

## 10 Ecology/Biodiversity

### 10.1 Introduction

This chapter comprises an ecological impact assessment of the proposed development. The assessment was carried out by Moore Group. Field surveys were completed by Ger O'Donohoe M.Sc.

This chapter provides information on ecological features of particular significance within or adjacent to the site of the proposed development, primarily designated habitats and species, including habitats/species listed in Annex I, II and IV of the EU Habitats Directive, rare flora listed in the Flora Protection Order, along with other semi-natural habitats of conservational value.

The following important ecological receptors were considered in the planning and designing of the overall development, and in assessing its likely ecological effects:

- Sites with nature conservation designations, including proposed Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Natural Heritage Areas (pNHAs), the reasons for their designation, and their conservation objectives, where available.
- Annex IV (Habitats Directive) species of fauna and flora, and their breeding sites and resting places, which are strictly protected under the European Communities (Birds and Natural Habitats) Regulations, 2011.
- Other species of fauna and flora which are protected under the Wildlife Acts, 1976-2012.
- 'Protected species and natural habitats', as defined in the Environmental Liability Directive (2004/35/EC) and European Communities (Environmental Liability) Regulations, 2008, including:
  - Birds Directive – Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur).
  - Habitats Directive – Annex I habitats, Annex II species and their habitats, and Annex IV species and their breeding sites and resting places (wherever they occur).
- Other habitats of ecological value in a national to local context, including woodlands, wetlands and rocky habitats in the general area.
- Stepping stones and ecological corridors encapsulated by Article 10 of the Habitats Directive.

This chapter takes cognisance of the planning of the overall data centre site and was compiled with regard to the protection measures for the rare plant Wood bitter vetch *Vicia orobus* which was recorded within the site. The chapter has due regard to the Conservation Management Plan for *V. orobus* on the overall data centre site and addresses any in-combination effects with the proposed power supply.

This chapter has been compiled in compliance with the European Communities requirements and follows *Guidelines on the Information to be contained in Environmental Impact Statements* (Environmental Protection Agency, 2002) and *Advice Notes on Current Practice in the preparation of EIS* (Environmental Protection Agency 2003) and draft revised guidance *Revised Guidelines on the Information to be contained in Environmental Impact Statements* (Environmental Protection Agency, 2015a) and *Advice Notes on Current Practice in the preparation of EIS* (Environmental Protection Agency, 2015b).

The European Habitats Directive 92/43/EEC (Article 6) indicates the need for plans and projects to be subject to Appropriate Assessment; AA if the plan or project is not directly connected with or necessary to the management of a Natura 2000 site (which includes SACs and SPAs) but which has the potential to have implications on a site's conservation objectives. These implications can be significant effects either individually or in combination with other plans or projects. The first stage of this assessment is screening for AA.

A report to provide information to An Bord Pleanála to carry out screening for Appropriate Assessment was prepared by Moore Group and is appended as **Appendix 10.1** to this EIS. It is the opinion of Moore Group in the Report for Screening for Appropriate Assessment after considering scientific evidence gathered in the compilation of the Hydrology and Hydrogeology Chapter of this EIS, that there will be no significant impacts on the integrity of the European Sites considered in that assessment as a result of the proposed development.

The proposed development is the construction of a 220kV electrical power supply and substation for the proposed Apple Data Centre (currently under planning appeal). A detailed description of the proposed development is provided in Section 3.4 of this EIS. The proposed route and layout for the electrical connection to the existing overhead 220kV power lines is shown on **Figure 3.2b**. The layout of the proposed substation on the site of the data centre is shown on **Figure 3.2c**.

It is proposed that two separate connections will be brought to the proposed substation, one from the Cashla Tynagh Line and one from the Cashla Prospect Line. These connections will involve the construction of seven new tower structures. In addition, three existing tower structures will also be removed as part of the works. In general, the power supply to the site will be underground. However, in the location of the M6 motorway and the new Rathmorrissey interchange, sections of overhead lines will be required.

## 10.2 Methodology

### 10.2.1 Policy & Guidance

#### 10.2.1.1 EU Habitats Directive

The “Habitats Directive” (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna) is the main legislative instrument for the protection and conservation of biodiversity within the European Union and

lists certain habitats and species that must be protected within wildlife conservation areas, considered to be important at a European as well as at a national level. A “Special Conservation Area” or SAC is a designation under the Habitats Directive. The Habitats Directive sets out the protocol for the protection and management of SACs.

The Directive sets out key elements of the system of protection including the requirement for “Appropriate Assessment” of plans and projects. The requirements for an Appropriate Assessment are set out in the EU Habitats Directive. Articles 6(3) and 6(4) of the Directive.

### 10.2.1.2 EU Birds Directive

The “Birds Directive” (Council Directive 79/409/EEC as codified by 2009/147/EC) provides for a network of sites in all member states to protect birds at their breeding, feeding, roosting and wintering areas. This Directive identifies species that are rare, in danger of extinction or vulnerable to changes in habitat and which need protection (Annex 1 species). Appendix I of the Directive indicates Annex I bird species. A “Special Protection Area” or SPA, is a designation under The Birds Directive.

### 10.2.1.3 Appropriate Assessment

Special Areas of Conservation and Special Protection Areas form a pan-European network of protected sites known as Natura 2000 sites. Article 6(3) of the Habitats Directive requires that any plan or project that is not directly connected with or necessary to the management of the Natura 2000 site concerned but is likely to have a significant effect on it, on its own or in combination with other plans and projects, is to be authorised only if it will not adversely affect the integrity of that site. Screening for AA and, if screening indicates the need, AA itself, must be carried out and the assessment and conclusions recorded to ensure that existing and future plans or projects are not authorised if they are likely to adversely affect the integrity of a site. These safeguards are designed to ensure the conservation of Natura 2000 sites.

