HORIZON NUCLEAR POWER

WYLFA NEWYDD

ENERGY WORKING FOR BRITAIN

Wylfa Newydd Project

6.7.32 ES Volume G - A5025 Off-line Highway Improvements App G9-11 - A5025 Draft Great Crested Newt Mitigation Licence

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BACKGROUND AND SUPPORTING INFORMATION

A Executive summary

A.1.1 Horizon Nuclear Power Wylfa Limited (Horizon) is applying to the Secretary of State for a Development Consent Order (DCO) under the Planning Act 2008, to construct, operate and maintain a new nuclear power station on land west of Cemaes on Anglesey. The Wylfa Newydd Project (the Project) comprises the Wylfa Newydd DCO Project and the Enabling Works.

A.1.2 The Wylfa Newydd DCO Project is defined as those parts of the Project which are to be consented by the DCO, comprising: the Power Station; other on-site development; Marine Works; the Off-Site Power Station Facilities; and the Associated Development. The Associated Development comprises works included in the DCO which facilitate the delivery of the Nationally Significant Infrastructure Project, and which principally include: a Site Campus providing accommodation for construction workers; a temporary Park and Ride facility at Dalar Hir for construction workers; a temporary Logistics Centre at Parc Cybi; A5025 Off-line Highway Improvements; and an electrical connection to the National Grid substation.

A.1.3 In constructing the A5025 Off-line Highway Improvements an offence is considered likely under the *Conservation of Habitats and Species Regulations 2017*. This will need to be derogated via a European Protected Species (EPS) licence. Natural Resources Wales (NRW) issues licences under Regulation 55 of the legislation to allow development to be implemented within the law. This draft EPS licence covers the construction phase of the A5025 Off-line Highway Improvements.

A.1.4 Horizon has undertaken great crested newt (*Triturus cristatus*) (GCN) surveys between 2014 and 2017 of waterbodies within 500m of the A5025 Off-line Highway Improvements. The surveys recorded GCN in three waterbodies (Pond 10, Pond 13 and Ditch 25). The GCN metapopulation supported by Pond 10 and Ditch 25 and the population supported by Pond 13 were considered likely to be medium-sized.

A.1.5 The A5025 Off-line Highway Improvements could result in offences relating to killing or injury, and damage/destruction of a resting place. This would be as a result of the loss of approximately 5.3ha of terrestrial habitat within 250m of these waterbodies during the site clearance works phases. In addition, a loss of approximately 10m of ditch at Ditch 25 would occur where it would be culverted.

A.1.6 The proposed GCN translocation will use standard best practice methods and individual GCN will be released into areas of replacement habitat. Replacment habitat will comprise the creation of approximately 5.3ha high quality terrestrial habitat, the creation of two ponds at Llanfachraeth, east and west of the proposed scheme, and the creation of one pond at Llanfaethlu, to the west of the scheme. The replacement habitat will remain in the ownership of Horizon,

in perpetuity, under a suitable management regime to support GCN in their terrestrial phase.

A.1.7 Monitoring of the population will be undertaken to inform the need for any remedial action.

B Introduction

B.1 Background

B.1.1 Land adjacent to the Existing Power Station at Wylfa Head, west of Cemaes on the north coast of the Isle of Anglesey, is considered by the UK Government to be suitable for the construction of a new nuclear power station. Horizon Nuclear Power Wylfa Limited (Horizon) proposes to construct and operate a new nuclear power station, known as Wylfa Newydd, on this land. This power station would deliver approximately 2,700 megawatts of electricity, enough power for around five million homes.

Horizon Nuclear Power Wylfa Limited

B.1.2 Horizon is a UK energy company developing a new generation nuclear power station to help meet the country's need for stable and sustainable low carbon energy. Horizon's ultimate parent company is Hitachi Ltd., a Japanese corporation and the parent company of the multi-national Hitachi group of companies. Horizon is part of the Horizon Nuclear Power Limited group of companies and has premises in Gloucestershire and a site office on Anglesey.

The Wylfa Newydd Project

B.1.3 Horizon is applying to the Secretary of State for a Development Consent Order (DCO) under the Planning Act 2008 to construct, operate and maintain a new nuclear power station on land west of Cemaes on Anglesey.

B.1.4 The Wylfa Newydd Project (the Project) comprises the Wylfa Newydd DCO Project and the Enabling Works.

B.1.5 The Wylfa Newydd DCO Project is defined as those parts of the Project which are to be consented by the DCO, comprising: the Power Station; other on-site development; Marine Works; the Off-Site Power Station Facilities; and the Associated Development:

- Power Station: the proposed new nuclear power station, including two UK Advanced Boiling Water Reactors (UK ABWRs), to be supplied by Hitachi-GE Nuclear Energy Ltd.; supporting facilities; buildings; plant and structures; and radioactive waste and spent fuel storage buildings;
- Other on-site development: including landscape works and planting; drainage; surface water management systems; public access works including temporary and permanent closures and diversions of Public Rights of Way; new Power Station Access Road and internal site roads;

car parking; construction compounds and temporary parking areas; laydown areas; working areas and temporary works and structures; temporary construction viewing area; diversion of utilities; perimeter and construction fencing;

- Marine Works: comprising a Cooling Water System intake and outfall; Marine Off-Loading Facility and breakwater structures;
- Off-Site Power Station Facilities: comprising the Alternative Emergency Control Centre (AECC); Environmental Survey Laboratory (ESL); and a Mobile Emergency Equipment Garage (MEEG); and,
- Associated Development: comprising works included in the DCO which facilitate the delivery of the Nationally Significant Infrastructure Project which principally include: a Site Campus providing accommodation for construction workers; a temporary Park and Ride facility at Dalar Hir for construction workers; a temporary Logistics Centre at Parc Cybi; A5025 Off-line Highway Improvements; and an electrical connection to the National Grid substation.

B.1.6 Horizon will prepare planning applications under the Town and Country Planning Act 1990 (as amended) (TCPA) for the Enabling Works, to be submitted to Isle of Anglesey County Council (IACC) as the determining local planning authority.

B.1.7 The Enabling Works comprise the A5025 On-line Highway TCPA works and the Site Preparation and Clearance (SPC) TCPA works.

B.1.8 The following terms are used in this document when describing the geographical areas related to the Project:

- Power Station Site - the indicative areas of land and sea within which the majority of the permanent Power Station buildings, plant and structures would be situated. It would include the two nuclear reactors; steam turbines; the Cooling Water System intake and pump-house; outfall structures; breakwaters; the Site Campus and the Marine Off-Loading Facility; as well as other ancillary structures.
- Wylfa Newydd Development Area - the indicative areas of land and sea including the areas surrounding the Power Station Site that would be used for the construction and operation of the Power Station. This area is representative of the maximum area that would be physically affected by Power Station Main Construction activities and used to form the setting and features of the operational Power Station.

