

M7 NAAS TO NEWBRIDGE BY-PASS UPGRADE SCHEME



Habitats Directive Assessment (HDA) SCREENING REPORT

December 2013

M7 Naas to Newbridge By-Pass Upgrade Scheme Habitats Directive Assessment – Screening Report

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1. INTRODUCTION

1.1 Introduction

Kildare County Council has commissioned Roughan & O'Donovan – AECOM Alliance Consulting Engineers to prepare an Environmental Impact Statement of the M7 Naas to Newbridge Bypass Upgrade Scheme which proposes the widening of the M7 between Greatconnell and Johnstown in County Kildare and the replacement of the Newhall Interchange with an enhanced interchange with the R445.

This Habitats Directive Assessment - Screening Report has been prepared by Andrew Warwick of Roughan & O'Donovan's Environment Section to determine any likely significant effects of the proposed M7 Naas to Newbridge Bypass Upgrade Scheme on sites with European conservation designations (i.e. Natura 2000 sites). The purpose of this assessment is to determine the appropriateness, or otherwise, of the proposed scheme in the context of the conservation status of such sites.

1.2 The Habitats Directive: Requirement for Assessment under Article 6

The Directive 92/43/EEC on the conservation of Natural Habitats and Wild Flora and Fauna – the 'Habitats Directive' provides legal protection for habitats and species of European importance. Article 2 of the Habitats Directive requires the maintenance or restoration of habitats and species of interest to the EU in a favourable condition.

Article 6(3) establishes the requirement for Appropriate Assessment:

'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public'

The Habitats Directive is transposed in Ireland by the European Communities (Birds and Natural Habitats) Regulations, 2011 (consolidating the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in recent CJEU Judgements (hereafter referred to as the Habitats Regulations)) and the Planning and Development (Amendment) Act, 2010.

1.3 The Aim of this Report

This Habitats Directive Assessment - Screening Report has been prepared in accordance with current guidance. It provides the information required in order to establish whether or not the proposed development, individually or in combination with other plans or projects, would be likely to have a significant effect on any Natura 2000 sites in view of their conservation objectives and specifically on the habitats and species for which the Natura 2000 sites have been designated.

By undertaking the assessment in a step by step manner in relation to the habitats and species of the Natura 2000 sites, this report seeks to inform the screening process required as the first stage of the process pursuant to Article 6.3 of the EU Habitats Directive.

2. THE APPROPRIATE ASSESSMENT PROCESS

The European Commission Methodological guidance on the provision of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC recommends a four stage approach in carrying out an Appropriate Assessment as follows:

Stage 1 – Screening:

Determines whether a plan or project, either alone or in combination with other plans or projects, is likely to have a significant effect upon a Natura 2000 site.

If the screening process identifies effects to be significant, potentially significant or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2. Screening is undertaken without the inclusion of mitigation, unless potential impacts clearly can be avoided through the modification or redesign of the plan or project, in which case the screening process is repeated on the altered plan or project.

Stage 2 – Appropriate Assessment:

Considers the impact on the integrity of the Natura 2000 sites of the project or plan either alone or in combination with other plans or projects with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, it assesses the potential mitigation of those impacts.

Stage 3 – Assessment of Alternative Solutions:

Examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 sites.

Stage 4 – Assessment where no Alternative Solutions Exist and where Adverse Impacts Remain:

Assesses compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the plan or project should proceed.

Each stage determines whether the next stage in the process is required, If for example, it is concluded that at the end of Stage 1 there will be no significant impacts on the Natura 2000 sites, there is no requirement to proceed to Stage 2.

3. GUIDANCE AND REPORT FORMAT

3.1 Guidance

Article 6(3) of the EU Habitats Directive (92/43/EEC) defines the requirement for Appropriate Assessment of certain plans and projects. In order to inform the requirements of this Screening Report reference has been made to the following guidance documents:

- *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities.* (Department of Environment, Heritage and Local Government, 2010 revision);
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.* Circular NPWS 1/10 & PSSP 2/10;

- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC;*
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (EC Environment Directorate-General, 2000); Guidance Document on Article 6(4) of the Habitats Directive 92/43/EEC;*
- *Clarification of the Concepts of Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence. Opinion of the European Commission (European Commission, January 2007).'*

3.2 Report Format

The 2001 EC Guidance document '*Assessment of Plans and Projects significantly affecting Natura 2000 Sites*' highlights that Stage One: Screening can be comprised of four steps, as follows:

1. Determine whether the plan or project is directly connected with or necessary to the management of the site;
The M7 Naas to Newbridge By-Pass Upgrade Scheme is not directly connected with or necessary to the management of any Natura 2000 site.
2. Describing the plan or project and the description and characterisation of other plans and projects that in combination have the potential for having significant effects on the Natura 2000 site;
3. Identifying the potential effects on the Natura 2000 site;
4. Assessing the significance of any effects on the Natura 2000 site.

The Department of Environment, Heritage & Local Government's publication '*Appropriate Assessment of Plans and Projects in Ireland: Guidance for Local Authorities*' (revision 10/02/10) states that Screening for Appropriate Assessment includes the following steps:

1. Description of plan or project, and local site or plan area characteristics;
2. Identification of relevant Natura 2000 sites, and compilation of information on their qualifying interests and conservation objectives;
3. Assessment of likely effects – direct, indirect and cumulative – undertaken on the basis of available information as a desk study or field survey or primary research as necessary;
4. Screening statement with conclusions.

In complying with the obligations under Article 6(3) and to be consistent with the Guidance for Planning Authorities, this report has been structured as follows:

- Description of the Plan/Project;
- Identification of Natura 2000 sites, and the associated Qualifying Interest features and Conservation Objectives, which may be potentially affected;
- Receiving Environment;
- Identification and Assessment of Likely Effects;
- Screening Statement and Conclusion.

4. DESCRIPTION OF THE PROJECT

The section of the M7/N7 under consideration commences at Junction 11, Great Connell, where the M9 merges with the M7 and extends to Junction 8, Johnstown (refer to **Figure 1, Appendix 2**).

The proposed scheme involves widening the motorway from two lanes to three lanes between the merge of the M7 and M9 and the commencement of the dual three lane all purpose road at Junction 9 Maudlins. Throughout the full length of the scheme all of the widening will be constructed within the existing median (refer to **Plate 4.1** below).

Upgrading of the road drainage will require work within the existing verges either side of the road and includes a number of additional attenuation ponds.



Plate 4.1: Existing two lane M7 with wide grass median

The scheme also includes closure of the existing motorway slip roads at Junction 10 (Newhall Interchange) and construction of a new upgraded interchange with the R445 Naas to Newbridge road where it crosses the M7 some 700m south of the existing interchange. The new Junction 10 will involve the construction of two new roundabouts on the R445, one either side of the existing motorway overbridge. These roundabouts will be connected to the motorway with both eastbound and westbound on and off slip roads. The roundabout on the east side of the motorway will include the provision of free flow slip roads from the M7 eastbound off slip to the R445 westbound and from the R445 to the M7 eastbound on slip.

In addition, the M7 westbound motorway on slip road, which also acts as a local access, will be locally realigned to the south of the proposed new interchange. A proposed new roundabout on this local road will be provided to maintain access to the surrounding lands.

The layout of the proposed interchange and local road realignment is presented on **Figure 2, Appendix 2**.

The construction of the eastern roundabout will require an 86m extension to an existing 74m watercourse culvert under the R445. Following consultation with Inland Fisheries Ireland a fish pass arrangement is also included. A series of interconnected pools will be provided from the upstream side of the proposed culvert to a new 1.5m x 1.5m box culvert to be provided under the existing R445. The pools will provide a permanent water depth of 500mm in order to facilitate fish passage.

5. NATURA 2000 SITES

5.1 Identifying the Natura 2000 Sites to be Considered in the Assessment

Section 3.2.3 of the DoEHLG (2010) Guidance for Planning Authorities states that the approach to screening can be different for different plans and projects and will depend on the scale and the likely effects of the project.

The guidance states that the assessment should include:

- Any Natura 2000 site within or adjacent to the plan or project area;
- Any Natura 2000 site within the potential zone of impact of the plan or project. For plans a distance of 15km is recommended; however for projects the distance must be evaluated on a case by case basis with reference to the nature, size and location of the projects, and the sensitivities of the ecological receptors, and the potential for in combination effects.; and
- Natura 2000 sites that are more than 15km from the plan or project area depending on the likely impacts of the plan or project, and the sensitivities of the ecological receptors, bearing in mind the precautionary principle. In the case of sites with water dependent habitats or species, and a plan or project that could affect water quality or quantity, for example, it may be necessary to consider the upstream and/or downstream catchment.