### 10.2.1.4 Wildlife Acts 1976 - 2012

The primary domestic legislation providing for the protection of wildlife in general, and the control of some activities adversely impacting upon wildlife is the Wildlife Act of 1976. The aims of the Wildlife Act, according to the National Parks and Wildlife Service are “... *to provide for the protection and conservation of wild fauna and flora, to conserve a representative sample of important ecosystems, to provide for the development and protection of game resources and to regulate their exploitation, and to provide the services necessary to accomplish such aims.*” All bird species are protected under the Act. The Wildlife (Amendment) Act of 2000 amended the original Act to improve the effectiveness of the Act in order to achieve its aims. The Wildlife (Amendment) Act of 2012 amended the Act with regard to the timing of hunting.

## 10.2.2 Survey Methodology

This assessment identifies areas of designated nature conservation, including Special Areas of Conservation, (SACs), Special Protection Areas (SPAs), Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs) within 15 km of the project site and identifies areas where rare or protected species of flora and fauna may occur within the study area. In addition, undesignated natural or semi-natural areas of biodiversity value are identified.

The assessment was carried out in three stages, firstly through desktop assessment to determine existing records in relation to habitats and species present in the study area. This included consultation of the National Parks and Wildlife Service (NPWS) database ([www.npws.ie](http://www.npws.ie)), the National Biodiversity Data Centre (NBDC) database ([www.biodiversityireland.ie](http://www.biodiversityireland.ie)), BirdWatch Ireland ([www.birdwatchireland.ie](http://www.birdwatchireland.ie)) and a literature review of published information on flora and fauna occurring in and adjacent to the development area.

The following resources assisted in the production of this section of the assessment:

- Ordnance Survey Ireland maps
- OSI, Google and Bing Aerial photography
- National Biodiversity Data Centre data: <http://www.biodiversityireland.ie/>
- National Parks and Wildlife Service (NPWS) Mapviewer:  
<http://www.npws.ie/en/MapsData/>
  - Designated sites (SACs, SPAs, NHAs)
  - Records of protected species from 10km squares
  - Species related publications

Other environmental information for the area was reviewed, e.g. in relation to soils, geology and hydrology. Interactions in terms of the chapters on these topics presented in this EIS were important in the determination of source vector pathways and links with potentially hydrogeologically connected areas outside the proposed development site.

The second phase of the assessment involved site visits to establish the existing environment in the footprint of the proposed development. Areas which are highlighted during the desktop assessment were investigated in closer detail and mapped according to the Heritage Council publication *Best Practice Guidance for Habitat Survey and Mapping* (Smith *et al.*, 2011) which is the agreed national methodology.

Flora was surveyed by walkover to determine species composition and distribution in areas identified as potential receptors. Habitat types were mapped using GPS coordinates and target notes of features of important ecological value in the study area were maintained.

Flora and habitats at the site of the proposed development were classified according to the Heritage Council publication '*A Guide to Habitats in Ireland*'

(Fossitt, 2000). This publication sets out a standard scheme for identifying, describing and classifying wildlife habitats in Ireland according to a hierarchical framework, with Level One habitats representing broad habitat groups, Level Two representing habitat sub-groups and Level Three representing individual habitat types. The Phase I Field Survey focused on identifying habitats to Level Three of the *Guide to Habitats in Ireland*. The annotation of vegetation occurring within sites was undertaken using the DAFOR scale. This scale refers to plant species in terms of dominance, abundance, frequency, occasional and rare (DAFOR). Species recorded in this report are given both their Latin and English names. Latin names for plant species follow the nomenclature of 'An Irish Flora' (Parnell & Curtis, 2012).

Fauna were surveyed in the context of access and egress corridor effects as well as footprint impacts and also for potential indirect disturbance effects, especially for mammals and birds. Any mammalian fauna, their tracks etc., observed during the visits were identified, and the potential value of the site to mammals was assessed in terms of potential disturbance, loss of feeding, resting/roosting or breeding habitat. The mammals considered were: bats and badgers, red squirrel, pine marten, stoat and smaller rodents.

Bat surveys were undertaken on the main data centre site and the results of that survey are referred to in this assessment. A bat detector survey was not undertaken in the area outside the site as it is comprised of open grassland fields with low stone wall boundaries with little or no potential for commuting bats.

Birds were assessed while undertaking habitat surveys. Species descriptions are based on BirdWatch Ireland data ([www.birdwatchireland.ie/IrelandsBirds](http://www.birdwatchireland.ie/IrelandsBirds)) and the Collins Bird Guide App. The principal published sources of information regarding the distribution of breeding birds in Ireland is the '*Bird Atlas 2007-11*' (Balmer *et al.*, 2013).

Amphibians, reptiles and invertebrates were recorded as casual observations.

The next part of the assessment involves an evaluation of the proposed development area and determination of the potential impacts of the proposed development on the flora and fauna of the area. Habitat evaluation is based on the Institute of Ecology and Environmental Management's *Guidelines for Ecological Impact Assessment* (2006) according to the Natura Scheme for evaluating ecological sites (after Nairn & Fossitt, 2004). Judgements on the evaluation are made using geographic frames of reference, e.g. European, National, Regional or Local.

This part of the assessment forms the basis for impact assessment and is based on the following guidelines and publications:

- *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities* (DEHLG, December 2009, Rev 2010)
- *Assessment of plans and projects significantly affecting Natura 2000 sites* (EC, 2002)
- *Managing Natura 2000 Sites* (EC, 2000)

- *Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC* (EC, 2007)
- *EPA Advice Notes on Current Practice* (EPA, 2003)
- *Best Practice Guidance for Habitat Survey and Mapping* (Smith *et al.*, 2011)
- *Bat Mitigation Guidelines for Ireland* (National Parks and Wildlife Service, Department of Environment Heritage and Local Government, 2006)
- *Water Framework Directive Annex IV Protected Areas: Water Dependent Habitats and Species and High Status Sites Guidance* (Mayes, 2008)

The final part of the assessment is the assessment of cumulative impacts. These are addressed in **Section 10.5**.

### 10.2.3 Consultation

The Development Applications Unit (DAU) of the Department of Arts, Heritage & Gaeltacht (DAHG) was sent a scoping letter with a description of the overall data centre project and an indicative masterplan design. A response was received from the NPWS through the DAU and is included as **Appendix 10.2**.