B.1.9 The proposed Off-Site Power Station Facilities would be located at a single site at Llanfaethlu, approximately 6km south of the Power Station Site, adjacent to the A5025.

B.1.10 The proposed Logistics Centre site would be located to the south-east of Holyhead at Parc Cybi, close to Junction 2 of the A55. The proposed Park and

Ride facility would be located at Dalar Hir to the north of Junction 4 of the A55. A5025 Off-line Highway Improvement works would take place at a series of locations along the A5025.

A5025 Off-line Highway Improvements

B.1.11 Construction of the Power Station would have substantial transport needs for materials, large components and staff. Studies undertaken by Horizon in 2010–2011 identified that the stretch of the A5025 between Valley and the Existing Power Station access road had physical and operational constraints in relation to its width, alignment, overtaking opportunities and surfacing condition.

B.1.12 These studies have confirmed a need for improvements to this section of the A5025 in order to mitigate the predicted impacts of increased traffic associated with construction activities at the Wylfa Newydd Development Area, and from operational Power Station traffic, which would travel along this part of the highway network.

B.1.13 Horizon intends to deliver a series of Off-line Highway Improvements between Valley and the Power Station access road as part of its wider transport strategy for the Project, the objectives being to:

- upgrade the route, both in terms of standard of construction and road geometry, such that it can support increased levels of traffic, and improve safety and accessibility;
- ensure that all relevant abnormal loads can pass along the full length of the road;
- reduce the risk of road accidents;
- reduce any adverse impacts on local communities;
- reduce any adverse impacts on the environment; and
- seek opportunities, where possible, to achieve improvements for local communities and the environment through road design measures.

B.1.14 The 16.5km stretch of the A5025 identified for improvement has been divided into eight sections:

- section 1 – A5 south of Valley Junction to north of Valley Junction (A5/A5025) – a length of approximately 0.8km;
- section 2 – north of Valley Junction (A5/A5025) to north of Llanynghenedl – a length of approximately 2.7km;
- section 3 – north of Llanynghenedl to north of Llanfachraeth – a length of approximately 2.2km;
- section 4 – north of Llanfachraeth to south of Llanfaethlu – a length of approximately 2.7km;
- section 5 – south of Llanfaethlu to north of Llanfaethlu – a length of approximately 1.3km;

- section 6 – north of Llanfaethlu to north of Llanrhuddlad – a length of approximately 3.1km;
- section 7 – north of Llanrhuddlad to north of Cefn Coch – a length of approximately 1.3km; and
- New Power Station access road junction – north of Cefn Coch – proposed roundabout junction – a length of approximately 0.3km.

B.1.15 The Off-line Highway Improvements through sections 1, 3, 5 and 7 would involve the construction of bypasses to reduce the effects of future traffic on existing communities; the formation of new junction arrangements; and localised improvements to existing bends. In addition, the new Power Station access road junction would be built off-line.

B.1.16 More detailed descriptions of each of the A5025 Off-line Highway Improvements are provided in chapter G1 of Volume G of the Environmental Statement.

B.2 Full details of proposed works on site that are to be covered by the licence

B.2.1 This draft licence will cover the enabling works (including a ditch culvert), temporary site compound set up (topsoil strip) and erection of boundary fence as part of the A5025 Off-line Highway Improvements in Section 3 Llanfachraeth and at Section 5 Llanfaethlu.

B.2.2 Proposed works at Section 3 Llanfachreath would be carried out between July 2019 – August 2019 and at Section 5 Llanfaethlu in July 2019.

B.2.3 The actions required for the enabling works, site compound set up (topsoil strip) and erection of boundary fence essentially comprise the clearance of all vegetation to ground level.

B.3 Actions requiring licensing

B.3.1 The actions to clear vegetation to ground level as described in B.2 have the potential to affect GCN when in their terrestrial phase only. The culverting of Ditch 25 would result in the loss of aquatic habitat. The translocation of individuals would be undertaken to avoid GCN being killed or injured. The following actions would be licensable:

- capturing, taking and transporting GCN during translocation to where they are released; and
- damaging and destruction of resting places used by GCN.

B.3.2 It is not predicted that any GCN would be killed or injured during the works completed under the translocation activity covered by the licence.

C Survey and site assessment

C.1 Existing information on great crested newt

C.1.1 Background data searches were requested in 2014 by Mott MacDonald (on behalf of Horizon) and in 2017 by Jacobs (on behalf of Horizon). This information was requested from Cofnod (the North Wales Environmental Information Service) and included all legally protected and notable species records, including GCN, within 2km of the centre of the A5025 Off-line Highway Improvements area. The background data searches returned 12 records of GCN within the past 10 years. The closest was over 600m away from the A5025 Off-line Highway Improvements area.

C.1.2 A Phase 1 habitat survey was completed in 2013 (see appendix G9-3. A5025 Route Improvement Contract: Preliminary Ecological Appraisal. Application Reference Number: 6.7.24) and updated in 2015 (see appendix G9-2. A5025 Terrestrial Ecology Factual Report 2014-2016. Application Reference Number: 6.7.23). This identified suitable habitat for breeding, foraging and hibernating GCN within 250m of the A5025 Off-line Highway Improvements area.

C.2 Statutory sites notified for the species (SSSIs or SACs) within 10km

C.2.1 A search using freely available online sources found that there are no Sites of Special Scientific Interest or Special Areas of Conservation which include GCN as a qualifying feature within 10km of the Wylfa Newydd Development Area. No pathways for interaction between the GCN metapopulations affected by the proposed works covered under this licence application and statutory designated sites for conservation notified for GCN were identified.

C.3 Objectives of the survey

C.3.1 GCN surveys were undertaken to determine presence/likely absence of GCN potentially affected by the proposed A5025 Off-line Highway Improvements and their likely use of survey area (e.g. breeding, hibernation, and foraging).

C.4 Scaled plan/map of survey area

C.4.1 See figure C-4.

C.5 Site/habitat description

C.5.1 The area surrounding the A5025 Off-line Highway Improvements was dominated by low-quality agricultural land comprising improved grassland and poor semi-improved grassland. Other habitats present included isolated areas of scrub, marshy grassland and ponds.

C.5.2 The field boundaries were generally traditional clawdd walls: earth banks faced with stone, often colonised with gorse (*Ulex europaeus*) and hawthorn

(*Crataegus monogyna*) scrub. Where the banks had collapsed, the vegetation more closely resembled hedgerows.

C.5.3 Management of the area has historically been for the purposes of agriculture; mainly cow and sheep grazing, with some fields used to grow grass which is cut for silage. In general, the quality of terrestrial habitats for GCN is poor, with the most suitable habitats being rank grassland and riparian vegetation mainly limited to within 50m of waterbodies.

C.6 Field survey(s)

Methods

C.6.2 Initial assessments of waterbody suitability to support GCN were undertaken using the Habitat Suitability Index (HSI) methodology developed by Oldham *et al.* (2000). In addition to this method, factors such as the presence of pollutants e.g. oil, eutrophication, and excessive poaching and disturbance by livestock was used to determine whether a waterbody may support breeding GCN. Those waterbodies found to be suitable were then surveyed using standard presence or likely absence methods described below.