For a construction project of this nature and scale the likely zone of potential direct impact is considered to be the zone immediately around the construction site (a radius of 250m is considered reasonable in this instance). Outside of this zone of potential direct impact there must be a source – pathway – receptor link connecting the project with the Natura 2000 site for an indirect impact to occur.

5.2 Favourable Conservation Status

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site. The habitats and species for

which an SAC or SPA has been selected are generally referred to as the Qualifying Interests of that Site.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing; and
- the specific structure and functions which are necessary for its long term maintenance exist; and
- are likely to continue to exist for the foreseeable future; and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats; and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long term basis.

5.3 Natura 2000 Sites

A review of the National Parks and Wildlife Service database has confirmed that there are no Natura 2000 sites within the potential zone of direct impact.

The following Natura 2000 sites are within 15km of the proposed scheme. The proximity to the site is given from the closest point to the scheme.

Table 1: Natura 2000 Sites within 15km

Site	Code	Approx. Distance
Mouds Bog SAC	002331	5km west
Pollardstown Fen SAC	000396	5km west
Red Bog, Kildare SAC	000397	8.5km south east
Ballynafagh Bog SAC	000391	9km north west
Ballynafagh Lake SAC	001387	10km north west
Poulaphouca Reservoir SPA	004063	11km south east

The location of these Natura 2000 sites is presented on **Plate 5.1**, below and in relation to the scheme drawings on **Figure 3, Appendix 2**. The NPWS Site Synopses for same are available in **Appendix 1**.

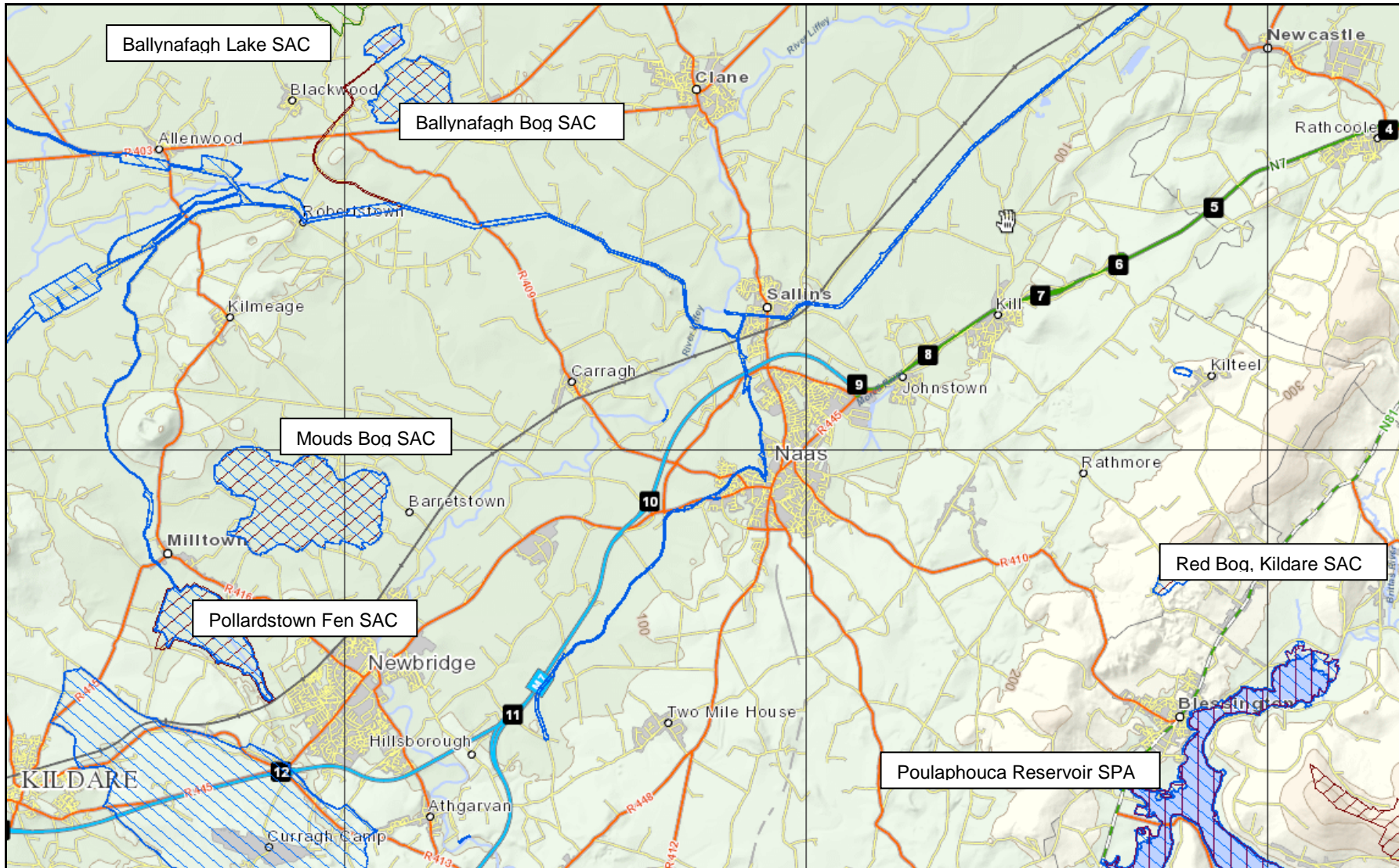


Plate 5.1: Natura 2000 Sites within 15km of proposed scheme (source www.npws.ie)

5.4 Characteristics and Conservation Objectives of the Natura 2000 Sites

Mouds Bog SAC

Mouds Bog SAC is located 3km north west of Newbridge in County Kildare. The site is a candidate Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats that are listed on Annex I of the E.U. Habitats Directive.

Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (*Sphagnum* spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, Sphagnum lawns, flushes and soaks.

Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration.

The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (*Rhynchospora alba*) and/or Brown Beak-sedge (*R. fusca*), and at least some of the following associated species, Bog Asphodel (*Narthecium ossifragum*), Sundews (*Drosera* spp.), Deergrass (*Scirpus cespitosus*), Carnation Sedge (*Carex panicea*).

Principal threats include peat cutting, burning and agricultural reclamation.

Conservation Objectives:

Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

- Active raised bogs [7110];
- Degraded raised bogs still capable of natural regeneration [7120]; and
- Depressions on peat substrates of the Rhynchosporion [7150].

Pollardstown Fen SAC

Pollardstown Fen is situated on the northern margin of the Curragh of Kildare, approximately 3km west-north-west of Newbridge. It lies in a shallow depression, running in a north-west/south-east direction. About 40 springs provide a continuous supply of water to the fen. These rise chiefly at its margins, along distinct seepage areas of mineral ground above the fen level. The continual inflow of calcium-rich water from the Curragh, and from the limestone ground to the north, creates waterlogged conditions which lead to peat formation.

Pollardstown Fen is unusual in Ireland as it is an extensive area of primary and secondary fen peat, lacking scrub vegetation on its surface. The fen vegetation is generally from 0.5 - 1.5 m high and consists mainly of Saw Sedge (*Cladium mariscus*), Reed (*Phragmites australis*), Blunt-flowered Rush (*Juncus subnodulosus*) and a variety of Sedges (*Carex* spp.). The vegetation is quite varied and species-rich with numerous well-defined plant communities and several rare or scarce species, including Narrow-leaved Marsh Orchid (*Dactylorhiza traunsteineri*), Fly Orchid (*Ophrys insectifera*) and Broad-leaved Bog Cotton (*Eriophorum latifolium*). Of particular interest is the occurrence of the moss, *Homalothecium nitens*- a boreal relict species which is rare in Ireland. Species and communities characteristic of more nutrient-rich conditions occur on the fen margins where the water first emerges

from the ground, while the central fen area is dominated by more uniform and less nutrient demanding vegetation types.

Conservation Objectives:

Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

- *Vertigo geyeri* [1013];
- *Vertigo angustior* [1014];
- *Vertigo moulinsiana* [1016];
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davalliana* [7210];
- Petrifying springs with tufa formation (Cratoneurion) [7220];
- Alkaline fens [7230].