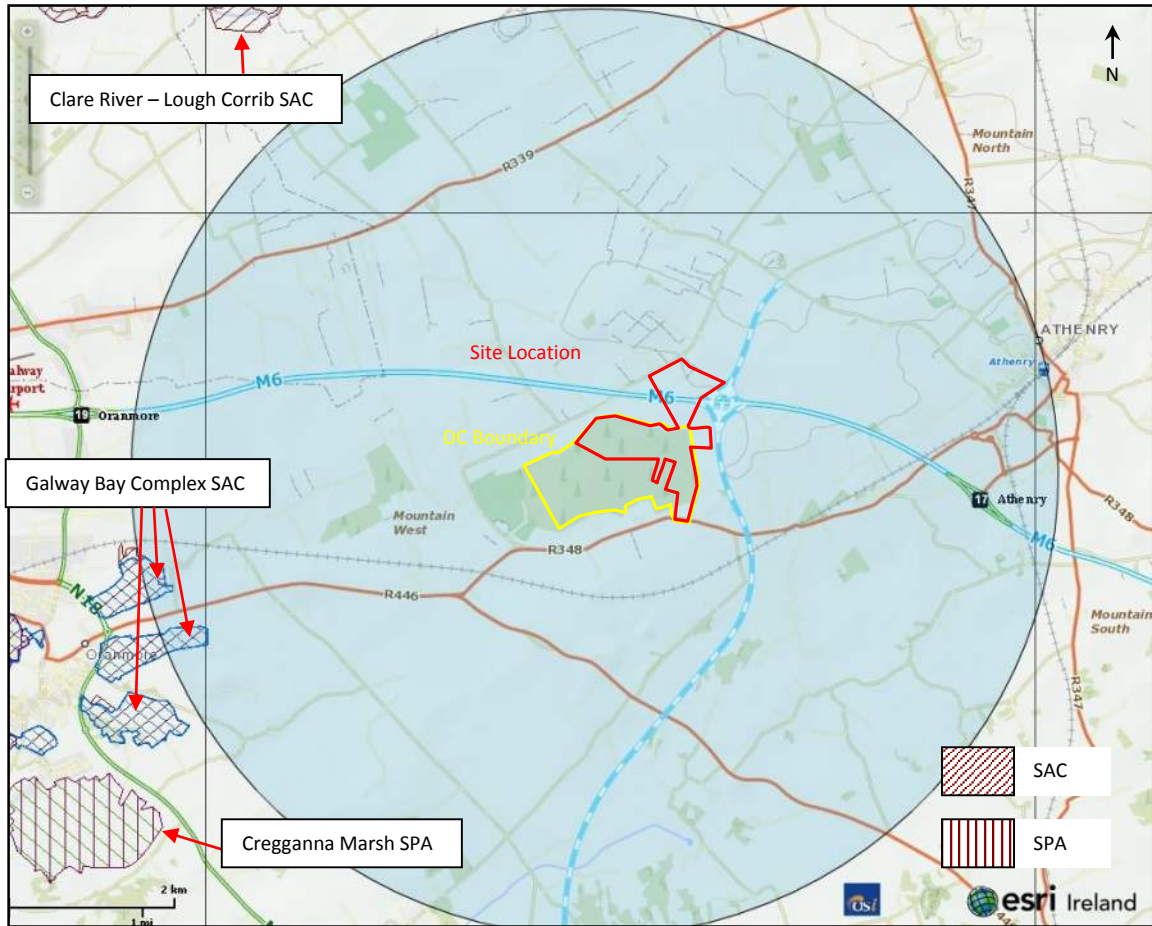
The requirements of the NPWS have been incorporated into this ecological assessment.

## 10.3 Description of the Receiving Environment

### 10.3.1 Designated Conservation Areas

There are no designated conservation areas on the site at Toberroe. The nearest designated area is the Galway Bay Complex SAC (Site Code 000268) located 4.2 kilometres to the west, see **Figure 10.1**. Designated conservation areas within a standard 15 kilometre potential zone of influence were considered and after researching the hydrological links through surface and groundwater it was determined that there is limited biological connectivity and no hydrogeological connectivity to the majority of these sites, a reduced buffer of 5 kilometres was considered appropriate.





**Figure 10.1 Designated conservation areas located within a five kilometre zone**

### 10.3.2 Rare and Protected Species

A response to a request for rare and protected species data was received from the NPWS, highlighting the following species from the 10 km squares in the Derrydonnell, Athenry area (**Table 10.1**). This included bird, mammal and flora species. Cognisance of the occurrence of the rare plant Wood bitter-vetch (*Vicia orobus*) within the overall data centre site was taken into account during the habitat survey of the subject site.

**Table 10.1 List of species occurring in the general survey area**

Common Name	Latin Name
Badger	<i>Meles meles</i>
Common Frog	<i>Rana temporaria</i>
Grey Heron	<i>Ardea cinerea</i>
Irish Hare	<i>Lepus timidus subsp. hibernicus</i>
Irish Stoat	<i>Mustela erminea subsp. hibernica</i>
Otter	<i>Lutra lutra</i>
Hedgehog	<i>Erinaceus europaeus</i>
Northern Yellow-cress	<i>Rorippa islandica</i>

Common Name	Latin Name
Small-White orchid	<i>Pseudorchis albida</i>
Wood bitter-vetch	<i>Vicia orobus</i>

### 10.3.3 Habitat Surveys

Seven habitat types were identified during fieldwork on 9<sup>th</sup> June 2015. These habitats and their classification codes are listed below in **Table 10.2**.

The predominant habitats recorded in the proposed development area are Rich fen and flush (PF1) and Dry calcareous and neutral grassland (GS1). Improved agricultural grassland (GA1) and patches of gorse Scrub (WS2) with a small area of field cleared stone (ER2) make up the remaining habitats. The main habitats recorded are presented on the habitat map presented in **Figure 10.2**. Modified habitats within the data centre site under the footprint of the power cable route and sub-station include Recently felled woodland and Conifer plantation.