C.6.3 Presence or likely absence surveys were undertaken according to standard methods (English Nature, 2001; Froglife, 2001; and Langton *et al.*, 2001). Methods included the deployment of bottle traps, egg searching, netting, and torching using torches with a minimum of 1,000,000 candle power. Where possible, a minimum of three survey methods were applied at each pond or ditch. Reasons for not using three techniques included:

- waterbodies that were too shallow to bottle trap or net;
- night-time temperatures were predicted to drop below 5°C during the night, thereby excluding bottle trapping as a suitable technique;
- ponds that had no vegetation to search for the presence of GCN eggs; and
- rain during surveys preventing effective torching.

C.6.4 In all instances where three techniques were not used in any given year, the waterbody was resurveyed in subsequent surveys to provide robust survey results.

C.6.5 Four visits required to determine likely absence were completed in all waterbodies. The surveys were completed at the optimal time of year for GCN surveys i.e. between mid-March and June, with at least two surveys of each waterbody, or three where GCN were detected, being completed between mid-April and mid-May, to coincide with peak newt breeding activity.

Surveyors

C.6.6 All surveys were conducted by experienced surveyors and led by surveyors who hold licences granted by Natural Resources Wales (NRW) to survey for the species.

Surveys completed each year

C.6.7 Great crested newt HSI scoping and presence or likely absence surveys took place within the A5025 Off-line Highway Improvements area and a 500m survey area around its boundary between 2013 and 2015 as reported in appendix G9-2 (Application Reference Number: 6.7.23), and appendix G9-5 A5025 Route Improvement Contract EIA: Great Crested Newt Field Survey Results (Application Reference Number: 6.7.26).

C.7 Survey results

C.7.1 All survey information pertinent to this draft licence application is shown in appendix G9-2 (Application Reference Number: 6.7.23), and G9-5 (Application Reference Number: 6.7.26), and is summarised in Table C-1. The results are shown in figure C-7-1 for Section 3 Llanfachraeth and figure C-7-2 for Section 5 Llanfaethlu.

C.7.2 GCN were recorded within 250m of Section 3 Llanfachraeth and Section 5 Llanfaethlu.

Table C-1 Summary of waterbodies where GCN were detected.

Waterbody number	A5025 Off-line Highway Improvement area	Peak adult count (over four survey visits)	Eggs present
Pond 10	Section 3 Llanfachraeth	29	Yes
Ditch 25	Section 3 Llanfachraeth	1	No
Pond 13	Section 5 Llanfaethlu	21	No

C.8 Interpretation/evaluation of survey results

C.8.1 The survey results show that there were three waterbodies with GCN presence during the 2014 breeding season. Pond 10 and Ditch 25 are considered to be one metapopulation and will be referred to as the Llanfachraeth metapopulation in the remainder of this licence application. For Pond 13, there were no other populations recorded nearby and this is referred to as the Llanfaethlu population.

C.8.2 The two additional survey visits on ponds where GCN were detected, required to provide a population size class assessment (in line with guidance given in the GCNMG (English Nature, 2001)), were not completed as part of the baseline surveys which inform this draft licence. The GCNMG (English Nature, 2001 classify the population size, based on the peak adult count recorded during six survey visits, as follows:

- small for maximum counts up to 10;
- medium for maxiumum counts between 11 and 100; and
- large for maximum counts over 100.

C.8.3 The peak adult counts recorded during the four survey visits is therefore used to provide the assessment of a medium population size class (peak count of between 11 and 100 individuals). Given the peak counts recorded (see table C-1) it is not considered that a fifth and sixth survey visit would have affected these figures sufficiently to change the population size class assessment.

C.8.4 Full population surveys will be undertaken in 2018 to inform the formal GCN licence application for the A5025 Off-line Highways Improvements.

C.8.5 It is presumed that GCN could be present in all suitable habitats within 500m of ponds where they were detected, although based on the quality of habitats present and its connectivity within the wider landscape, it is considered unlikely that GCN would be present beyond 250m from the waterbodies. It is therefore thought likely that only habitat features of the A5025 Off-line Highway Improvements area that are within 250m of waterbodies would support sheltering or hibernating GCN in their terrestrial phase.

