


Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

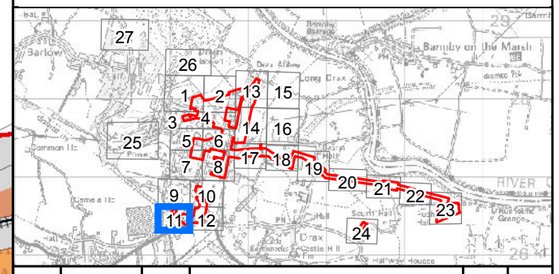
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Bare ground
- Buildings
- Other tall herb and fern - ruderal
- Cultivated/disturbed land - amenity grassland
- Hard standing
- Broadleaved Parkland/scattered trees
- Fence
- Intact hedge - species-poor

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



REV	DATE	BY	DESCRIPTION	CHK	APP
A	23/04/2018	RMcC	FIRST ISSUE	PD	CT

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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 11 of 27

SCALE @ A3:	CHECKED:		APPROVED:
1,500 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
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Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

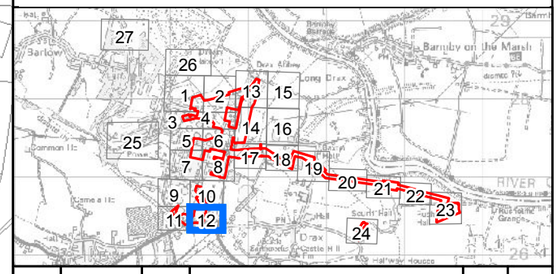
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Standing water
- Cultivated/disturbed land - amenity grassland
- Hard standing
- Broadleaved Parkland/scattered trees
- Fence
- Intact hedge - species-poor

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



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A	23/04/2018	RMcC	FIRST ISSUE	PD	CT

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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 12 of 27

SCALE @ A3:	CHECKED:	APPROVED:
1,500 @ A3	PD	CT

PROJECT No:	DESIGNED:	DRAWN:	DATE:
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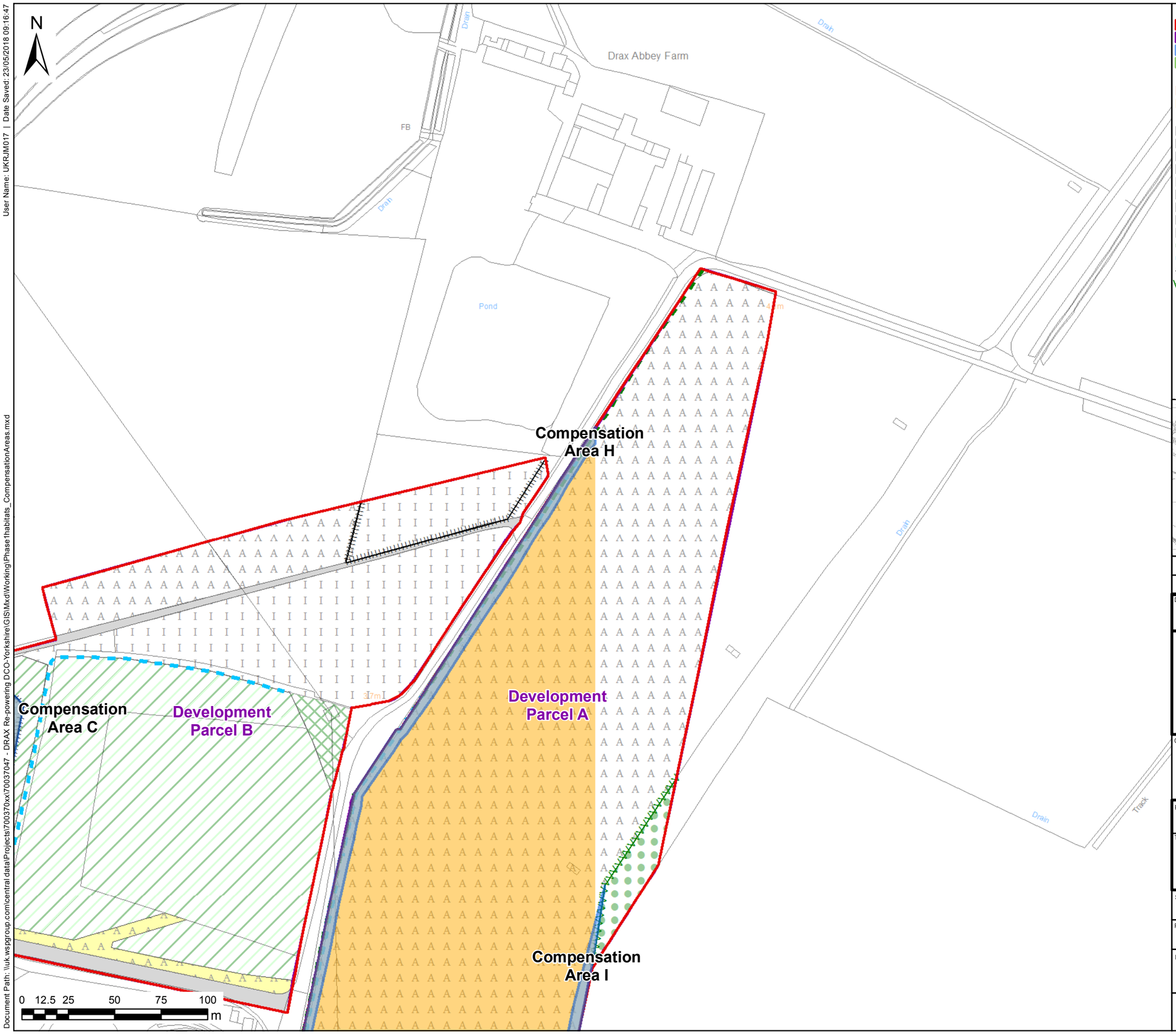


Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

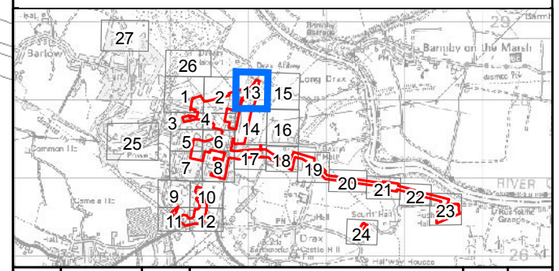
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Scrub - dense/continuous
- Broadleaved woodland - plantation
- Cultivated/disturbed land - amenity grassland
- Improved grassland
- Hard standing
- Cultivated/disturbed land - arable
- Mixed woodland - plantation
- Broadleaved Parkland/scattered trees
- Semi-improved grassland
- Defunct hedge - species-poor
- Dry ditch
- Fence
- Intact hedge - native species-rich

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



REV	DATE	BY	DESCRIPTION	CHK	APP
A	23/04/2018	RMcC	FIRST ISSUE	PD	CT

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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 13 of 27

SCALE @ A3:	CHECKED:		APPROVED:
2,000 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

DRAWING No: | REV: A

N

Development Parcel B

Development Parcel E

Development Parcel A

Compensation Area I

Development Parcel D

Compensation Area H

Compensation Area E

Development Parcel F

Development Parcel J

FB
Tanks
Tank
Sluice
NEW ROAD
Drain
Track
Met Sta
CARR LANE

0 12.5 25 50 75 100 m

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

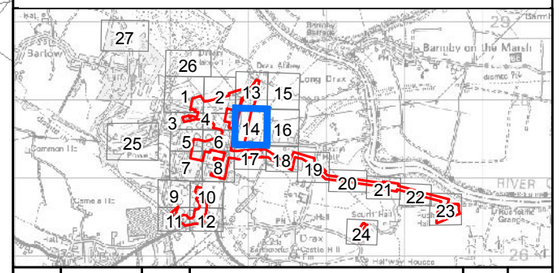
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Bare ground
- Introduced shrub
- Buildings
- Broadleaved woodland - semi-natural
- Other tall herb and fern - ruderal
- Broadleaved woodland - plantation
- Cultivated/disturbed land - amenity grassland
- Improved grassland
- Hard standing
- Cultivated/disturbed land - arable
- Mixed woodland - plantation
- Broadleaved Parkland/scattered trees
- Defunct hedge - species-poor
- Dry ditch
- Intact hedge - native species-rich
- Intact hedge - species-poor

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



REV	DATE	BY	DESCRIPTION	CHK	APP
A	23/04/2018	RMcC	FIRST ISSUE	PD	CT

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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 14 of 27

SCALE @ A3:	CHECKED:		APPROVED:
2,000 @ A3	PD		CT
PROJECT No:	**DESIGNED:**	**DRAWN:**	**DATE:**
70037047	PD	RMcC	23/04/2018

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Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

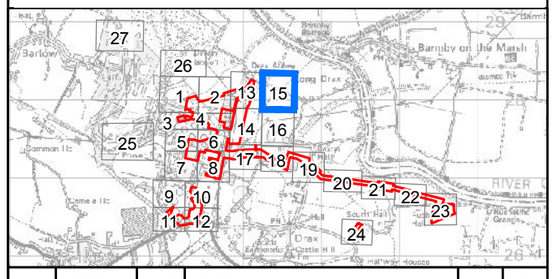
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Cultivated/disturbed land - arable