Red Bog, Kildare SAC

Red Bog, Kildare is located 3 km north of the village of Blessington in east Co. Kildare, close to the boundary with Co. Wicklow. It comprises a wetland complex of lake, fen and bog situated in a hollow between ridges of glacially-deposited material and underlain by rocks of Ordovician age.

The site is a candidate SAC selected for transition mire, a habitat listed on Annex I of the E.U. Habitats Directive.

Conservation Objectives:

Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

- Transition mires and quaking bogs (7140).

Ballynafagh Bog SAC

This site is a raised bog situated about 1 km west of Prosperous in County Kildare. The site supports the E.U. Habitats Directive Annex I habitats active raised bog, degraded raised bog and Rhynchosporion vegetation. An estimated 46% of the site consists of intact raised bog habitat. In the wettest area towards the centre, a system of tear pools occurs, grown over with Bog Mosses (*Sphagnum capillifolium* and *S. magellanicum*). There is a small pool-and-hummock system, with pools colonised by another species of Bog Moss (*Sphagnum cuspidatum*). White Beak-sedge (*Rhynchospora alba*), Cottongrasses (*Eriophorum* spp.) and the insectivorous Great Sundew (*Drosera anglica*) are abundant in wet channels. Bog Rosemary (*Andromeda polifolia*) and Cranberry (*Vaccinium oxycoccos*) are found on the hummocks.

A large portion of the site contains old cutaway bog colonised by Rushes (*Juncus* spp.) and Common Cottongrass (*Eriophorum angustifolium*), with Downy Birch (*Betula pubescens*) forming patches of scrub/woodland.

Conservation Objectives:

Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

- Active raised bogs [7110];
- Degraded raised bogs still capable of natural regeneration [7120];

- Depressions on peat substrates of the Rhynchosporion [7150]

Ballynafagh Lake SAC

Ballynafagh Lake is located about 2 km north-west of Prosperous in Co. Kildare. It is a shallow alkaline lake with patches of emergent vegetation in the middle as well as around the shore. Submerged plants include Starwort (*Callitriche* spp.) and Bladderwort (*Utricularia minor*), with Duckweed (*Lemna minor*) and the liverwort *Riccocarpus natans* occurring on the surface.

Alkaline fen vegetation occurs at the lake edge, notably a plant community dominated by Blunt-flowered Rush (*Juncus subnodulosus*) and Black-bog Rush (*Schoenus nigricans*), with frequent Sedges (*Carex lepidocarpa*, *C. rostrata*). Other species in this area include Marsh Marigold (*Caltha palustris*), Red Rattle (*Pedicularis palustris*), Arrow Grass (*Triglochin palustre*), Water Mint (*Mentha aquatica*) and Bulrush (*Typha latifolia*). Extensive stands of Reed (*Phragmites australis*), Bulrush and Bottle Sedge (*Carex rostrata*) occur around the open water. A stand of Great Fen-sedge (*Cladium mariscus*) occurs in the western corner.

The lake is surrounded by acid grassland, heath and bog.

Conservation Objectives:

Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

- *Vertigo moulinsiana* [1016];
- Marsh fritillary (*Euphydryas aurinia*) [1065];
- Alkaline fens [7230]

Poulaphouca Reservoir SPA

Poulaphouca Reservoir SPA, located in the western foothills of the Wicklow Mountains, was created in 1944 by damming of the River Liffey for the purpose of generating electricity from hydropower. The reservoir covers an area of approximately 20 square kilometres and is the largest inland water body in the mid-east and south-east regions.

Poulaphouca Reservoir is of international importance for its Greylag Goose population, which is one of the largest in the country. The site provides the main roost for the birds, with feeding occurring mostly on improved grassland outside of the site.

A range of other waterfowl species occur in relatively low numbers, including Whooper Swan, Wigeon, Teal, Mallard, Goldeneye, Cormorant, Great Crested Grebe, Curlew and Mute Swan. The site is also used by Grey Heron.

The reservoir attracts roosting gulls during winter, most notably a large population of Lesser Black-backed Gull, which in Ireland is rare in winter away from the south coast.

Conservation Objectives:

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

- Greylag Goose (*Anser anser*) [A043];

- Lesser Black-backed Gull (*Larus fuscus*) [A183]

6. RECEIVING ENVIRONMENT

An Environmental Impact Statement (EIS) has been prepared for the M7 Naas to Newbridge Bypass Upgrade Scheme. The following provides an overview of the environmental assessments undertaken which are pertinent to this Habitats Directive Assessment – Screening Report.

Ecological Impact Assessment

Chapter 7.2 of the EIS provides an Ecological Impact Assessment for the proposed M7 Naas to Newbridge Bypass Upgrade scheme. The habitats which will be directly impacted are the grassland and hedgerow habitats within the motorway central median and the immature woodland planting along the R445. These habitats do not possess nature conservation value.

There are a number of watercourses already culverted under the existing M7 and R445 which support salmonids, otter and crayfish. None of these watercourses nor the River Liffey into which they flow are designated as SAC/SPA (Natura 2000 sites).

Air Quality Impact Assessment

This assessment (Chapter 7.4 of the EIS) includes an examination of potential air quality impacts on nearby sensitive ecosystems.

The NRA air quality assessment guidelines state that as the potential impact of a scheme is limited to a local level, detailed consideration need only be given to roads where there is a significant change to traffic flows and the designated site lies within 200m of the road centre line. The nearest Natura 2000 site (Mouds Bog SAC) is over 5km away.

The assessment does examine the potential impact on the Grand Canal proposed Natural Heritage Area, which is crossed by the scheme on an existing bridge. It concludes that the proposed scheme will have a negligible effect on the Grand Canal.

Hydrogeological Impact Assessment

The hydrogeology assessment (Chapter 7.5 of the EIS) concludes that there will be no impact on ground water levels, ground water flow or ground water supply wells as a result of the construction or operation of the scheme. At the operational stage it is considered that the scheme will have a slight beneficial impact on ground water quality and aquifer vulnerability as a consequence of the increased level of protection afforded the ground water by the proposed drainage measures.

The assessment also examines the potential impact on groundwater dependent ecosystems. It notes that no groundwater dependent ecosystems exist within 250m of the proposed scheme. The closest groundwater dependent ecosystem is Pollardstown Fen which is located approximately 5km northwest of the southern end of the proposed scheme. The hydrogeological assessment confirms that the scheme is not located within the Pollardstown Fen groundwater catchment and will therefore have no impact on this SAC.

Hydrology Impact Assessment

The watercourses which are crossed by the scheme are all within the catchment of the River Liffey. None of these watercourses nor the River Liffey are designated as SAC or SPA.

The assessment undertaken identifies that there is a risk of pollution, primarily silt, entering watercourses and impacting water quality during the construction phase. Mitigation measures, including the requirement for containment of suspended solids on site, are included to minimise and reduce this risk.

The principles of SuDS have been applied to the operational drainage design to improve the quality of runoff prior to discharge. In the verges where filter drains are used for road drainage, these will prevent the discharge of sediment and suspended solids from the road to the watercourse. In the median where linear drainage channels are used, the inspection chambers will contain silt traps to collect the sediment. Water quality improvement will be provided through the provision of oil and petrol interceptors and the provision of additional attenuation ponds.

The assessment concludes that at operation the scheme will have a beneficial impact on the local hydrology due to the reduced likelihood of a pollution event occurring as a result of the measures detailed above.

7. IDENTIFICATION AND ASSESSMENT OF POTENTIAL EFFECTS

7.1 Impact Categories

In practice and as outlined in the EU document '*Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*' and the national guidance document '*Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities*', impacts that could potentially occur through the construction and operation of a proposed plan or project can be categorised under a number of headings:

- Impact on Annex 1 habitat;
- Loss / reduction of habitat area;
- Direct or indirect damage to the physical quality of the environment (eg water quality, hydrology and water flow alteration, soil compaction, etc.);
- Causing serious or ongoing disturbance to species or habitats for which the site is selected (eg noise, illumination, human activity);
- Causing direct or indirect damage to the size, characteristics or reproductive ability of populations of Natura 2000 site;
- Fragmentation of habitats or populations of species due to the location of development.

The impact type which can occur is dependent on the attributes of the Qualifying Interest (habitats and species) for which the Natura 2000 site is designated.

7.2 Identification of Potential Effects

7.2.1 Mouds Bog SAC

Mouds Bog is located over 5km west of the proposed scheme. This site is selected for three peatland qualifying habitats – active raised bog; degraded raised bogs still capable of natural regeneration; and Depressions on peat substrates of the Rhynchosporion. Each of these habitats is dependent on the maintenance of the existing hydrological conditions.