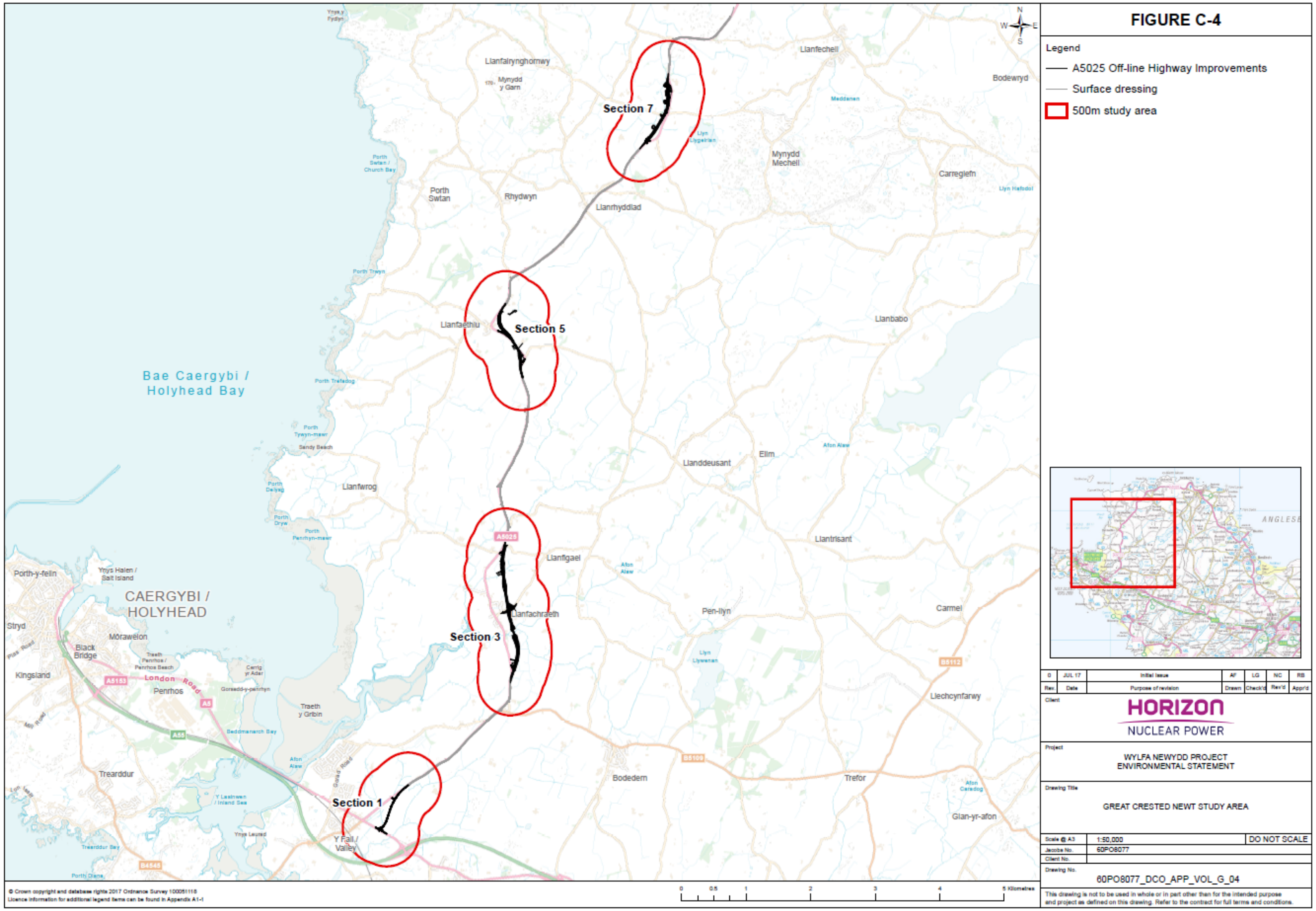
FIGURE C-4
Legend
A5025 Off-line Highway Improvements
Surface dressing
500m study area
Section 7
Section 5
Section 3
Section 1
Bae Caergybi / Holyhead Bay
CAERGYBI / HOLYHEAD
Llanfechell
Llanfairynghornwy
Rhydwyn
Llanrhyddlad
Mynydd Mechell
Carreglefn
Llanbabo
Llanfaethlu
Llanddeusant
Elim
Llanfwrog
Llantrisant
Llanfigael
Llanfachraeth
Pen-llyn
Carmel
Llechcynfarwy
Bodedern
Trefor
Glan-yr-afon
Trearddur
Morawelon
Penrhos
Kingsland
Porth-y-felin
Y Fali / Valley
Bodewryd
Porth Swtan
A5025
B5109
B5112
HORIZON
NUCLEAR POWER
WYLFA NEWYDD PROJECT
ENVIRONMENTAL STATEMENT
GREAT CRESTED NEWT STUDY AREA
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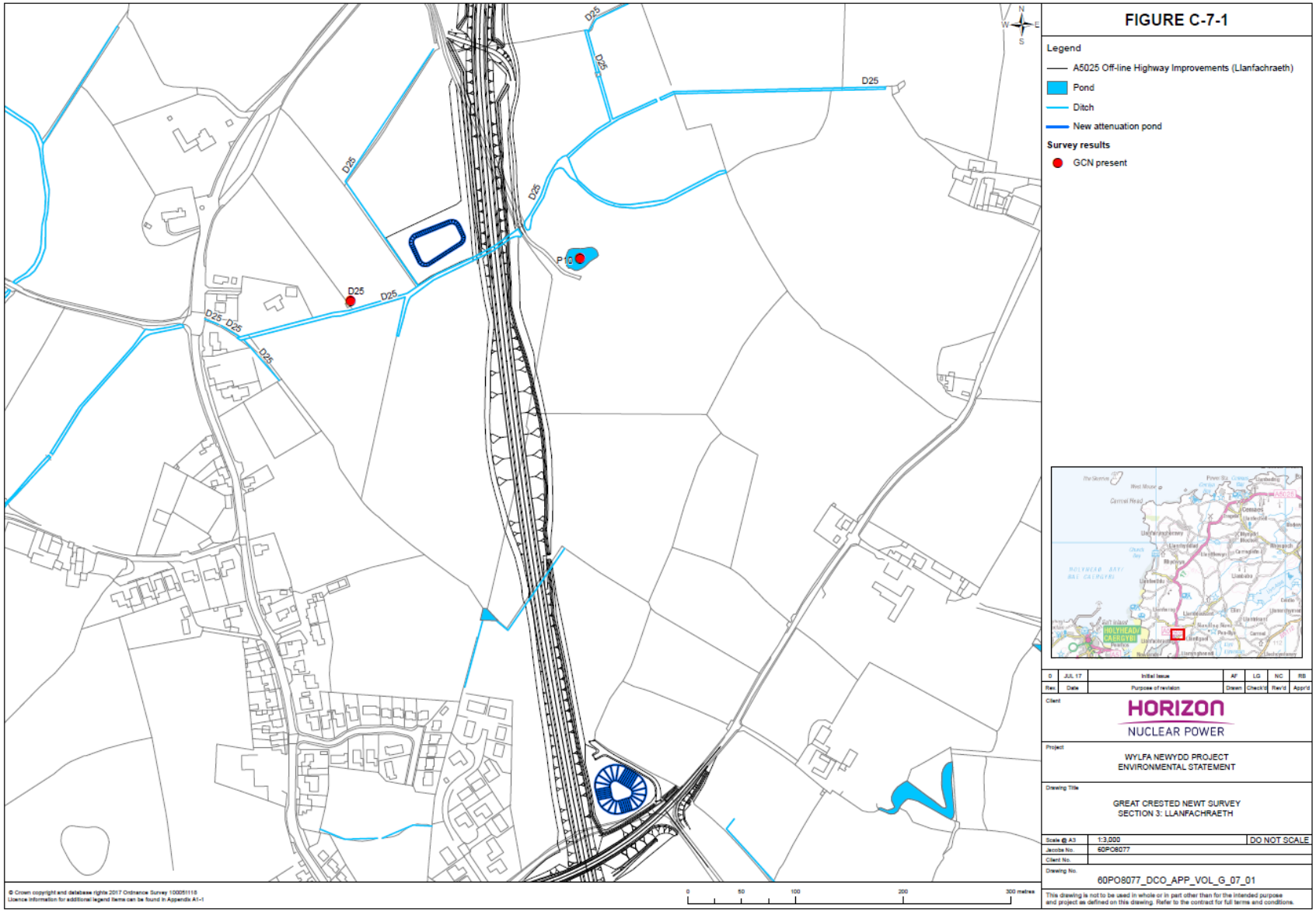
FIGURE C-7-1
Legend
A5025 Off-line Highway Improvements (Llanfachraeth)
Pond
Ditch
New attenuation pond
Survey results
GCN present
D25
P10
HORIZON
NUCLEAR POWER
WYLFA NEWYDD PROJECT
ENVIRONMENTAL STATEMENT
GREAT CRESTED NEWT SURVEY
SECTION 3: LLANFACHRAETH
1:3,000
DO NOT SCALE
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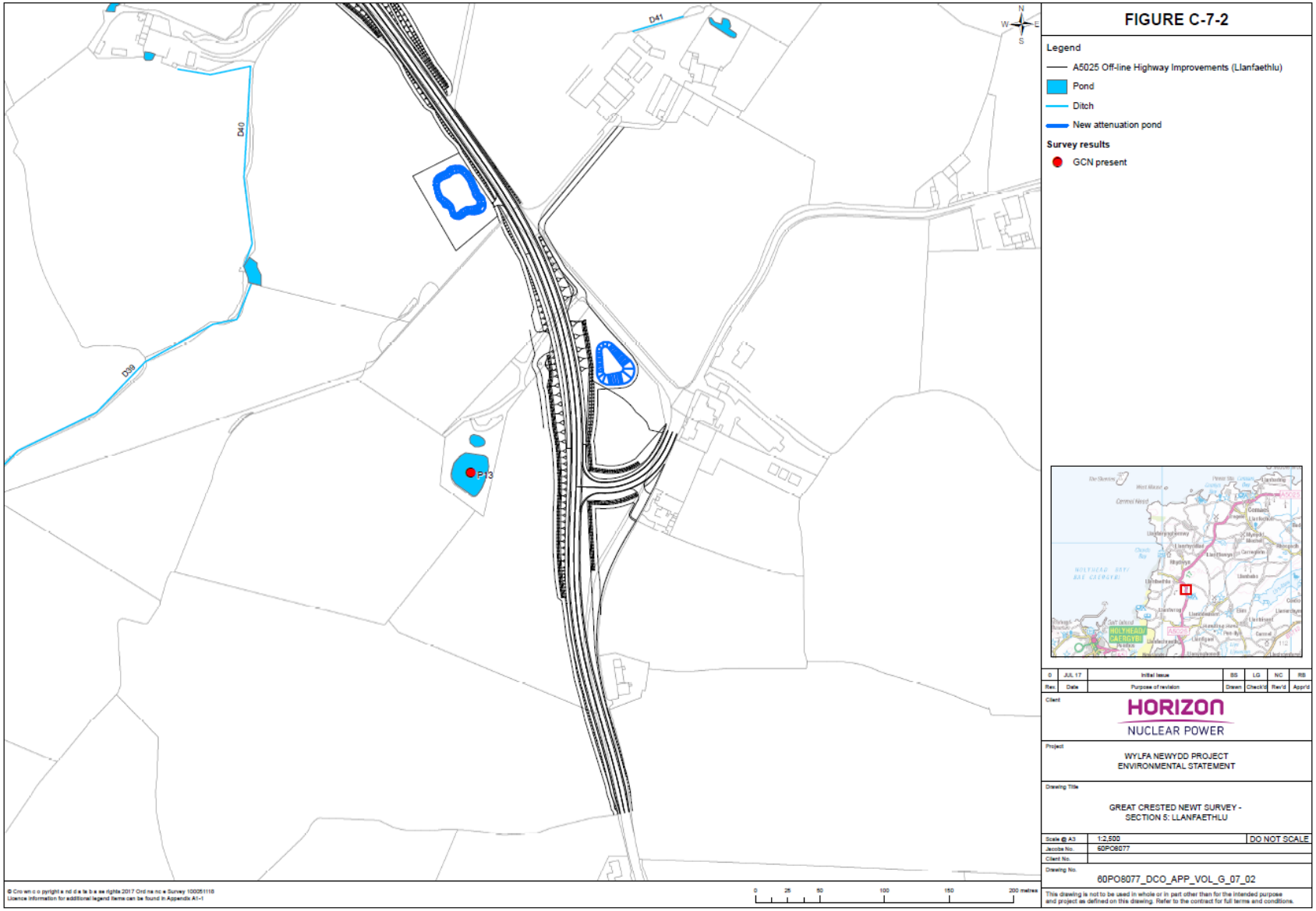
D41
D40
D39
P13
N
W
E
S
0
25
50
100
150
200 metres
FIGURE C-7-2
Legend
A5025 Off-line Highway Improvements (Llanfaethlu)
Pond
Ditch
New attenuation pond
Survey results
GCN present
0
JUL 17
Initial Issue
BS
LG
NC
RB
Rev
Date
Purpose of revision
Drawn
Check'd
Rev'd
App'd
Client
HORIZON
NUCLEAR POWER
Project
WYLFA NEWYDD PROJECT
ENVIRONMENTAL STATEMENT
Drawing Title
GREAT CRESTED NEWT SURVEY -
SECTION 5: LLANFAETHLU
Scale @ A3
1:2,500
DO NOT SCALE
Jacobs No.
60PO8077
Client No.
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This drawing is not to be used in whole or in part other than for the intended purpose
and project as defined on this drawing. Refer to the contract for full terms and conditions.