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



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A	23/04/2018	RMcC	FIRST ISSUE	PD	CT

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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 15 of 27

SCALE @ A3:	CHECKED:		APPROVED:
2,000 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

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N

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

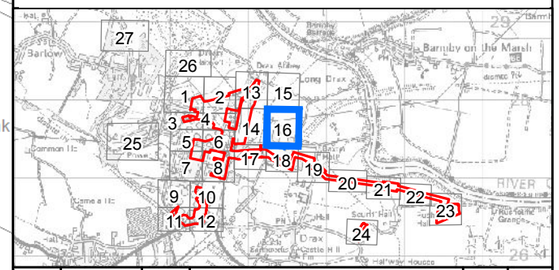
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Hard standing
- A — Cultivated/disturbed land - arable
- Dry ditch

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



REV	DATE	BY	DESCRIPTION	CHK	APP
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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 16 of 27

SCALE @ A3:	CHECKED:		APPROVED:
2,000 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

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New Close Wood
Oakbank
Track
Drain
The Norwoods
4.0m
Pond
SHARP HILL LANE
CARR LANE
The Old Nursery
A
A
A
0 12.5 25 50 75 100 m
Parcel 3

N

Compensation Area I

Development Parcel A

Development Parcel F

Development Parcel I

Development Parcel J

Compensation Area J

Drain

Pond

Track

Met Sta

WREN HALL LANE

1.22m RH

0 10 20 40 60 80 m

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

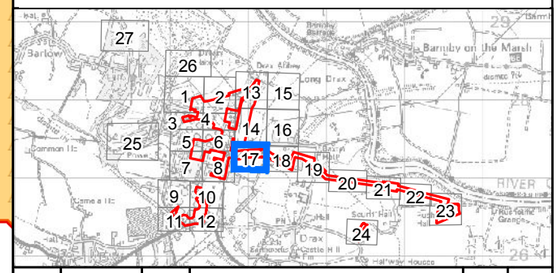
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Bare ground
- Broadleaved woodland - semi-natural
- Other tall herb and fern - ruderal
- Improved grassland
- Hard standing
- Cultivated/disturbed land - arable
- Broadleaved Parkland/scattered trees
- Defunct hedge - species-poor
- Dry ditch
- Intact hedge - native species-rich

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



REV	DATE	BY	DESCRIPTION	CHK	APP
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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 17 of 27

SCALE @ A3:	CHECKED:		APPROVED:
1,500 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

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N

CARR LANE

Drain

Drain

Drain

The Old Nursery

Drain

Def

1.22m RH

1.22m RH

Def

Development Parcel J

Track

Wren Hall

Woodcock Wood

SP

Drain

Def

0 10 20 40 60 80 m

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

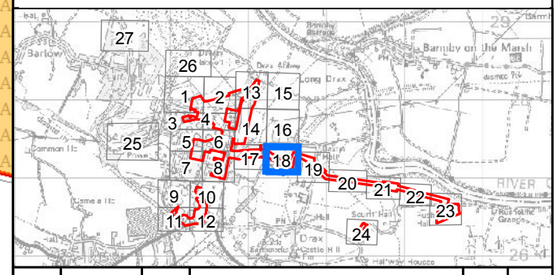
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Standing water
- A — Cultivated/disturbed land - arable
- Broadleaved Parkland/scattered trees
- Defunct hedge - species-poor

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



REV	DATE	BY	DESCRIPTION	CHK	APP
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DRAWING STATUS: FINAL

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CLIENT: drax

PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 18 of 27

SCALE @ A3:	CHECKED:		APPROVED:
1,500 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