The closest groundwater dependant feature, a turlough at Derrydonnell North is located to the west of Athenry Golf Course and is approximately 1.5km southwest of the site boundary. According to the GSI Groundwater Data Viewer there are no recorded groundwater features in or near the boundary of the project site. Karst is addressed in **Chapters 11 Soils and Geology** and **Chapter 12 Hydrology and Hydrogeology**.

Short descriptions of the predominant habitats recorded are given in the following **Sections 9.3.3.1** and **9.3.3.2**. Surveys were undertaken during the optimal sampling period and the species listed are adequate to describe the habitats present.

**Table 10.2 Habitat types present according to Fossitt (2000)**

Habitat	Habitat Category	Habitat Type
(G) Grassland	(GA) Improved grassland	(GA1) Improved agricultural grassland
	(GS) Improved grassland	(GS1) Dry calcareous neutral and grassland
(P) Peatland	(PF) Fens and flushes	(PF1) Rich fen and flush
(W) Woodland and Scrub	(WD) Highly modified/non-native woodland	(WD4) Conifer plantation
	(WS) Scrub/transitional woodland	(WS1) Scrub
		(WS5) Recently felled woodland
(E) Exposed rock and disturbed ground	(ER) Exposed rock	(ER2) Exposed calcareous rock

#### 10.3.3.1 Dry calcareous and neutral grassland (GS1)

The area to the northeast where existing towers are located is comprised predominantly of semi-improved grassland, which is relatively well drained and



subject to intensive grazing by sheep and cattle. This area supports a range of grasses including Creeping bent (*Agrostis stolonifera*), Smooth meadow grass (*Poa Pratensis*), Timothy (*Phleum pratense*), Meadow foxtail (*Alopecurus pratensis*), Crested dog's-tail (*Cynosurus cristatus*), Creeping soft grass (*Holcus mollis*), Yorkshire fog (*Holcus lanatus*), Cock's-foot (*Dactylis glomerata*), False oat-grass (*Arrhenatherum elatius*) and Perennial rye-grass. A range of typical herb species occur including Creeping buttercup (*Ranunculus acris*), Meadow buttercup (*R. repens*), Red Clover (*Trifolium pratense*), Sorrel (*Rumex acetosa*), Ribwort plantain (*Plantago lanceolata*), Meadow vetchling (*Lathyrus pratensis*), Selfheal (*Prunella vulgaris*) and daisy.

A field to the east of existing towers is improved grassland (GA1) with dominant species such as Perennial rye grass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), Smooth meadow grass (*Poa pratensis*), Annual meadow grass (*Poa annua*) and Creeping bent (*Agrostis stolonifera*). Herbs occurring include; White clover (*Trifolium repens*), Red clover (*T. pratense*), Common mouse-ear (*Cerastium fontanum*), Spear thistle (*Cirsium vulgaris*), Creeping thistle (*Cirsium arvense*), Dandelion (*Taraxacum officinale* agg.), Creeping buttercup (*Ranunculus repens*), Daisy (*Bellis perennis*) and Nettle (*Urtica dioica*). This field is intensively grazed by cattle and forms the boundary with the M17/18 Rathmorrissy Interchange. Fields to the north of the M6 motorway where towers are located are comprised of improved agricultural grassland.

There is a line of exposed limestone rock from field clearance (pers. comm. project archaeologist) under the existing powerline in the grassland. The rock is mostly bare, with occasional patches of nettle and evidence of hare burrowing.

### 10.3.3.2 Rich fen and flush (PF1)

The core area of this habitat occurs outside the north-eastern boundary of the data centre site and extends to the area of the existing towers. The area immediately to the north of the site of the proposed Apple data centre (under appeal) contains mosaics of marsh, swamp and open water and while these habitats can be classified separately, they are included under the fen heading as they are geographically contained mosaics.

The fen area to the northeast of the overall data centre site has been previously described for the data centre EIS as surrounded by a mosaic of Marsh (GM1) and Rich fen habitat (PF3) with Reed and large sedge swamp (FS1) including a small strip of Transition mire (PF3) and a pond classified as a Mesotrophic lake (FL4). Some drainage has been attempted on this habitat with an old infilled drain running eastwards towards the cable route into the data centre site. During previous surveys in July and October 2014, this fen habitat had been drained mechanically via a ditch leading to a sinkhole to the west.

This wetland/wet grassland mosaic extends northeast, beyond the data centre site, and it is this area that comprises the footprint of the cable route, centred on the existing Tower No. 10 and proposed new tower in this area. The extended area is comprised of wet acidic fen grassland with species including Common sedge (*Carex nigra*), Common spike rush (*Eleocharis palustris*), Flea sedge (*Carex pulicaris*), Common cotton grass (*Eriophorum angustifolium*), Quaking grass

(*Briza media*), Compact rush (*Juncus compactus*), Lousewort (*Pedicularis sylvatica*), Mountain everlasting (*Antennaria dioica*), Creeping cinquefoil (*Potentilla reptans*) along with patches of Gorse scrub (*Ulex europaeus*).

The grassland surrounding the fen has been drained extensively in order to provide access along a farm track to the northern drier section of the field where sheep graze. There are short sections of drain and intermediate wetter areas which support Water Forget-me-not (*Myosotis scorpioides*), Common butterwort (*Pinguicula vulgaris*), Creeping buttercup (*Ranunculus repans*), Yorkshire fog (*Holcus lanatus*) and Common milkwort (*Polygala vulgaris*). Common cotton-grass is frequent in these areas and tufts of Black Bog-rush (*Schoenus nigricans*) were recorded in higher ground. Only three plants of Common Spotted-orchid (*Dactylorhiza fuchsii*) were recorded.