D Impact assessment

D.1 Short-term impacts: disturbance

D.1.1 In the absence of any mitigation measures there would be the potential for disturbance impacts on GCN as approximately 5.3ha of terrestrial habitat would be cleared and approximately 10m of ditch (with GCN presence) would be culverted during the A5025 Off-line Highway Improvement. This effect would occur as habitats were cleared by plant machinery as features that potentially support sheltering or hibernating GCN were dismantled and/or removed, exposing them to the risk of killing or injury and predation.

D.1.2 No disturbance effects on GCN in their breeding habitat are predicted. Ditch 25 recorded a single male GCN on a single occasion. Ditch 25 is not considered to be breeding habitat.

D.2 Long-term impacts: site modification

D.2.1 There would be no modification of breeding habitats used by either the Llanfachraeth metapopulation or Llanfaethlu population, but approximately 5.3ha of land within 250m of waterbodies that has the potential to support GCN, would be lost, and approximately 10m of Ditch 25 would be culverted to allow for the A5025 Off-line Highways Improvements.

D.3 Long-term impacts: site loss

D.3.1 There would be no loss of breeding habitats used by either the Llanfachraeth metapopulation or Llanfaethlu population, but approximately 5.3ha of land within 250m of waterbodies and a 10m section of ditch which have the potential to support GCN would be lost.

D.3.2 The Llanfachraeth metapopulation is isolated from other populations by sub-optimal habitats to the north (as evidenced by lack of records), the A5025 to the west and other local roads to the north and south.

D.3.3 The Llanfaethlu population is isolated from other populations by the sub-optimal habitats to the south (as evidenced by lack of records) and the A5025 to the north and east. The loss of habitat would therefore only affect the conservation status of GCN at a local scale, as the identified populations are extremely unlikely to feed into a wider population.

D.3.4 As the number of ponds within the Llanfaethlu population and Llanfachraeth metapopulation are low, their sizes are medium, they are relatively isolated, and the adjacent habitats are of low suitability, it is considered unlikely that they make a significant contribution to favourable conservation status at a county level (Russell *et al*., 2017).

D.4 Long-term impacts: fragmentation and isolation

D.4.1 Section 3 Llanfachraeth would bisect the terrestrial habitat of the Llanfachraeth GCN metapopulation. However, the proposals include a mammal ledge as part of the culverting of Ditch 25, which would provide a connection between the terrestrial areas on each side of the proposed road.