At 5km distance there is no possibility of direct impact on this site. In addition, there is no hydrological connection linking the SAC to the proposed scheme; the proposed scheme will therefore have no impact of any description on the existing hydrological conditions occurring at this peatland site. As such it can be confidently concluded that the proposed scheme will have no significant effect on Mouds Bog SAC. It is therefore screened out and does not require Stage 2 Appropriate Assessment.

7.2.2 Pollardstown Fen SAC

Pollardstown Fen is also located over 5km west of the proposed scheme. This fen site is a groundwater dependent ecosystem which is selected for three habitats and three species of snail. Each of these qualifying interests is dependent on the groundwater springs which feed this site.

At 5km distance there is no possibility of direct impact on this site. In addition, there is no hydrological or hydrogeological (groundwater) connection linking this SAC to the proposed scheme. The proposed scheme will therefore have no impact on the existing conditions present on this site. As such it can be confidently concluded that

the proposed scheme will have no significant effect on Pollardstown Fen SAC. It is therefore screened out and does not require Stage 2 Appropriate Assessment.

7.2.3 Red Bog, Kildare SAC

Red Bog, Kildare is located over 8.5km south east of the proposed scheme. It is a wetland complex which is selected for the Annex 1 habitat Transition mires and quaking bogs. This habitat is dependent on the maintenance of the hydrological conditions present on this site.

At 8.5km distance there is no possibility of direct impact on this site. In addition, there is no hydrological connection linking this SAC to the proposed scheme. The proposed scheme will therefore have no impact on the existing conditions present on this site. As such it can be confidently concluded that the proposed scheme will have no significant effect on Red Bog, Kildare SAC. It is therefore screened out and does not require Stage 2 Appropriate Assessment.

7.2.4 Ballynafagh Bog SAC

This site is a raised bog situated about 9 km north west of the proposed scheme. The site supports the E.U. Habitats Directive Annex I habitats active raised bog, degraded raised bog and *Rhynchosporion* vegetation. Each of these habitats is dependent on the maintenance of the hydrological regime present on the site.

At 9km distance there is no possibility of direct impact on this site. In addition, there is no hydrological connection linking this SAC to the proposed scheme. The proposed scheme will therefore have no impact on the existing conditions present on this site. As such it can be confidently concluded that the proposed scheme will have no significant effect on Ballynafagh Bog SAC. It is therefore screened out and does not require Stage 2 Appropriate Assessment.

7.2.5 Ballynafagh Lake SAC

Ballynafagh Lake is located about 10 km north-west of the proposed scheme. It is selected for the species *Vertigo moulinsiana*, Marsh Fritillary and the habitat alkaline fen. The site is centred on a shallow alkaline lake. Both the fen habitat and the snail *Vertigo moulinsiana* are dependent on the natural hydrological regime present at the site. Similarly the Marsh Fritillary butterfly requires the maintenance of the surrounding habitats – acid grassland, heath and bog which are dependent on the maintenance of the local hydrological conditions; and also local site management to maintain the food plant which this butterfly requires (Devils-bit Scabious).

At 10km distance there is no possibility of direct impact on this site. In addition, there is no hydrological connection linking this SAC to the proposed scheme and the proposed scheme has no impact on the management of the site. The proposed scheme will therefore have no impact of any nature on this site. As such it can be confidently concluded that the proposed scheme will have no significant effect on Ballynafagh Lake SAC. It is therefore screened out and does not require Stage 2 Appropriate Assessment.

7.2.6 Poulaphouca Reservoir SPA

Poulaphouca Reservoir SPA occurs 11km to the south east of the site (or 20+km upstream – following the River Liffey). The site is selected for the overwintering populations of Greylag Goose and Lesser Black-backed gull which the reservoir supports. The importance of the site to both these populations is as an overwintering roost site.

The separation distance ensures that there will be no direct impact or disturbance of the SPA bird populations. The proposed scheme will have no impact on the water levels, water quality or hydrological regime within the reservoir or the River Liffey. It is therefore concluded that the proposed scheme will have no impact of any nature on this SPA. As such it can be confidently concluded that the proposed scheme will have no significant effect on Poulaphouca Reservoir SPA. It is therefore screened out and does not require Stage 2 Appropriate Assessment.

7.2.7 Natura 2000 Sites beyond 15km

There are a number of sites which occur beyond 15km from the site. For example the River Barrow and River Nore SAC occurs approximately 20km to the west and Glenasmole Valley SAC is approximately 18km to the east. However there is no hydrological or other source-receptor pathway which could in anyway link these sites with the proposed scheme and as such it is not feasible that there could be any impact of any nature on them.

In addition the Rye Water Valley / Carton SAC is approximately 20km north east. This SAC is selected for the two snail species *Vertigo angustior* and *Vertigo moulinsiana* and the habitat petrifying springs. The proposed scheme would have to impact the existing hydrological and hydrogeological regime of the Rye Water Valley to have any effect on this SAC. The proposed scheme will clearly not have this impact and hence it is concluded that there can be no effect on this SAC.

The closest site with a source-receptor pathway directly linking the proposed scheme and the Natura 2000 site is the Dublin Bay SAC/SPA complex which is present over 50km downstream (River Liffey) from the scheme. It is not feasible, with the distances and dilution factors involved, that the proposed scheme could have any effect on the coastal habitats and bird populations of the Dublin Bay Natura 2000 sites.

7.3 Consideration of Potential In-Combination Effects

The Habitats Directive requires that potential cumulative impacts on Natura 2000 sites be assessed in combination with other significant projects in the vicinity.

The M7 Osberstown Interchange and R407 Sallins Bypass is also currently under consideration and an Environmental Impact Statement and Habitats Directive Screening Report have been prepared for this project. The Screening Report for the M7 Osberstown Interchange and R407 Sallins Bypass confidently concludes that there will be no significant effect on any Natura 2000 as a consequence of the construction or operation of that scheme and it is screened out at Stage 1 of the Appropriate Assessment process.

Similarly this Screening assessment has returned a confident conclusion that the proposed M7 Naas to Newbridge By-pass Upgrade Scheme will have no effect on any Natura 2000 site. As neither project is considered as possessing the potential to have a significant effect on any Natura 2000 site it is concluded that that there is no potential for in-combination effects occurring.

8. SCREENING STATEMENT AND CONCLUSION

The first stage of the Appropriate Assessment process, screening, has been completed in compliance with the relevant European Commission and national guidelines.

The potential impacts during the construction and operation of the proposed M7 Naas to Newbridge Bypass Upgrade Scheme have been considered in the context of the Natura 2000 sites, their Qualifying Interests and Conservation Objectives.

The evaluation undertaken has identified that there will be no impact on any Natura 2000 Site, either alone or in-combination with other plans or projects.

Therefore, as a result of the assessment carried out, it is considered that the conservation objectives for the Natura 2000 sites will not be compromised by the proposed development nor will the proposed scheme have any likely significant effect on any Natura 2000 site or the habitats or species for which they been designated. As such it is concluded that the proposed scheme can be screened out at Stage 1 of the Appropriate Assessment process.

9. REFERENCES

DoEHLG (2010) *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities* (Department of Environment, Heritage and Local Government, Rev Feb 2010).

European Commission (2001) *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission Environment Directorate-General).

European Commission (2000) *Managing Natura 2000 sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (EC Environment Directorate-General, 2000); hereinafter referred to as "MN2000".

NPWS Circular NPW 1/10 & PSSP 2/10 *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities*. (Department of Environment, Heritage and Local Government, March 2010).

NPWS (2008) *Status of EU Protected Habitats and Species in Ireland*

APPENDIX 1

NPWS Site Synopses

SITE SYNOPSIS

SITE NAME: MOUDS BOG

SITE CODE: 002331

Mouds Bog is located about 3 km north-west of Newbridge in Co. Kildare, close to the Hill of Allen, and includes amongst others, the townlands of Grangehiggin, Barretstown and Hawkfield. The site comprises a raised bog that includes both areas of high bog and cutover. Much of the margins of the site are bounded by trackways.

The site is a candidate Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats that are listed on Annex I of the E.U. Habitats Directive. Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (*Sphagnum* spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, *Sphagnum* lawns, flushes and soaks. Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (*Rhynchospora alba*) and/or Brown Beak-sedge (*R. fusca*), and at least some of the following associated species, Bog Asphodel (*Narthecium ossifragum*), Sundews (*Drosera* spp.), Deergrass (*Scirpus cespitosus*), Carnation Sedge (*Carex panicea*).