### 10.3.3.3 Conifer Woodland (WD4)

Conifer plantation forms the dominant habitat under the footprint of the proposed substation. This habitat is dominated by Sitka spruce and Japanese larch (*Larix kaempferi*). The shrub layer includes beech seedlings, along with occasional holly, hawthorn and hazel. In many areas where the plantation age is younger or where recent changes in light levels have occurred bramble and bracken dominate the herb layer. Other species occurring include Hart's-tongue fern (*Phyllitis scolopendrium*), Wood speedwell (*Veronica montana*), Germander speedwell, Glaucous sedge (*Carex flacca*), Enchanter's nightshade, Herb robert, Rosebay willowherb, Ivy and Common mouse-ear. In more mature areas, the herb layer is not dominated exclusively by bracken and bramble but instead supports a depauperate herb layer with frequent Broad buckler-fern, Scaly male fern (*Dryopteris affinis*), Hart's-tongue fern and occasional Enchanter's nightshade, Common dog-violet, Creeping bent, Sweet vernal grass and Creeping soft-grass. The vegetation of the bryophyte layer generally dominate the sub-canopy vegetation of these mature areas of conifer plantations. The dominant bryophytes are *Rhytidiadelphus triquetrus* and *Isoetecium myosuroides*. *Thuidium tamariscinum* is frequent and *Polytrichum commune* is occasional while *Plagiothecium undulatum* was rarely recorded.

### 10.3.3.4 Recently Felled Woodland (WS5)

In areas of recently felled woodland, Rosebay willowherb is the dominant species. Dense areas of bramble and bracken also occur. Other species occurring include Tutsan (*Hypericum androsaemum*), Herb robert, Bloody cranesbill, Wild strawberry, Barren strawberry, Silverweed, Creeping buttercup, Nettle, Gorse, Germander speedwell, Wood speedwell, Common dog-violet, Sweet vernal-grass, Cock's-foot, False oat-grass, Yorkshire fog and Creeping soft-grass.

## 10.3.4 Rare Plant Survey

The planning application for the overall data centre site included an extensive survey of the rare plant Wood Bitter Vetch *Vicia orobus*. The presence of the plant on the data centre site generated a number of further surveys and a Conservation Management Plan (CMP) for the long term protection of the plant

on the overall site. The CMP is included as **Appendix 10.3**. Since the development of the CMP numerous plants have been translocated under licence from the NPWS and the current status of the plant (December, 2015) is presented in the Habitat Map, **Figure 10.2**.

The areas to the northeast was searched for the plant and no records were found in this area. Therefore, the CMP remains current and deals with the cable access and substation location within the data centre site.

Additional surveys were carried out over the Spring, Summer and Autumn periods of 2015 by Ger O'Donohoe and Dr. Roden and additional records are included in a current status report, December 2015 which is presented as **Appendix 10.4**. The results of the report are discussed in more detail under Impacts and Cumulative Impacts later in this chapter.

### 10.3.5 Mammal Surveys

#### 10.3.5.1 Badgers

There were no signs of badger activity in the overhead powerline or cable or substation footprint areas.

#### 10.3.5.2 Bats

There are no potential bat roosts on the overhead powerline or cable trench route and little or no potential for bat commuting corridors. The cable trench route crosses open clear felled areas within the site with low bat commuting potential and the substation is located in dense conifer plantation with low bat roosting potential.

Bat surveys of the data centre site were carried out in August 2014 and July 2015. Overall, the numbers of bats recorded within and around the site appear to be moderate when compared to similar lowland wooded sites. Much of the site did not appear to support high quality roosting habitats with limited trees of high potential to support roosting bats. Mature broadleaf trees that could host bat roosts are generally confined to the southern and northern edges of the site.

With regard to the 2014 (for the EIS) and 2015 surveys, both surveys were undertaken during the optimal survey period. Weather conditions were similar during both surveys. In comparison with the results documented in the EIS for the transect surveys, overall, similar species were recorded along the transects during both surveys. Less numbers of bat passes were recorded along the transects in July 2015 than in August 2014, however, only half of the number of transects surveyed in August 2014 were re-surveyed in July 2015, as only the transects in the area of the proposed development were surveyed in July 2015.

Insect food for bats is usually plentiful in conifer plantations, but the harvesting of the trees prior to maturity limits the availability of holes, even in the high forest stage.

It is acknowledged that there is a shortage of roosting sites in coniferous plantations. Bat Conservation Ireland Information Leaflet no. 3 – Bat Boxes.

### 10.3.5.3 Other Mammals

The woodland surrounding the overall data centre site is used by several mammal species including Pine marten (*Martes martes*), Irish hare (*Lepus timidus sp. hibernicus*), Fox (*Vulpes vulpes*) and Red squirrel (*Sciurus vulgaris*).

The area to the northeast where the proposed new towers are to be located provided foraging areas for fox and Irish Hare.

### 10.3.6 Birds

Species recorded during fieldwork included Blue tit (*Cyanistes caeruleus*), Blackbird (*Turdus merula*), Chaffinch (*Fringilla coelebs*), Wren (*Troglodytes troglodytes*), Pigeon (*Columba palumbus*) and Grey crow (*Corvus tristis*).

### 10.3.7 Reptiles, Amphibians and Invertebrates

There were no rare or protected invertebrates recorded in the study areas.

## 10.4 Characteristics of the Proposed Development

The proposed development will comprise the construction of a 220kV electrical power supply and substation for the proposed Apple Data Centre. It is proposed that two separate connections will be brought to the proposed substation, one from the Cashla Tynagh Line and one from the Cashla Prospect Line. These connections will involve the construction of seven new tower structures. In addition, three existing tower structures will also be removed as part of the works. In general, the power supply to the site will be underground. However in the location of the motorway and the new Rathmorrissy interchange, sections of overhead lines will be required. The proposed development is described in detail in Chapter 3 *Site and Project Description*.

Potential Impacts of the Proposed Development

### 10.4.1 ‘Do Nothing’ Impact

If the development were not to proceed, the site of the proposed overhead lines, towers and underground cabling would continue to be used improved farmland. The site of the proposed substation (within the Apple data centre site) would continue to be used for commercial forestry activities.

### 10.4.2 Impacts on Habitats

There are no Annex I habitats or Annex I priority habitats on site or in the land immediately surrounding the site, including the area of the potential grid connection to the northeast. The Lough Corrib, Inner Galway Bay and Cregganna Marsh Natura 2000 sites within 15km of the project site were not considered in

the Report for Screening for Appropriate Assessment (**Appendix 10.1**) due to lack of hydrogeological connectivity and lack of biological connectivity with those sites and the site of the proposed development. The Galway Bay Complex SAC was included as it is located within a 5 km zone of potential influence of the project and potential connectivity through groundwater were considered in terms of potential reduced water quality affecting receiving habitats.