D.4.2 The Llanfaethlu population is already isolated by the existing A5025 to the north and east, and the A5025 Section 5 proposals would not fragment the area any further.

D.5 Post-development interference impacts

D.5.1 There are not predicted to be any significant post-development mortality interference impacts on the GCN metapopulations. The habitat creation measures set out in section E are such that the habitat suitability is increased closer to the ponds so reducing the pressure to disperse. Also the provision of a culvert and mammal ledge connecting the terrestrial habitat on either side of Section 3 Llanfachraeth and the effects at Section 5 Llanfathlu being limited to approximately 1.8ha on the eastern periphery of the habitat within 250m of Pond 13 mean that there is no likelihood of post development mortality. As a result no further measures to prevent GCN mortality as a result of the A5025 Off-line Improvements are considered necessary.

D.5.2 In this area, habitats would be changed in part from agricultural use to a built environment.

D.6 Predicted scale of impact

D.6.1 In the absence of any mitigation measures, the scale of predicted impacts is provided in Table D.1**Error! Reference source not found.**. This is based on guidance from English Nature (2001), whereby the most significant impact (development effect) for each habitat feature is provided.

Table D-1 Summary of predicted scale of impact in the absence of mitigation

Habitat feature	Development effect	Low scale of impacts	Medium scale of impact	High scale of impact
Intermediate terrestrial habitat (approximately 50-250m from breeding waterbody)	Destruction	-	X	-
Distant terrestrial habitat (>250m from breeding waterbody)	Destruction	X	-	-

D.6.2 Table D.1 shows that there are development effects which will have a medium scale of impact. However, it should be recognised that the size of the habitats that will be lost are relatively small (approximately 5.3ha and a 10m section of Ditch 25) given the availability of alternative habitats within 250m of Pond 10

and Ditch 25. The dominant habitat present comprised mostly short-grazed improved grassland and arable land during the 2014 survey. These habitat types are of extremely limited value to GCN for foraging, as they offer very little shelter. The hedgerows and walls lost within 250m would be of greater value to provide shelter. In the absence of mitigation, a medium scale negative impact would occur.

DELIVERY INFORMATION - MITIGATION, COMPENSATION AND MONITORING

E Works to be undertaken

E.1 Great crested newt capture and exclusion

E.1.1 The areas requiring vegetation clearance for the proposed A5025 Off-line Highway Improvements within 250m of Pond 10, Pond 13 and Ditch 25 would be trapped and GCN translocated using standard techniques as specified in the Great Crested Newt Mitigation Guidelines (GCNMG) (English Nature, 2001). The proposed timing of these works is set out in table E-1.

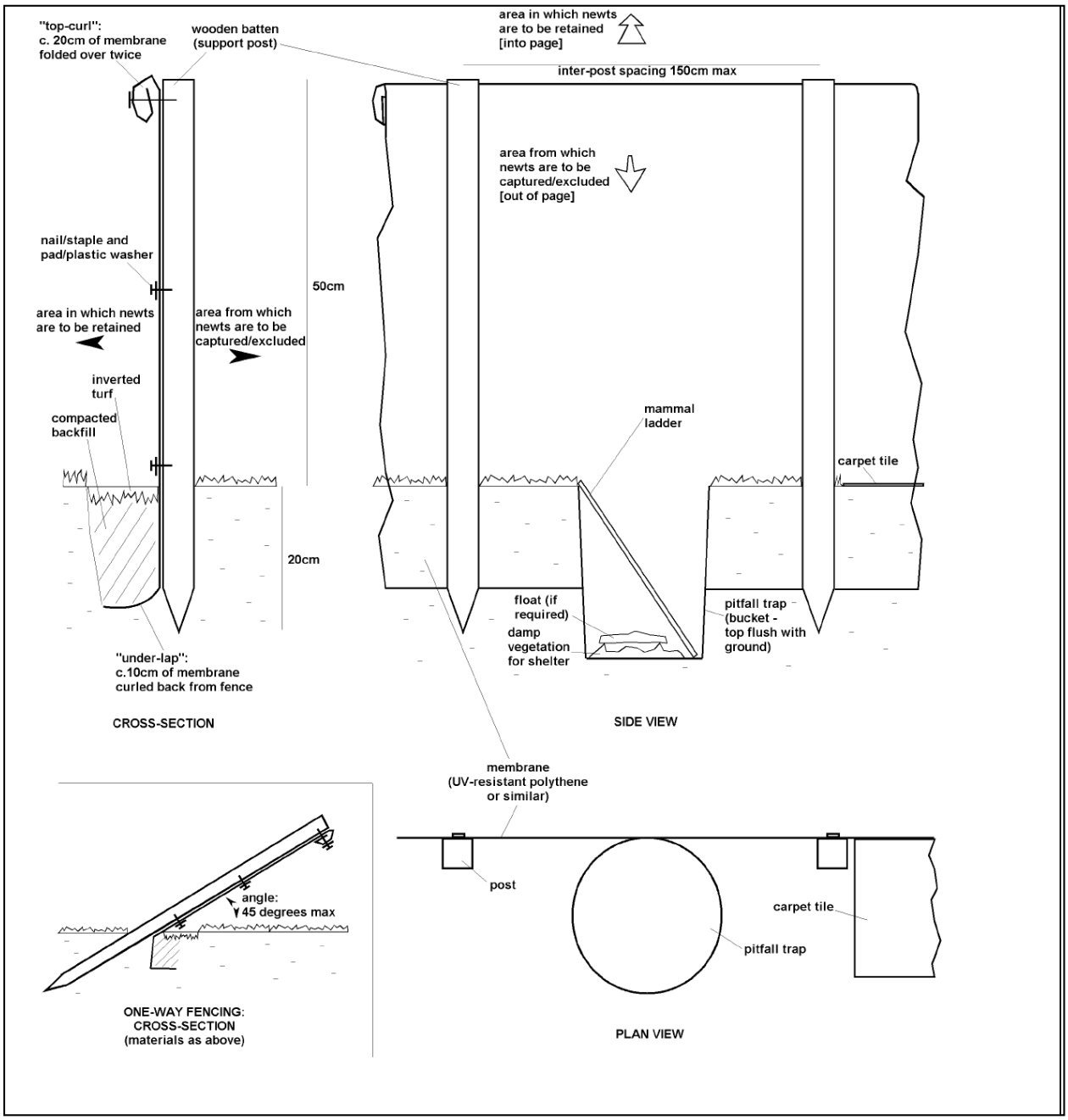
Terrestrial habitat

E.1.2 Trapping of terrestrial habitats would comprise the installation of exclusion fencing which would be preceded by a fingertip search of the proposed fence lines by licensed GCN ecologists, concentrating on discrete habitat features, e.g. hedgerow crossings, rather than areas of homogenous habitat such as improved grassland. Exclusion fencing would be installed on the construction site extents up to 250m from GCN waterbodies Pond 10, Pond 13 and Ditch 25 to exclude GCN from entering the construction area. Trapping beyond 250m is not considered appropriate due to the small populations recorded and the generally low habitat quality within 250m of these waterbodies (predominantly grazed improved grassland) which is expected to limit dispersal of GCN.