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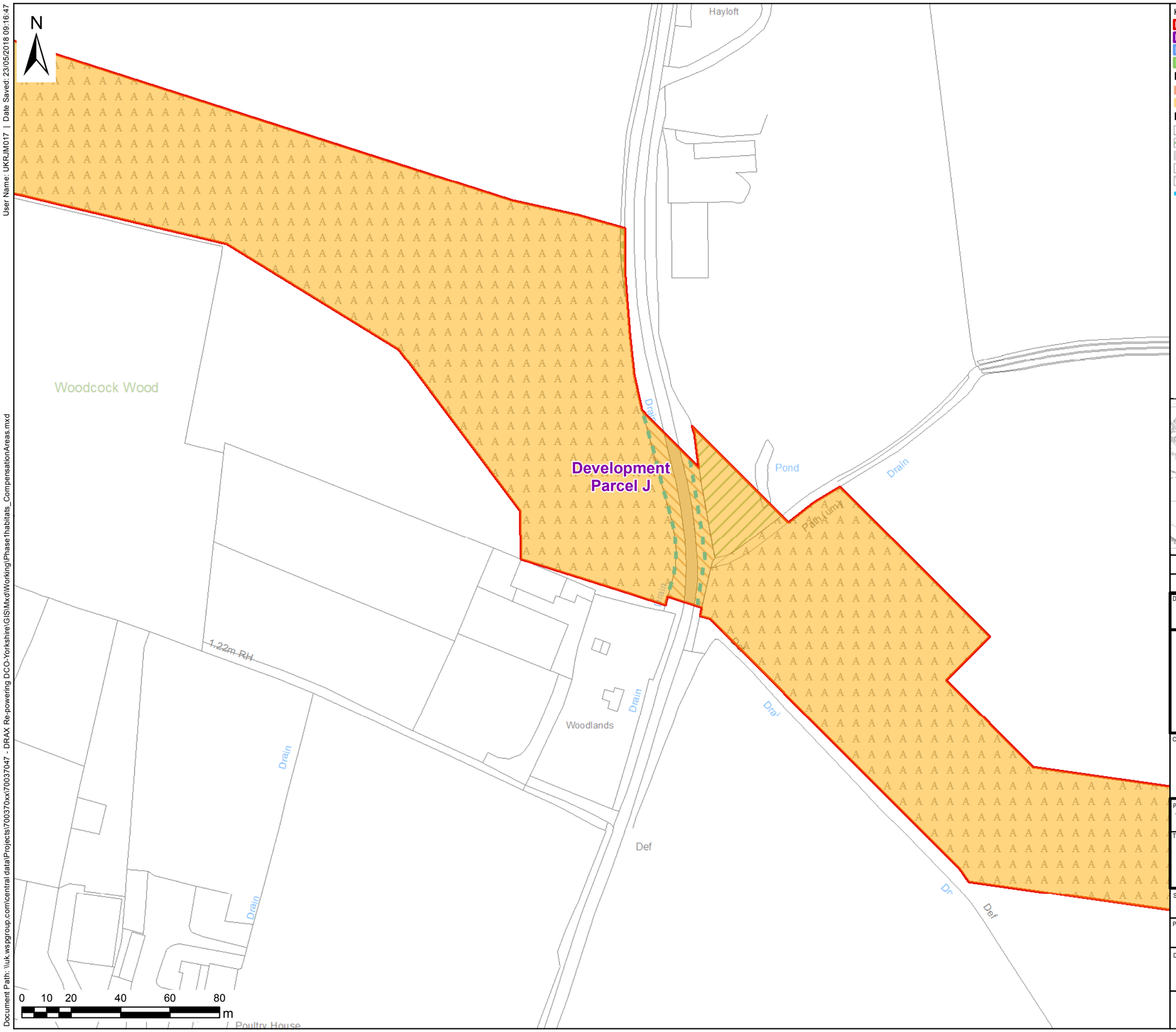


Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

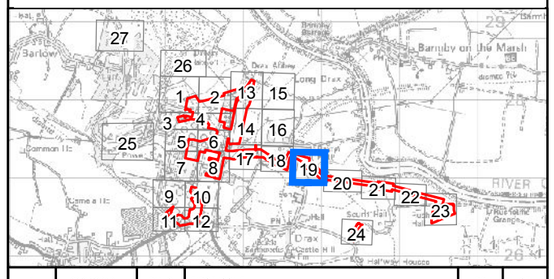
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Other tall herb and fern - ruderal
- Broadleaved woodland - plantation
- Hard standing
- Cultivated/disturbed land - arable
- Broadleaved Parkland/scattered trees
- Dry ditch

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



REV	DATE	BY	DESCRIPTION	CHK	APP
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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 19 of 27

SCALE @ A3:	CHECKED:	APPROVED:
1,500 @ A3	PD	CT

PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

DRAWING No: | REV: A

N

Development Parcel J

Drain

Drain

0 10 20 40 60 80 m

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

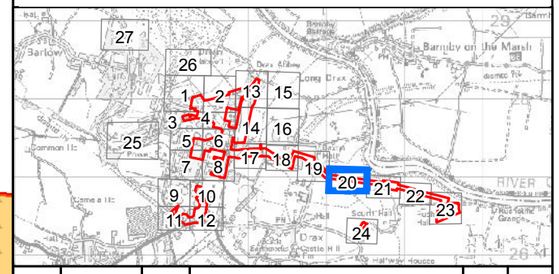
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Cultivated/disturbed land - arable
- Broadleaved Parkland/scattered trees