With regard to the Galway Bay Complex SAC which is located within 5 km southwest of the site boundary, there will be no significant impacts on groundwater as a result of the proposed development, see **Chapter 12 Hydrology and Hydrogeology**. Design measures to minimise local potential impacts on groundwater will be implemented both during the construction and operational phases of the proposed development. Therefore, there will be no significant impact on the Galway Bay Complex SAC.

With regard to wetlands and water dependant habitats and species in the surrounding areas, and having due regard to information presented by Mayes (2008), there will be no direct or indirect impacts on the turlough habitat (refer to **Section 10.3.3**) located at Derrydonnell North to the west of Athenry Golf Course or on the sinkhole, also, referred to as an enclosed depression in the Hydrology and Hydrogeology Chapter.

Karst is addressed in Chapters 11 Soils and Geology and Chapter 12 Hydrology and Hydrogeology. These chapters conclude that with the inclusion of design measures there will be no significant impact on groundwater. This supports the finding of no significant impacts on European sites based on scientific evidence available for surface water and groundwater.

### **Rich fen and flush**

This habitat does not correspond to an Annexed habitat. The development has been designed to avoid the wetland areas to the immediate northern boundary of the data centre site and there will be no impacts on the pond and surrounding wetland fen located at the northern boundary. There will be no significant impact on the sinkhole which is linked to this wetland area.

There will be moderate local impacts on the grassland surrounding the fen under the footprint of Intermediate Tower No. 10 and under the footprint of the access cables into the northeast corner of the data centre site. The area is subject to annual agricultural modification and the additional short term disturbance will not have a significant impact.

### **Dry calcareous and neutral grassland**

There will be minor short term local impacts on the semi-improved grassland to the north of the fen area.

### **Conifer Plantation & clear felled areas**

Regarding forest management, prior to the commencement of construction, Coillte will fulfil all of its obligations under its current felling licences. The developer intends to fell a number of small areas of commercial non-native trees on the site in advance of construction, and intends to apply to the Forest Service

(Department of Agriculture, Food and the Marine) for a Limited Felling Licence. The Limited Felling Licence application will include provision for the replanting of areas of the site with mixed and/or native woodland species as outlined in Section 6.4.5.1 Landscape Strategy and Proposals of the Apple Data Centre EIS.

As a prerequisite to all operations, Coillte is committed to the protection of the environment. To this end it sets out an environmental policy, which is available on its website. The scope of this policy covers the operations and activities associated with forestry, telecoms, property sales and energy businesses in relation to environmental and biodiversity policies and commitments.

There is not likely to be a significant impact on biodiversity if Coillte complies with its own environmental and nature conservation policies.

Compensatory afforestation by Coillte, for the area of coniferous forestry, removed in order to develop the proposed data centre and power supply, will have to comply with the European Communities (Forestry Consent and Assessment) Regulations, SI 558 of 2010. Under the regulations the consent of the Minister for Agriculture Food and the Marine is required for afforestation in excess of 0.1ha (approximately 0.25 acres). An EIS must be submitted for the afforestation of an area of 50ha or greater. The Minister can require a sub-threshold EIS for afforestation of a lesser area if the project is likely to have a significant effect on the environment.

The European Communities (Birds and Natural Habitats) Regulations, SI 477 of 2011, apply to consents under the Forestry Acts, such as an afforestation consent. Consequently, any compensatory afforestation must be screened to determine if it is likely to have a significant impact on the integrity of any Natura 2000 site. An appropriate assessment must be undertaken if significant effects cannot be ruled out. If the appropriate assessment determined that the afforestation is likely to have a significant impact on the integrity of a Natura 2000 site, then consent could only be given under Article 6(4) of the Habitats Directive. Thus it is not likely that the compensatory afforestation is likely to have a significant effect on the environment.

### 10.4.3 Impacts on Rare Plants

As previously mentioned, since the development of the *Vicia orobus* CMP numerous plants have been translocated under licence from the NPWS. Refer to **Appendix 10.5** for the *Vicia orobus* Annual Report for 2015.

The areas to the northeast was searched for the plant and no records were found in this area. Therefore, the CMP remains current and addresses the cable access and substation location within the data centre site.

The potential for new plants within the data centre site cannot be ruled out and is being addressed in flux within the brief of the CMP and in consultation with the NPWS as per the requirements of the CMP.

As previously mentioned, additional surveys were carried out over the Spring, Summer and Autumn periods of 2015 by Ger O'Donohoe and Dr. Roden and



additional records are included in a current status report, December 2015 which is presented as **Appendix 10.4**.

#### **10.4.4 Impacts on Fauna**

##### **Badgers**

There are no badger setts in the proposed development site and no signs of badger activity.

##### **Bats**

The clear felled areas within the site have low bat commuting potential and the conifer plantation under the footprint of the proposed substation has low bat roosting potential. There will be no loss of roosting potential for bats, and the general bat populations at the adjacent data centre site will not be impacted.

##### **Other Mammals**

There will be temporary disturbance to mammals along the data centre site boundary. The impacts would be slight and neutral.

##### **Birds**

There will be no significant impact on birds. The rearrangement of the proposed towers will not have an impact on birds as the location is not considered a migration route. As per mammals, there will be a significant proportion of suitable habitats including conifer plantation and mixed woodland retained to allow bird species to survive and for populations to increase naturally. The Hen Harrier was observed only once during fieldwork on the data centre site and is likely to have been passing through rather than nesting at the site or in the general area particularly in such proximity to a busy motorway. The site is of passing interest to Hen harriers with no previous records from this general area of County Galway. The change in use is unlikely to have an effect on the stronghold population of the Slieve Aughty Mountains in southeast County Galway.

##### **Reptiles, Amphibians and Invertebrates**

There will be no impacts on invertebrates such as frogs and insects including Marsh Fritillary.