E.1.3 Drift fencing would be installed at regular intervals within the trapping area to subdivide it, increasing trapping efficiency. Pitfall traps and artificial refuges would be placed at regular intervals (every 10m for each type and alternating) along the perimeter exclusion fencing and on both sides of the drift fencing. The required trapping density is specified within the GCNMG (English Nature, 2001) at 80 traps/ha for a medium population size class.

E.1.4 Figure E-1 shows the standard specification for amphibian exclusion fencing, pitfall trap design and layout, as reproduced from GCNMG (English Nature, 2001). Note that one-way fencing is not proposed on this site.

Figure E-1 Standard specification for amphibian exclusion fencing, pitfall trap design and layout (English Nature, 2001)



E.1.5 Trapping would be suspended when the overnight temperature was expected to fall below 5°C or there were prolonged periods of hot and dry weather during which GCN activity would be limited. Daily records of weather conditions would be kept throughout the trapping period using a maximum/minimum thermometer and rain gauge set up within the trapping area (according to the manufacturer's instructions e.g. in a shady position).

E.1.6 All fencing would be subject to daily checks during the active trapping period and a log of these daily checks would be kept as part of the trapping protocol.

Any repairs required would be reported to the licence holder for urgent remedial action by an experienced GCN fencing contractor. Repairs to perimeter fencing would be prioritised over repairs to internal drift/ring fencing to minimise the risk of any additional GCN accessing the trapping area. Any fence removal required as part of repair work, e.g. removal and replacement of a damaged section, would be supervised by a licensed GCN ecologist and would be preceded by a careful finger-tip search for any GCN that may be using the base of the fence as a refuge. Any GCN found during repair works would be released in to the receptor areas, where all trapped GCN would also be released. GCN released would be placed under suitable refuges to protect them from predation.

E.1.7 Outside the active trapping period, the fencing would be checked on at least a fortnightly basis to ensure the exclusion fencing maintained an effective barrier to GCN. Any required repairs would be communicated and actioned as above.

E.1.8 Upon completion of 60 suitable nights trapping followed by five consecutive days of no captures (medium population size class), the internal drift fencing would be removed under ecological supervision and a destructive search of all suitable habitats and high-risk complex habitat features (e.g. mounds of rubble, vegetated soil mounds, logs, the lower courses of stone walls, bases of hedgerows, tree roots etc.) within the trapping area would be conducted. Before commencing the destructive search phase of the licence, the contractors undertaking the work would be inducted by a licensed GCN ecologist to make them aware of the possible presence of GCN, their legal protection and of working practices to avoid harming GCN. The destructive search phase would also take place in the area 250-500m from the waterbodies as a precaution.

E.1.9 All GCN (and other amphibians) captured in these areas would be released in to the adjoining GCN receptor areas as described in section E.2 and shown in figure E-4-1 (section 3: Llanfachraeth) and figure E-4-2 (section 5: Llanfaethlu).

Aquatic habitat (Ditch 25)

E.1.10 The section of Ditch 25 where culverting would be required would be coffer dammed and the affected section cleared of aquatic phase GCN (and other amphibians) by a combination of hand netting and bottle trapping. This would occur in conjunction with the pitfall trapping of GCN from the area around Ditch 25 and Pond 10. During the destructive phase of the trapping operation, the ditch would be completely drained of water and the ditch bottom and any vegetation would be subject to a careful hand and then machine destructive search for any remaining amphibians by experienced GCN ecologists. Animals caught from within the affected section of Ditch 25 would be released into the adjoining GCN receptor area (see figure E-4-1).

Post translocation

E.1.11 Records would be kept of where GCN (and other amphibians) were released so individuals can be evenly distributed to minimise the risk of predation/competition if they were too aggregated.

E.1.12 Once the destructive search phase was complete within the trapping areas, the temporary exclusion fencing that crosses the development footprint would be removed (under ecological supervision and during suitably mild conditions) to allow vegetation and topsoil clearance to commence. Perimeter exclusion fencing would remain in place throughout the construction period of the A5025 Off-line Highway Improvements.

E.1.13 A copy of the method statement and licence documentation would remain available on site at all times. A summary sheet of guidance would be given to each contractor undertaking the destructive search phase.

If GCN were discovered at any other time, the contractor would be instructed to cease all works immediately and for the named ecologist or accredited agent to be contacted promptly for advice.

E.2 *Great crested newt habitat*

Receptor site modification, enhancement or creation

Llanfachraeth

E.2.1 At Llanfachraeth approximately 3.5ha of land has been identified around Pond 10 and Ditch 25, as shown in figure E-4-1, to mitigate for the GCN habitat lost. To the west and east, land would be enhanced for GCN through reducing grazing pressure and allowing a coarse sward grassland to develop, as well as creating log piles using the advice and guidelines set out in the Great Crested Newt Conservation Handbook (GCNCH) (Langton et al, 2001). The boundaries of this area would be planted with hedgerow and scrub as set out in the landscape strategy for the A5025 Off-line Highways Improvements given in Appendix G10-9 Design approach and landscape strategy (Application Reference Number: 6.7.41).

E.2.2 Two ponds would be created, located to the west (by widening the exisiting ditch) and east (new pond adjacent to pond 10) of the A5025 Off-line Highways Improvements, as shown on figure E-4-1. These would provide alternative breeding locations and mitigate for the loss of aquatic habitat in Ditch 25 and any potential fragmentation between Ditch 25 and Pond 10. The design of these ponds would also use the advice and guidelines set out in the GCNCH (Langton et al, 2001). Full details of the landscape strategy for the A5025 Off-line Highways Improvements are given in Appendix G10-9 (Application Reference Number: 6.7.41).

Llanfaethlu

E.2.3 At Llanfaethlu, approximately 1.8ha of land has been identified around Pond 13, as shown in figure E-4-2, to mitigate for the habitat lost. This land would be enhanced through reducing grazing pressure and allowing a coarse sward grassland to development, as well as creating log piles using the advice and guidelines set out in the Great Crested Newt Conservation Handbook (GCNCH) (Langton et al, 2001). Along the boundaries of this area, hedgerow and scrub

would be planted as set out in landscape strategy for the A5025 Off-line Highways Improvements are given in Appendix G10-9 (Application Reference Number: 6.7.41).

E.2.4 A new pond, as shown adjacent to Pond 13 in figure E-4-2, would be created to provide an alternative breeding location which would support the maintenance of the population of GCN in this locality. The design of this pond would also use the advice and guidelines set out in the GCNCH (Langton et al, 2001). Full details of the landscape strategy for the A5025 Off-line Highways Improvements are given in Appendix G10-9 (Application Reference Number: 6.7.41).