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



REV	DATE	BY	DESCRIPTION	CHK	APP
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CLIENT: drax

PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 20 of 27

SCALE @ A3:	CHECKED:		APPROVED:
1,500 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

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N

Def

Sluice

5.5m

Path (um)

5.5m

5.5m

Development Parcel J

0 10 20 40 60 80 m

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

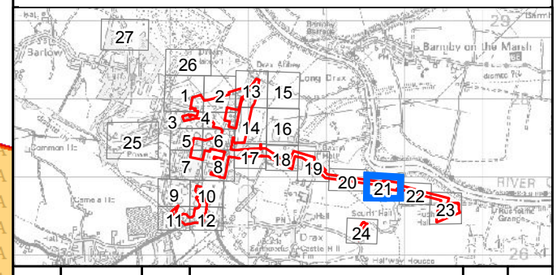
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- 1 Improved grassland
- A Cultivated/disturbed land - arable
- Dry ditch

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 21 of 27

SCALE @ A3:	CHECKED:	APPROVED:
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N

Development Parcel J

3.8m
4.1m
3.9m
RUSHOLME LANE
Rusholme Hall
Track

0 10 20 40 60 80 m

Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

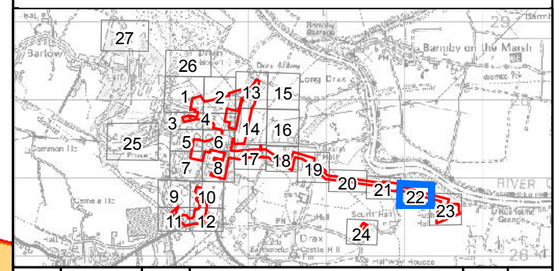
Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Cultivated/disturbed land - arable

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 22 of 27

SCALE @ A3:	CHECKED:		APPROVED:
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PROJECT No:	DESIGNED:	DRAWN:	DATE:
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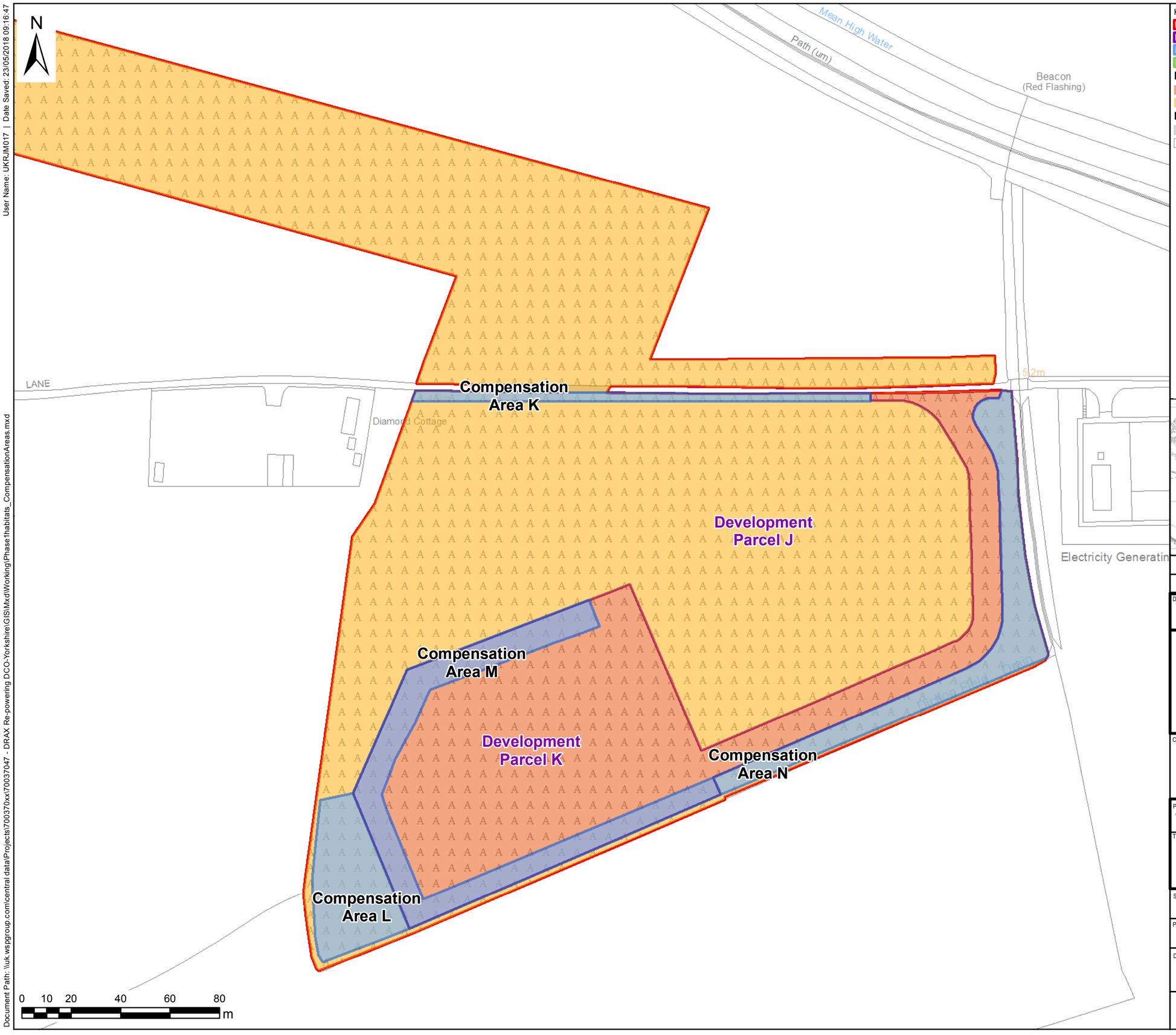