The site consists of two basins of high bog separated by a central ridge. Otherwise the bog is flat with slopes at its margins. An area of wet quaking bog with well-developed pools occurs either side of the central ridge. The western high bog supports a number of small flush areas along with a wet quaking soak with scattered Downy Birch (*Betula pubescens*). The margins have extensive areas of cutover, especially to the west.

This is an example of a Midland Raised Bog at the eastern extremity of its current range with typical species including Ling Heather (*Calluna vulgaris*) along with Bog-rosemary (*Andromeda polifolia*) and Cranberry (*Vaccinium oxycoccos*). The central high bog supports wet flat quaking areas on both sides of the mineral ridge with frequent small pools supporting bog mosses (*Sphagnum cuspidatum*, *S. magellanicum*, *S. capillifolium*) and Greater Sundew (*Drosera anglica*). Abundant Ling Heather dominates the drier central ridge. The three flush areas along the southern perimeter of the east and west dome support a hummock/hollow system with Ling Heather, Bog-myrtle (*Myrica gale*) and in places Crowberry (*Empetrum nigrum*) - the wet hollows support a variety of bog mosses which include *S. tenellum*. A wet quaking soak to the south supports abundant bog moss (*S. cuspidatum*) and tall Common Cottongrass (*Eriophorum angustifolium*). Cutover areas to the north-east support Purple Moor-grass (*Molinia caerulea*), Soft Rush (*Juncus effusus*) with encroaching Downy Birch and Gorse (*Ulex europaeus*) in places.

Red Grouse, a Red listed species and one that is becoming increasingly rare in Ireland, has been recorded on this site. Other birds noted on the site include Skylark, Meadow Pipit, Curlew and Kestrel.

Current landuse on the site consists of peat-cutting, with extensive active industrial peat moss production in the western section of the remaining high bog. Domestic turf cutting is widely practised along the southern margin of the bog, in the south-west corner and in the centre of the northern edge. Apart from the western cutover margin, the high bog is not being actively drained. Some small areas of the cutover have been reclaimed for agriculture in recent years. Burning has taken place in the recent past, and there is extensive damage in the west of the site due to industrial peat production. These are all activities that have resulted in loss of habitat and damage to the hydrological status of the site, and pose a continuing threat to its viability. Despite the damaging effects the high bog has retained some wet areas largely due to the topography of the site.

Mouds Bog is significant in terms of its high bog area and geographical location as it is at the eastern extreme of the range of raised bogs in Ireland. It is a site of considerable conservation significance comprising a large raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. This site supports a good diversity of raised bog microhabitats including hummock/hollow complexes, pools and flushes, and cutover which add to the diversity and scientific value of the site. Active raised bog is listed as a priority habitat on Annex I of the E.U. Habitats Directive. Priority status is given to habitats and species that are threatened throughout the E.U. Ireland has a high proportion of the total E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level.

SITE SYNOPSIS

SITE NAME : POLLARDSTOWN FEN

SITE CODE : 000396

Pollardstown Fen is situated on the northern margin of the Curragh of Kildare, approximately 3km west-north-west of Newbridge. It lies in a shallow depression, running in a north-west/south-east direction. About 40 springs provide a continuous supply of water to the fen. These rise chiefly at its margins, along distinct seepage areas of mineral ground above the fen level. The continual inflow of calcium-rich water from the Curragh, and from the limestone ground to the north, creates waterlogged conditions which lead to peat formation. There are layers of calcareous marl in this peat, reflecting inundation by calcium-rich water. This peat-marl deposit reaches some 6 m at its deepest point and is underlain by clay.

Pollardstown Fen is unusual in Ireland as it is an extensive area of primary and secondary fen peat, lacking scrub vegetation on its surface. The fen vegetation is generally from 0.5 - 1.5 m high and consists mainly of Saw Sedge (*Cladium mariscus*), Reed (*Phragmites australis*), Blunt-flowered Rush (*Juncus subnodulosus*) and a variety of Sedges (*Carex* spp.). The vegetation is quite varied and species-rich with numerous well-defined plant communities and several rare or scarce species, including Narrow-leaved Marsh Orchid (*Dactylorhiza traunsteineri*), Fly Orchid (*Ophrys insectifera*) and Broad-leaved Bog Cotton (*Eriophorum latifolium*). Of particular interest is the occurrence of the moss, *Homalothecium nitens* - a boreal relict species which is rare in Ireland. Species and communities characteristic of more nutrient-rich conditions occur on the fen margins where the water first emerges from the ground, while the central fen area is dominated by more uniform and less nutrient-demanding vegetation types.

Damp pastures occur on wet mineral soils and partly-drained peats on the fen margins. These are reasonably species-rich, with particularly good displays of orchids in some areas.

The fen has ornithological importance for both breeding and wintering birds. Little Grebe, Coot, Moorhen, Teal, Mallard, Mute Swan, Water Rail, Snipe, Sedge Warbler and Reed Bunting all breed annually within the fen vegetation. Reed Warbler and Garganey, both rare breeding species in Ireland, have been recorded at Pollardstown and may have bred. In recent years two very specialised bird species associated with fens, Marsh Harrier and Savi's Warbler, have been seen at Pollardstown.

An area of reclaimed land was reflooded in 1983 and has now reverted to open water, swamp and regenerating fen. Since the reflooding of the fen and the development of the shallow lake, wintering waterfowl have been attracted in increased numbers. Maximum counts during winter 1984/85 were as follows: Little Grebe 24; Teal 161; Mallard 220; Coot 81; Snipe 68.

Otter and Brook Lamprey (*Lampetra planeri*), two species listed in Annex II of the EU Habitats Directive, occur at Pollardstown.

Various groups of the invertebrate fauna have been studied and the system has been shown to support a true fen fauna. The species complexes represented are often rare in Ireland, with the sub-aquatic organisms particularly well represented. A number of internationally important invertebrates (mostly Order Diptera, i.e. two-winged flies) have been recorded from the site. Of particular conservation importance, however, is the occurrence of all three of the Whorl Snails (*Vertigo* spp.) that are listed on Annex II of the EU Habitats Directive. Pollardstown is the only known site in Ireland (or Europe) to support all three species (*Vertigo geyeri*, *V. angustior*, *V. moulinsiana*) and thus provides a unique opportunity to study their different habitat and hydrological requirements.

Much of the fen vegetation is now owned by the Office of Public Works and is a Statutory Nature Reserve.

Pollardstown fen is the largest spring-fed fen in Ireland and has a well developed flora and fauna. Owing to the rarity of this habitat and the numbers of rare organisms found there, the site is rated as of international importance.

SITE SYNOPSIS

SITE NAME: RED BOG, KILDARE

SITE CODE: 000397

Red Bog, Kildare is located 3 km north of the village of Blessington in east Co. Kildare, close to the boundary with Co. Wicklow. It comprises a wetland complex of lake, fen and bog situated in a hollow between ridges of glacially-deposited material and underlain by rocks of Ordovician age.

The site is a candidate SAC selected for transition mire, a habitat listed on Annex I of the E.U. Habitats Directive.

The shores of the lake are muddy and support such species as Bog Stitchwort (*Stellaria alsine*), Brooklime (*Veronica beccabunga*) and Soft Rush (*Juncus effusus*). Fringing the lakeshore is a narrow zone with emergent Soft Rush, Water-plantain (*Alisma plantago-aquatica*), Bottle Sedge (*Carex rostrata*), as well as the moss *Climacium dendroides*. In places, particularly at either end of the lake and along its south-eastern side, this zone grades into extensive areas of quaking scraw vegetation of dense Bogbean (*Menyanthes trifoliata*) and Marsh Cinquefoil (*Potentilla palustris*), accompanied by such species as Sharp-flowered Rush (*Juncus acutiflorus*), Cuckooflower (*Cardamine pratensis*), Marsh Speedwell (*Veronica scutellata*), Common Marsh-bedstraw (*Galium palustre*), Water Horsetail (*Equisetum fluviatile*), Common Sedge (*Carex nigra*), Common Spotted-orchid (*Dactylorhiza fuchsii*) and the mosses *Rhytidiadelphus squarrosus* and *Sphagnum squarrosum*. Bulrush (*Typha latifolia*) and areas of Willow scrub (*Salix* spp.) also occur in association with this vegetation.