#### **10.4.5 Cumulative Impacts**

Cumulative impacts or effects are changes in the environment that result from numerous human-induced, small-scale alterations. Cumulative impacts can be thought of as occurring through two main pathways: first, through persistent additions or losses of the same materials or resource, and second, through the compounding effects as a result of the coming together of two or more effects.

In addition to the proposed works, other relevant projects and plans in the region were considered in order to identify any possible significant in-combination or cumulative effects / impacts of the proposed development with other such plans and projects.

A review of the Galway County Council Planning webpage revealed that there are no grants of planning permission in the immediate vicinity of the site that would have in-combination effects.

A review of the Galway County Development Plan and the Athenry Local Area Plan showed that there are no plans or policies in the immediate vicinity of the site that would have in-combination effects.

The cumulative impacts of the following projects were considered.

#### **10.4.5.1 Proposed Apple Power Supply Grid Connection + Phase 1 of Apple Data Centre**

The proposed Apple Data Centre project in the main part of the overall site at Toberroe has been assessed as part of a separate EIS which determined that there would be no significant impacts after mitigation measures have been employed.

The main concern within the data centre site is the presence of the rare plant *Vicia orobus* under the footprint of the proposed development. This has been comprehensively addressed through the implementation of a Conservation Management Plan (CMP) which sets out a strategy for the immediate and longterm conservation of *V. orobus* at the site. The populations of *V. orobus* on site occur predominantly in two areas and the data centre has been designed to avoid these two main populations. With regard to footprint impacts, those plants which are threatened by development have been translocated as of December 2015. An annual report on the CMP presents an overview of the translocation process and the current status of the *V. orobus* population at the site. The report for 2015 has been provided in **Appendix 10.3**.

With regard to cumulative effects, there were no records of *V. orobus* in the area of the proposed power supply works to the northeast of the site. There were two records of *V. orobus* under the footprint of the power supply within the main data centre site area and these have been translocated under licence from the NPWS as part of the CMP. Refer to **Appendix 10.3** for the *Vicia orobus* annual Report December 2015. Consequently, the data centre and power supply projects will not have a significant impact on *V. orobus*.

It has been established in this EIS that there will be no significant impacts on other habitats within the data centre site. The results of the ecology assessment (also carried out by Moore Group) for the EIS for the proposed data centre, show that there will be no significant effects on habitats as a result of the proposed development. The habitats which will be impacted by the Power Supply project are not sensitive and are common in the surrounding area. There will be no significant cumulative impacts on habitats between the Phase 1 data centre development and the Apple Power Supply project during construction and operation.

Similarly, the ecology assessments for both projects show that there will be no significant cumulative impacts on fauna during construction and operation. There will be temporary disturbance to mammals along the data centre site boundary. The impacts would be slight and neutral. The phased development will facilitate

the movement of fauna within the site and there will be no significant cumulative impacts on fauna.

The Reports for Screening for AA, for the both the Data Centre development and the proposed power supply project, have concluded that there will be no significant cumulative impacts on European sites.

#### **10.4.5.2 Phase 1 + Apple Power Supply Grid Connection + 7 Data Halls + M17/M18 + M6**

The potential full development of the proposed Apple data centre will be on a phased basis and includes the potential construction of an additional seven data halls and associated infrastructure (as masterplanned). The masterplan for the full build out of the data centre is shown in **Figure 3.1**. There are *V. orobus* records under the footprint of these potential additional halls and associated infrastructure and their long term protection has been considered in the *V. orobus* CMP. There will be no significant negative cumulative impact on *V. orobus* populations in the data centre site due to the construction of the data centre phase 1 and the seven additional data halls and associated infrastructure.

As the phased development continues at the site, the landscape plan will be implemented which includes details of forest management and development of native woodland. The phased development will facilitate the movement of fauna within the site and there will be no significant cumulative impacts on fauna.

It is likely that the management of forest habitats from conifer plantation to native broadleaved woodland along with the management of *V. orobus* conservation areas will result in a more natural mosaic of habitats (as opposed to dense conifer planation) and an overall increase in biodiversity which can be seen as a positive cumulative impact.

A review of the Galway County Council Planning webpage revealed that there are no grants of planning permission in the immediate vicinity of the site that would have in-combination effects. However, the construction of the M17/M18 Gort to Galway motorway and the associated Rathmorrissey Interchange in the adjacent townland of Rathmorrissey, approximately 300m to the east of the data centre site, is under way. An EIS was produced for the motorway scheme in 2006 which was approved.

The Reports for Screening for AA, for the both the Data Centre development and the proposed power supply project, have considered in-combination effects and predicted that due to limited hydrogeological links with European sites in this area of east Galway, that there will be no significant cumulative impacts on these sites.

The M6 to the north of the data centre site is complete and operational, and apart from the interchange linking the M17/M18, considered under that Scheme, there are no further permitted plans to develop the M6 in this area (c.f. Galway County Council). No significant cumulative impacts on biodiversity are likely during the construction of the M17/M18 the data centre development, the power supply project and the seven additional data halls. No significant cumulative impacts on biodiversity are likely during the operational phase between of the M6, the

M17/M18 and the data centre development, the power supply project and the seven additional data halls.

Extending the site services to future data halls will comply with the requirements of the *V. orobus* CMP. Considerations for flora and fauna will follow that of the data centre development and there will be no cumulative impacts.

### 10.4.5.3 Summary

If the policies and objectives of the Galway County Development Plan and the Athenry Local Area Plan are enforced through planning regulation, then there would be no significant in-combination or cumulative impacts between other plans and projects and the subject project.

The *V. orobus* CMP is ongoing and will ensure the protection and longterm conservation of populations within the development areas.

The scientific evidence collated and assessed in the Soils and Geology Chapter and the Hydrology and Hydrogeology Chapter supports the determination that there will be no significant impact on Annexed habitats or on sites containing Annexed habitats.

As previously mentioned, compensatory afforestation by Coillte, for the area of coniferous forestry, removed in order to develop the proposed data centre and power supply, will have to comply with the European Communities (Forestry Consent and Assessment) Regulations, SI 558 of 2010. Thus it is not likely that the compensatory afforestation is likely to have a significant effect on the environment.

There will be no significant cumulative impact on the rare plant *V. orobus*.