Key

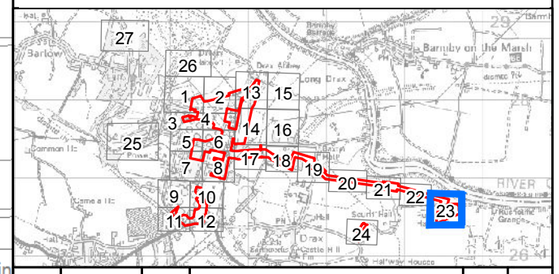
- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Hard standing
- A Cultivated/disturbed land - arable



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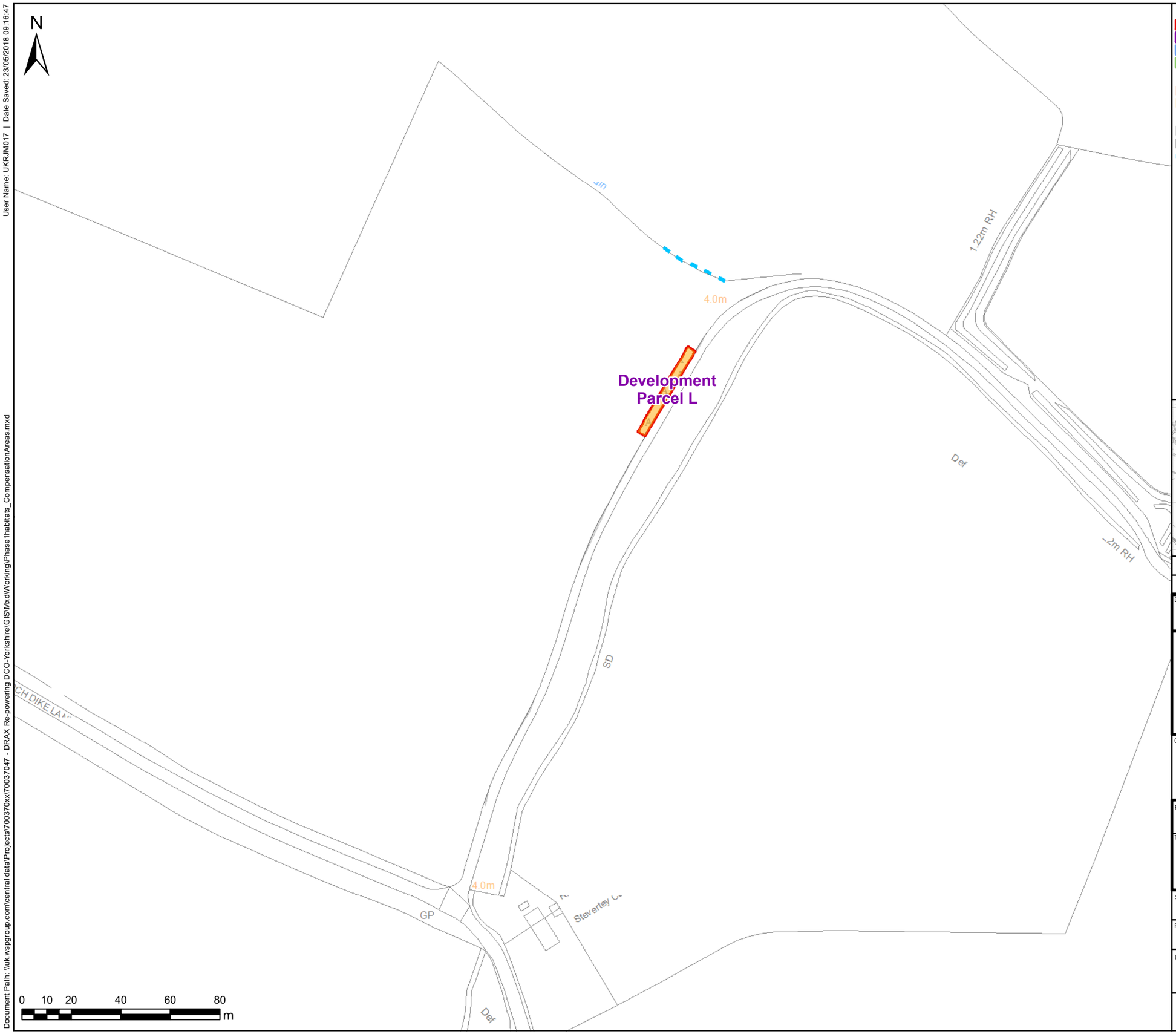
PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 23 of 27