The deeper water supports submerged aquatic plants such as Water-starwort (*Callitriche*) and Water-crowfoot (*Ranunculus* spp.), while in sheltered areas floating plants including Duckweed (*Lemna minor*) and the liverwort *Riccia fluitans* are found.

At the north-east end of the site bog vegetation has developed, with Ling Heather (*Calluna vulgaris*) and Hare's-tail Cottongrass (*Eriophorum vaginatum*) being the most frequent species. Other bog plants found here include Bog Asphodel (*Narthecium ossifragum*), Cross-leaved Heath (*Erica tetralix*), Tormentil (*Potentilla erecta*), Heath Wood-rush (*Luzula multiflora*), the mosses *Sphagnum palustre*, *S. capillifolium*, *S. subnitens*, *Hypnum cupressiforme*, *Polytrichum commune* and *Dicranum scoparium*, and the lichen *Cladonia portentosa*.

Red Bog is of ornithological significance and breeding birds recorded from the site include Mute Swan, Mallard, Tufted Duck, Coot, Moorhen, Snipe and Black-headed Gull (< 20 pairs).

Gravel extraction, drainage and eutrophication of the wetland from agricultural activities in the surrounding lands all pose a threat to the site.

Red Bog, Kildare is a site of particular conservation significance, supporting as it does, a good example of a transition mire, a habitat that is listed on Annex I of the E.U. Habitats Directive.

13.06.2003

SITE SYNOPSIS

SITE NAME : BALLYNAFAGH BOG

SITE CODE : 000391

This site is a raised bog situated about 1 km west of Prosperous in County Kildare. The area is directly underlain by muddy, fossiliferous limestones, interbedded with calcareous shales. The subsoils are predominantly clay-rich tills. All are of low permeability.

The site supports the E.U. Habitats Directive Annex I habitats active raised bog, degraded raised bog and Rhynchosporion vegetation. An estimated 46% of the site consists of intact raised bog habitat. In the wettest area towards the centre, a system of tear pools occurs, grown over with Bog Mosses (*Sphagnum capillifolium* and *S. magellanicum*). There is a small pool-and-hummock system, with pools colonised by another species of Bog Moss (*Sphagnum cuspidatum*). White Beak-sedge (*Rhynchospora alba*), Cottongrasses (*Eriophorum* spp.) and the insectivorous Great Sundew (*Drosera anglica*) are abundant in wet channels. Bog Rosemary (*Andromeda polifolia*) and Cranberry (*Vaccinium oxycoccos*) are found on the hummocks.

A large portion of the site contains old cutaway bog colonised by Rushes (*Juncus* spp.) and Common Cottongrass (*Eriophorum angustifolium*), with Downy Birch (*Betula pubescens*) forming patches of scrub/woodland.

The site is within the territory of a breeding pair of Merlin, a species listed on Annex I of the EU Birds Directive. Several pairs of Curlew and Snipe breed on the bog. Scrub species such as Stonechat, Redpoll and Long-tailed Tit occur on the cutaway.

The bog has been damaged by afforestation, mechanised peat-cutting and drainage. These three activities pose the main threats to the survival of raised bogs.

Raised bogs are a rare habitat in Europe, and in Ireland continue to be under threat. Ballynafagh Bog, although damaged, is of added interest as the most easterly site with a high proportion of intact raised bog habitat remaining in Ireland.

21.2.2007

SITE SYNOPSIS

SITE NAME: BALLYNAFAGH LAKE

SITE CODE: 001387

Ballynafagh Lake is located about 2 km north-west of Prosperous in Co. Kildare. It is a shallow alkaline lake with patches of emergent vegetation in the middle as well as around the shore. Submerged plants include Starwort (*Callitriche* spp.) and Bladderwort (*Utricularia minor*), with Duckweed (*Lemna minor*) and the liverwort *Riccocarpus natans* occurring on the surface.

Alkaline fen vegetation occurs at the lake edge, notably a plant community dominated by Blunt-flowered Rush (*Juncus subnodulosus*) and Black-bog Rush (*Schoenus nigricans*), with frequent Sedges (*Carex lepidocarpa*, *C. rostrata*). Other species in this area include Marsh Marigold (*Caltha palustris*), Red Rattle (*Pedicularis palustris*), Arrow Grass (*Triglochin palustre*), Water Mint (*Mentha aquatica*) and Bulrush (*Typha latifolia*). Extensive stands of Reed (*Phragmites australis*), Bulrush and Bottle Sedge (*Carex rostrata*) occur around the open water. A stand of Great Fen-sedge (*Cladium mariscus*) occurs in the western corner.

The lake is surrounded by acid grassland, heath and bog. Here the vegetation includes Bent Grass (*Agrostis tenuis*), Purple Moor-grass (*Molinia caerulea*), Bog Myrtle (*Myrica gale*), Bracken (*Pteridium aquilinum*), Gorse (*Ulex europaeus*) and Heather (*Calluna vulgaris*). Wet woodland of Birch (*Betula* spp.), Willow (*Salix* spp.) and Alder (*Alnus* spp.) occurs in the north-west corner of the lake.

The Blackwood Feeder connects Ballynafagh Lake to the Grand Canal and is of particular conservation significance for the populations of two rare snail species, *Vertigo moulinsiana* and *Pisidium pseudosphaerium*, that it supports. The former species is listed on Annex II of the E.U. Habitats Directive, while the latter has previously been recorded only from sites along the Royal Canal. *Vertigo moulinsiana* also occurs in wetland vegetation by Ballynafagh Lake itself. A high diversity of molluscan species is found on the site (42 species recorded in 1997).

A wide diversity of insects is also found at Ballynafagh Lake, including the Marsh Fritillary butterfly, a species listed on Annex II of the EU Habitats Directive.

Breeding birds of the lake include Little Grebe, Mallard, Moorhen, Coot, Snipe and Water Rail. In May 1993 a pair of Curlew was observed holding territory. Sedge Warbler, Reed Bunting and Whitethroat breed within the site. Black-headed Gulls formerly bred at the lake but only single birds were observed in 1993. Wintering waterfowl include: Whooper Swan 20, Teal 114, Mallard 110, Golden Plover 40 and Curlew 117 (all counts average peaks, 1 season 1984/85 - 86/87). The main landuse of the lake is fishing. There is a No Shooting Area Order on the site.

Although originally a reservoir, Ballynafagh Lake has developed a very natural vegetation with some interesting plant communities, including alkaline fen, a habitat that is listed on Annex I of the E.U. Habitats Directive. The site supports a high diversity of molluscan species, with some rare species recorded, including *Vertigo moulinsiana*, a species that is listed on Annex II of the E.U. Habitats Directive. The site is also of ornithological importance.

SITE SYNOPSIS

SITE NAME: POULAPHOUCA RESERVOIR SPA

SITE CODE: 004063

Poulaphouca Reservoir SPA, located in the western foothills of the Wicklow Mountains, was created in 1944 by damming of the River Liffey for the purpose of generating electricity from hydropower. The reservoir covers an area of approximately 20 square kilometres and is the largest inland water body in the mid-east and south-east regions. The reservoir receives water from two main sources, the River Liffey at the northern end, and the Kings River at the southern end. The exit is into the River Liffey gorge at the western end. Underlying the reservoir are sands and gravels deposited during the last glaciation. The shores of the lake are mostly sandy. When water levels are low the exposed lake muds are colonised by an ephemeral flora of annual plant species. Wet grassland areas occur in sheltered bays around the lake but especially in the northern part. Reed Canary-grass (*Phalaris arundinacea*) is the main grass species present, but other plant species characteristic of wet grasslands occur, including Creeping Bent (*Agrostis stolonifera*), Meadowsweet (*Filipendula ulmaria*), Yellow Iris (*Iris pseudacorus*) and Water Mint (*Mentha aquatica*). Sedges (*Carex* spp.) are locally common, while Rusty Willow (*Salix cinerea* subsp. *oleifolia*) scrub is often found associated with the wet grassland. In some places the water washes against grassy banks which are generally less than a metre high, and in a few places there are steep sand and clay cliffs, up to 15 m high - these are remnants of the old River Liffey channel. In many places the banks are actively eroding, and a strip of conifers has been planted around much of the perimeter of the reservoir in an attempt to stabilize the banks.