There will be no significant cumulative impacts on ecology or biodiversity.

The Reports for Screening for AA, for the both the Data Centre development and the proposed power supply project, have concluded that there will be no significant cumulative impacts on European sites.

## 10.5 Mitigation Measures

Site specific avoidance measures are proposed in **Chapter 4 Construction Activities** for the protection of groundwater and surface water, (refer to **Section 4.12**). As previously mentioned, the actions required under the **Conservation Management Plan** for the longterm protection of the rare plant *Vicia orobus* have been considered with regard to the present assessment.

## 10.6 Residual Impacts

It is considered that with the implementation of the proposed construction mitigation measures outlined in **Chapter 4**, there will be no residual significant negative impacts on ecology or biodiversity. There will be no significant cumulative impacts as a result of the proposed development. There will be no

significant impacts on the integrity of European Sites considered in the assessment.

## 10.7 References

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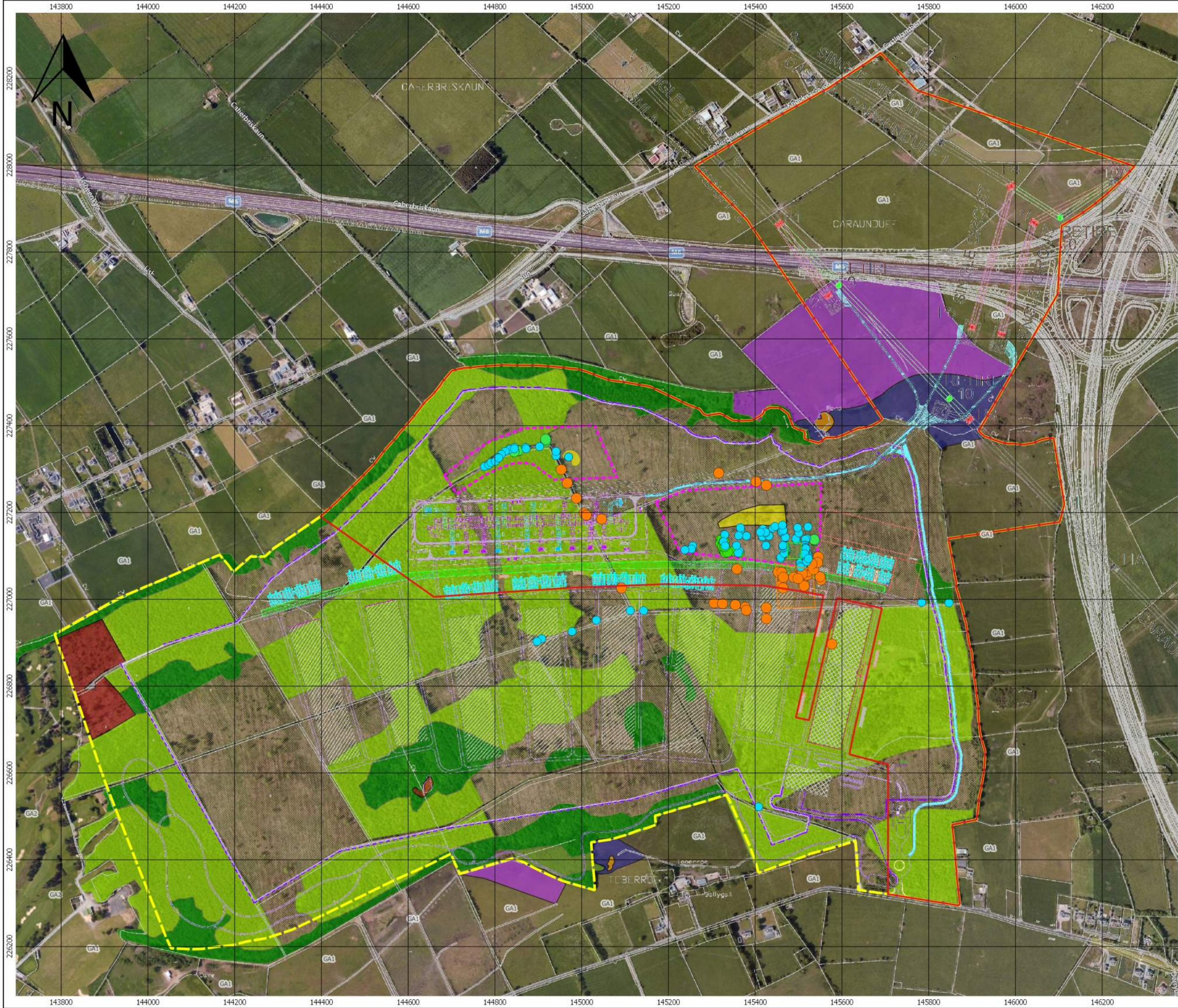
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**Legend**

— SID Application Site Boundary  
— Overall Site Boundary

**HABITATS**

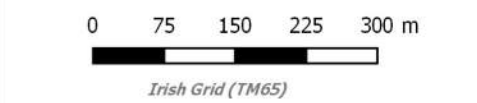
- ER2 Exposed calcareous rock
- FL4 Mesotrophic lake
- GS1 Dry calcareous and neutral grassland
- HH2 Dry calcareous heath
- PF1 Rich fen and flush
- WD2 Mixed broadleaved conifer woodland
- WD4 Conifer plantation
- WN6 Wet willow alder ash woodland
- WS1 Scrub
- WS5 Recently felled woodland

**VICIA OROBUS**

- ConservationManagementAreas
- V. orobus locations 2015

**Relocated V. orobus plants**

- Moved from this location in 2015
- Moved to this location in 2015
- Cluster A
- Cluster A donar location



Rev.	Notes / Changes	By

**Project:**  
15095 Apple Data Centre Power Supply

**Client:**  
Arup for Apple

**Project Manager:**  
Ger O'Donohoe

**Prepared by:** N. Malcolm    **Scale:** 1:8,000 @ A3    **Date:** 03/02/2016

**Drawing:**  
Figure 10.2 Habitats, Vicia orobus locations and Conservation Management Plan areas

Rev: A



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