SCALE @ A3:	CHECKED:		APPROVED:
1,500 @ A3	PD		CT
PROJECT No: 70037047	DESIGNED: PD	DRAWN: RMcC	DATE: 23/04/2018
DRAWING No:			REV: A



Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

Landtake

- Permanent
- Temporary

Phase 1 Habitats

- Hard standing
- A — Cultivated/disturbed land - arable
- Dry ditch

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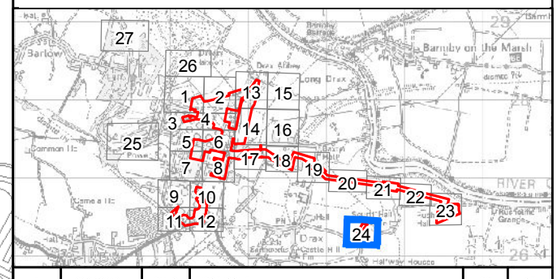

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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 24 of 27

SCALE @ A3:	CHECKED:	APPROVED:
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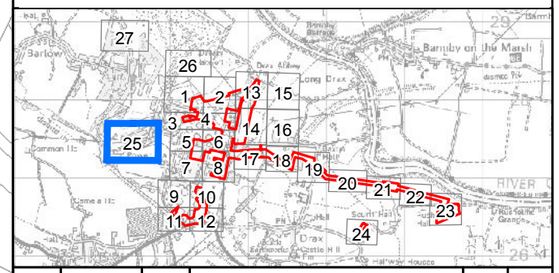
Key

- Site Boundary
- Development Parcels
- Compensation Areas
- Areas Considered Separately

Landtake

- Permanent
- Temporary

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 25 of 27

SCALE @ A3:	CHECKED:		APPROVED:
2,500 @ A3	PD		CT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	PD	RMcC	23/04/2018

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N

Tank
Chy
Silo
Conveyor
122mRH
Stone
Track
FB
Pond
Ditch
ED & Ward Bdy
LTwr
Conveyor
Pond
Track
Ditch

Compensation Area O

Compensation Area A

Compensation Area B

0 12.5 25 50 75 100 m

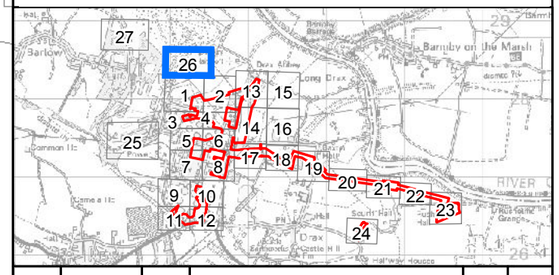
Key

- Site Boundary
- Development Parcels
- Compensation
- Areas Considered Separately

Landtake

- Permanent
- Temporary

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)



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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 26 of 27