Poulaphouca Reservoir is of international importance for its Greylag Goose population, which is one of the largest in the country. The site provides the main roost for the birds, with feeding occurring mostly on improved grassland outside of the site. An average peak of 1,058 individuals occurred during the five seasons 1995/96 to 1999/00. A range of other waterfowl species occur in relatively low numbers, including Whooper Swan (34), Wigeon (262), Teal (136), Mallard (283), Goldeneye (36), Cormorant (16), Great Crested Grebe (11), Curlew (118) and Mute Swan (17). The site is also used by Grey Heron (12).

The reservoir attracts roosting gulls during winter, most notably a large population of Lesser Black-backed Gull (1,116), which in Ireland is rare in winter away from the south coast. Black-headed Gull (1,245) and Common Gull (229) also occur.

Breeding birds at the site include Great Crested Grebe (several pairs), which is localised in its distribution in eastern Ireland, as well as Snipe and Lapwing.

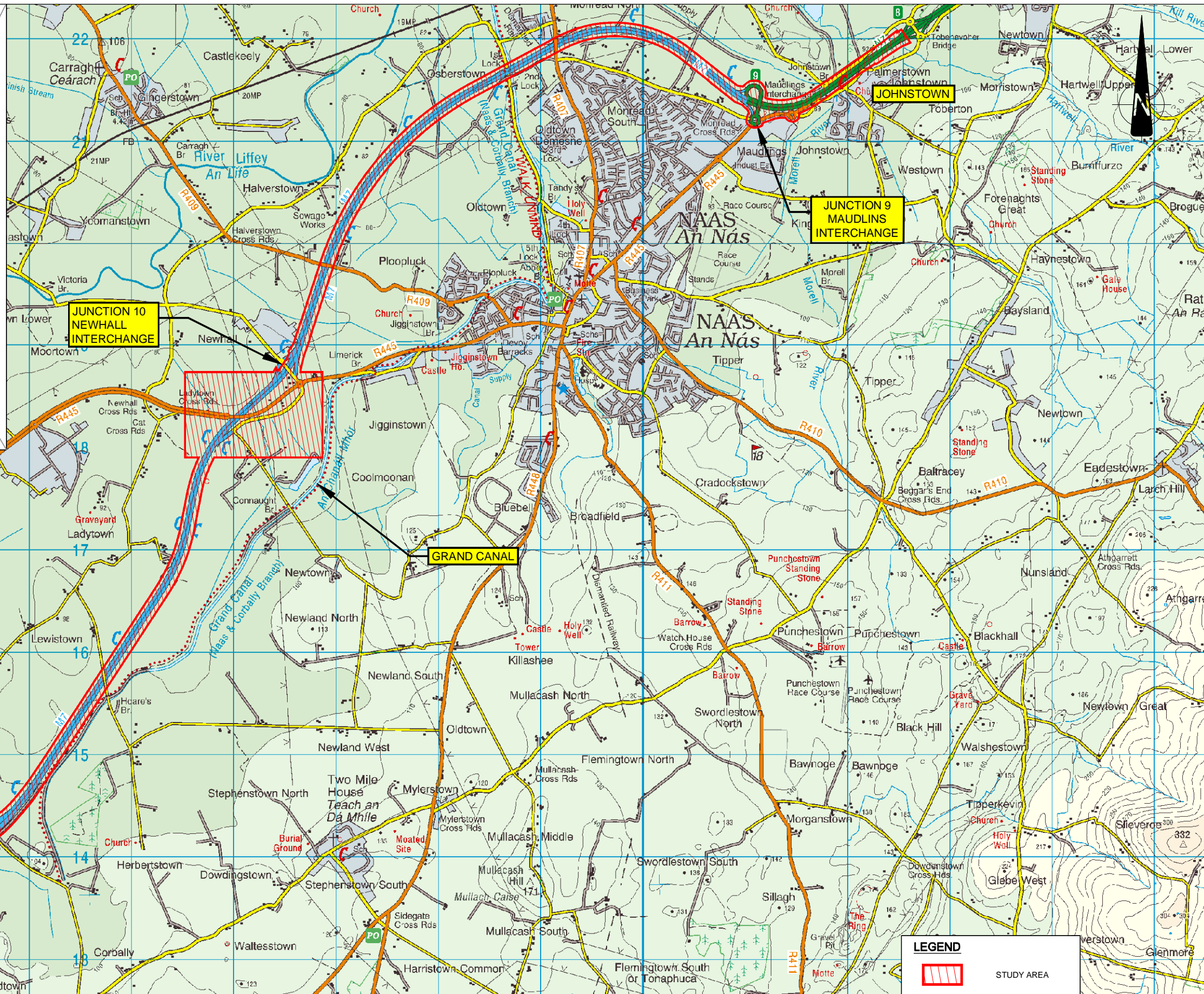
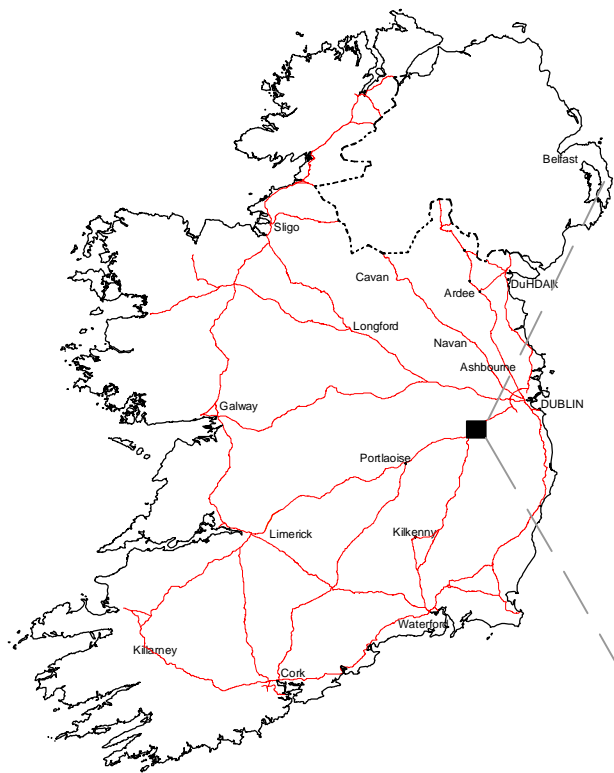
The principal interest of the site is the Greylag Goose population, which is of international importance. A range of other wildfowl species also occurs, including

Whooper Swan, a species that is listed on Annex I of the E.U. Birds Directive. The site is also notable as a winter roost for gulls, especially Lesser Black-backed Gull.


2.3.2005

APPENDIX 2

Figures



LEGEND

 STUDY AREA



Roughan & O'Donovan-AECOM Alliance

Roughan & O'Donovan AECOM

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Project **M7 NAAS TO NEWBRIDGE BY-PASS UPGRADE SCHEME**