SCALE @ A3:	CHECKED:	APPROVED:
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PROJECT No:	DESIGNED:	DRAWN:	DATE:
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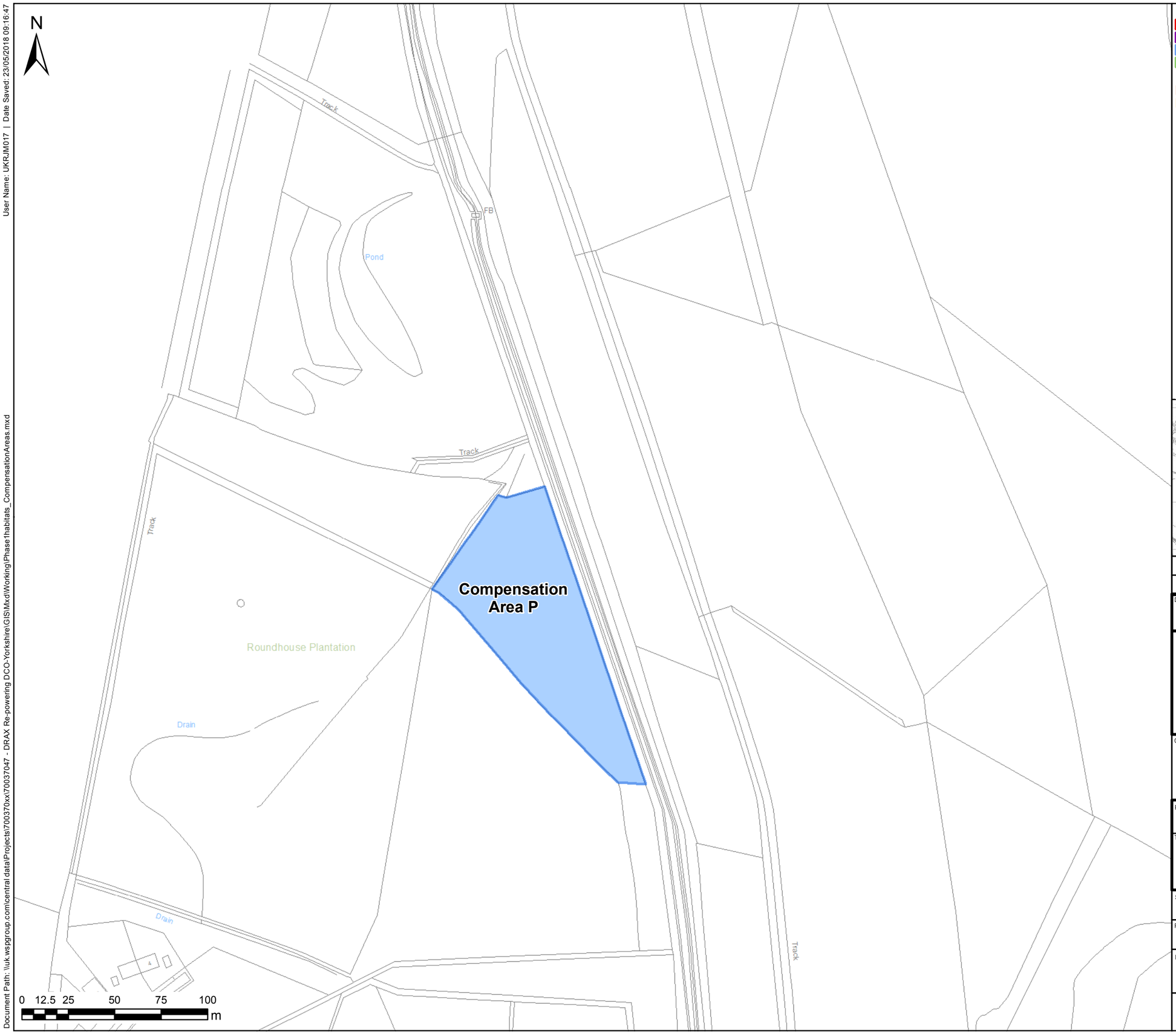

Key

- Site Boundary
- Development Parcels
- Compensation
- Areas Considered Separately

Landtake

- Permanent
- Temporary

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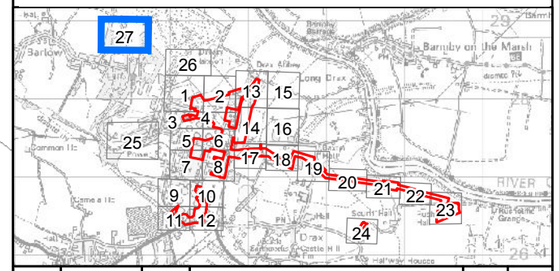

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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Compensation Areas - Sheet 27 of 27

SCALE @ A3:	CHECKED:		APPROVED:
2,000 @ A3	PD		CT
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