ENVIRONMENTAL IMPACT STATEMENT

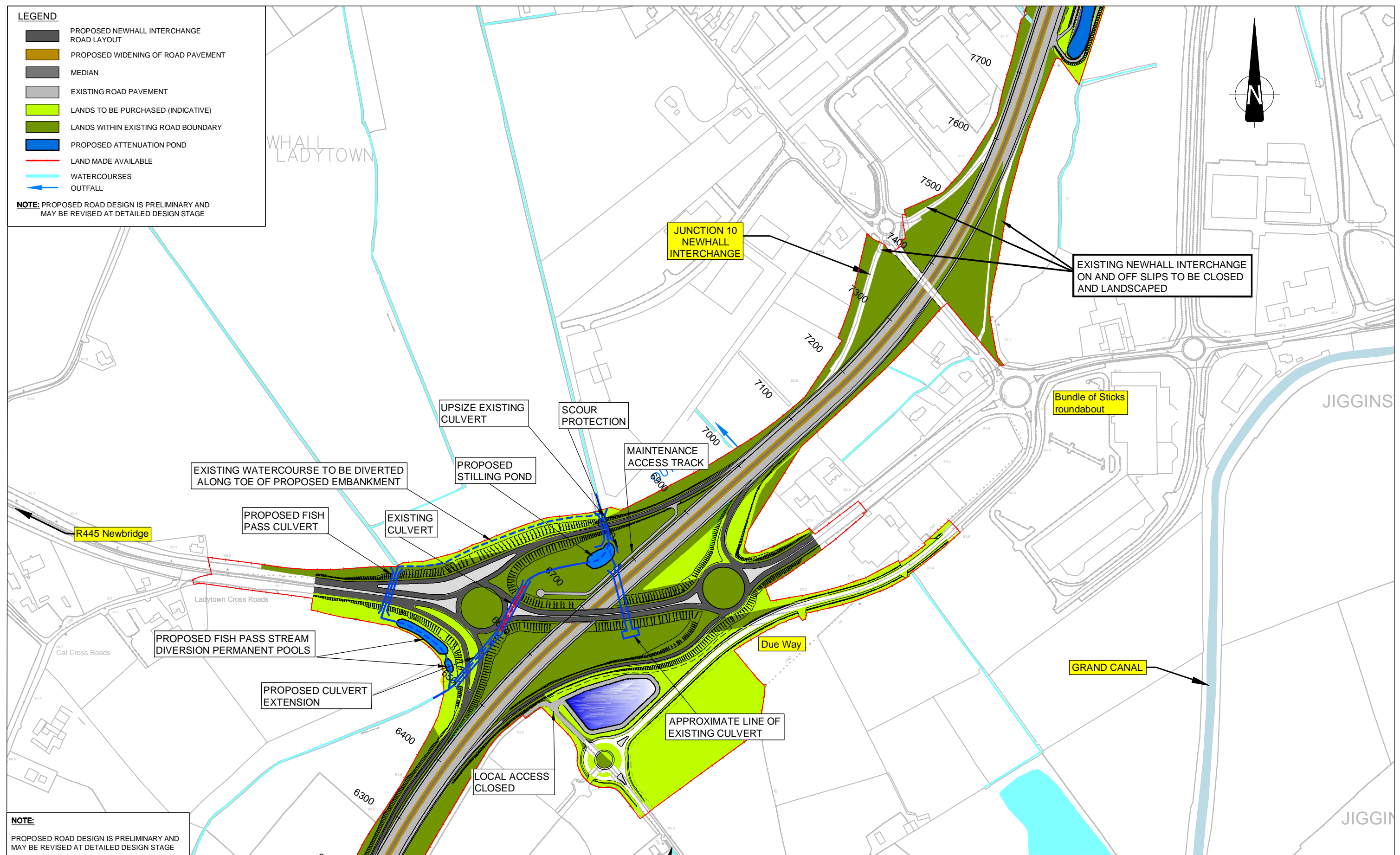
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Checked: BC	Scale: 1:40,000@A3	Drawing No:	Figure 1
Approved: JET	Date: DEC 13		

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- LEGEND**
- PROPOSED NEWHALL INTERCHANGE ROAD LAYOUT
 - PROPOSED WIDENING OF ROAD PAVEMENT
 - MEDIAN
 - EXISTING ROAD PAVEMENT
 - LANDS TO BE PURCHASED (INDICATIVE)
 - LANDS WITHIN EXISTING ROAD BOUNDARY
 - PROPOSED ATTENUATION POND
 - LAND MADE AVAILABLE
 - WATERCOURSES
 - OUTFALL

NOTE: PROPOSED ROAD DESIGN IS PRELIMINARY AND MAY BE REVISED AT DETAILED DESIGN STAGE

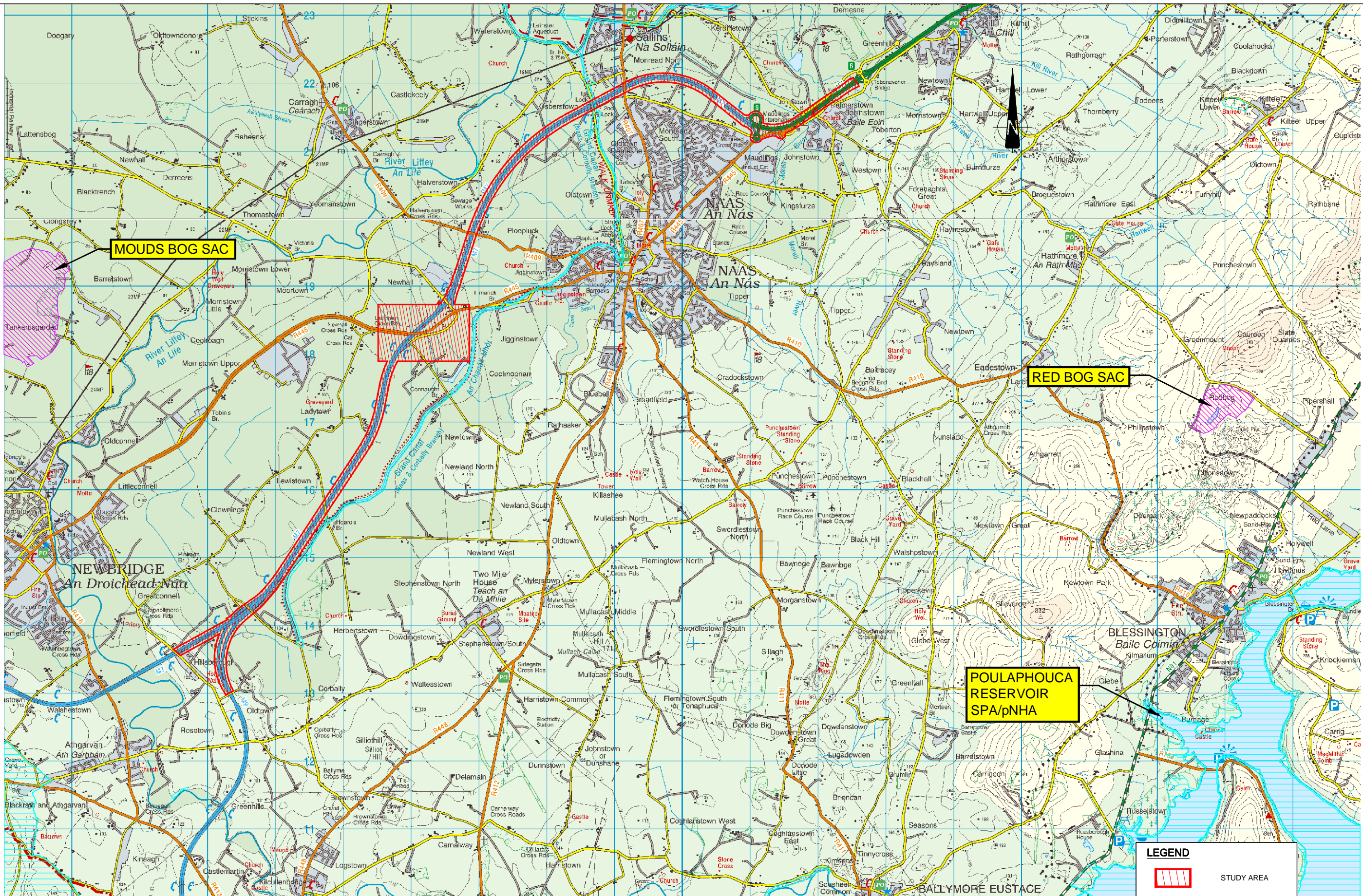


NOTE: PROPOSED ROAD DESIGN IS PRELIMINARY AND MAY BE REVISED AT DETAILED DESIGN STAGE

 Department of Transport, Tourism and Sport	 An tÚdarás um Bóithre Náisiúnta National Roads Authority	 Kildare County Council National Roads Design Office	Roughan & O'Donovan-AECOM Alliance  Consulting Engineers	Project M7 NAAS TO NEWBRIDGE BY-PASS UPGRADE SCHEME ENVIRONMENTAL IMPACT STATEMENT	Title HDA - Screening Report PROPOSED INTERCHANGE LAYOUT	
		Arena House, Arena Road, Sandycove, Dublin 18. Tel : +353 (1) 2940800 Fax : +353 (1) 2940820 e-mail : info@rod.ie www.rod.ie www.aecom.com		Designed: AW Drawn: PC Checked: BC Approved: JET	CAD File: 11.204 HDA Job No: 11.204 Scale: 1 : 2,500 @ A1 Date: DEC 13	Status: HDA Drawing No: Figure 2 Rev:

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LEGEND



STUDY AREA



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Project
**M7 NAAS TO NEWBRIDGE
BY-PASS UPGRADE SCHEME**
ENVIRONMENTAL IMPACT STATEMENT

Title		HDA - Screening Report NATURA 2000 SITES	
Designed: AW	CAD File: 11.204 HDA	Status:	HDA
Drawn: PC	Job No: 11.204	Scale:	NTS
Checked: BC	Date: DEC 13	Drawing No:	Figure 3
Approved: JET		Rev:	

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