E.2.5 At both sections, cessation of grazing would be in line with the start of site works. The creation of log piles would use timber felled during vegetation clearance. The Environmental Master Plan (figures G1-4a-j (Application Reference Number: 6.7.48)), shows proposed hedgerow and dry stone wall creation running parallel to the alignment of the A5025 Off-line Highways Improvements, replacing the loss of habitat and providing connectivity along the route and into the wider landscape. Planting and wall creation would occur towards the end of the main construction phase.

Temporary loss of breeding sites, resting places

E.2.6 No temporary loss of breeding sites is anticipated.

E.2.7 Temporary loss of resting places is anticipated. However, any losses would be regarded as permanent due to the timescales and extent of the project. As such, no temporary avoidance measures are advocated.

Destruction of existing breeding sites, resting places

E.2.8 The trapping and translocation exercise would commence in March 2019. The destructive search phase would take place between June and July 2019.

E.2.9 Table E-1 shows a proposed project programme for the GCN mitigation works required for the A5025 Off-line Highway Improvements.

Table E-1 Proposed programme for GCN mitigation for the A5025 Offline Highway Improvements

Activity	Date and Duration of Activity	Notes
Cessation of grazing within the GCN enhancement areas	January 2019	Cessation of grazing during construction would allow a coarse sward to develop within these areas.

Activity	Date and Duration of Activity	Notes
Within 250m of GCN waterbodies. Installation of trapping layout within proposed development footprint.	March 2019 – approximately two weeks	To include a fingertip search of proposed exclusion fence line, drift fence, pitfall traps and refuges in compliance with the GCNMG (English Nature, 2001).
Within 250m of GCN waterbodies. Terrestrial trapping of GCN. Aquatic trapping of aquatic GCN in Ditch 25.	March - June 2019 – minimum of 60 trapping nights	Medium populations require a minimum of 60 suitable trapping nights. A suitable trapping night is where the temperature is at least 5°C and ideally there has been recent rainfall such that the ground is damp. Obtaining five consecutive days with no GCN captures is required at the end of the trapping period.
Within 500m of GCN waterbodies. Destructive search phase away from waterbodies.	June - July 2019	Hand and machine dismantling of discrete habitat features to search for GCN under supervision and direction of licensed GCN ecologists.
Release of GCN.	March - July 2019 – 5 month period where GCN may be encountered.	Captured GCN would be released into areas around existing ponds at Llanfachraeth and Llanfaethlu.
Land declared clear.	July 2019	Once all GCN capture measures had been exhausted (trapping and translocation followed by destructive search phase).

Scaled maps/plans

E.2.10 Figure E-4-1 shows the area of land adjacent to Pond 10 and along Ditch 25 that would be created for GCN at Llanfachraeth. Figure E-4-2 shows the area of land adjacent to Pond 13 that will be created for GCN at Llanfaethlu.

Maintenance and/or modification of new and existing habitat

E.2.11 Appendix G10-9 (Application Reference Number: 6.7.41) sets out the proposed design approach, provides an outline specification for the implementation of planting and seeding and an outline landscape maintenance plan for how the planting areas would be maintained. This document describes the proposals for GCN habitat creation.

E.3 Mechanisms for ensuring delivery of mitigation and compensation measures

Measures to ensure compliance with this method statement

E.3.2 Horizon is committed to the delivery of the mitigation measures outlined in this document as they are a pre-requisite to permit successful completion of the proposed scheme and to demonstrate their full compliance with protected species legislation and licensing.

E.3.3 Horizon fully recognises the legally-binding nature of the commitments and conditions of this method statement upon the granting of any licence.

E.3.4 Contractual obligations between Horizon and its sub-contractors would ensure that all personnel were informed of the legal obligations to fulfil this licence.

E.3.5 Key performance indicators, which could be measured by a nominated third party for audit, would include:

- exclusion fencing maintained for the duration of the construction period;
- the receptor areas into which GCN were to be released not being affected by works, and developing into a habitat of increased value to GCN from its existing close grazed sward;
- no fish being present within the existing or new ponds created in the Llanfachraeth and Llanfaethlu GCN mitigation areas; and
- persistence of a medium population size class of GCN in the Llanfachraeth metapopulation and the Llanfaethlu population, five years post translocation.

E.3.6 A European Protected Species licence return would be sent to NRW.

Ensure that sufficient land has been acquired for compensation purposes

E.3.7 At Llanfachraeth, approximately 3.5ha of land is secured around Pond 10 and Ditch 25, as shown in figure E-4-1), to mitigate for the habitat lost.

E.3.8 At Llanfaethlu, approximately 1.8ha of land is secured around Pond 13, as shown in figure E-4-2, to mitigate for the habitat lost.

Ensure that designs of subsequent development are newt friendly

E.3.9 Horizon is committed to ensuring that the designs for the Wylfa Newydd Development are sympathetic to the needs of wildlife and will actively avoid any design features known to have an adverse impact on GCN and other amphibians e.g. gully-pot drainage systems.

Provide sufficient resources

E.3.10 Horizon is committed to providing qualified and competent personnel to ensure the proper instatement and long-term sympathetic management of all habitat features and landscaping for the benefit of GCN. Similarly, all GCN monitoring would be compliant with the requirements of the GCNMG (English Nature, 2001) as set out in this licence application. This would include contracting sufficiently experienced and licensed GCN ecologists to conduct the required monitoring.

E.4 Mitigation contingencies

E.4.1 In the event that any of the mitigation proposals contained in the application were considered to be undeliverable/unsuitable prior to their implementation (e.g. due to a change of conditions on site or the discovery of additional animals, GCN waterbodies, populations, etc.) then a full review of the mitigation proposals would be undertaken by experienced ecologists to determine what measures would adequately address the changes. These changes would be discussed and agreed with NRW and, if required, a formal licence resubmission/modification request would be made.

E.4.2 Similarly, if problems are identified with any mitigation measures following their implementation, Horizon would seek prompt ecological advice on appropriate remedial measures and, if required, seek agreement and licence approval from NRW prior to taking action to address the problem. Horizon is committed to ensuring there is no detriment to the maintenance of the GCN population at favourable conservation status in its natural range and to taking the necessary measures to ensure the maximum benefit is derived from this mitigation strategy within the A5025 Off-line Highway Improvements.

E.5 Biosecurity risk assessment

E.5.1 To prevent the possible spread of the GCN fungal pathogen *Chytridiomycosis*, amongst other harmful species, good practice biosecurity measures for working within the translocation area and area in which GCN would be released would be followed. NRW has stated there is no requirement to undertake Chytridiomycosis testing for the Project as GCN would only be translocated within areas they could access naturally i.e. within less than one kilometre of their source waterbodies.

E.5.2 Horizon would ensure that the site clearance and construction stages of the Project strictly adhere to good practice construction measures as detailed within

the Project's Construction and Environmental Management Plan to prevent, amongst other things, the spread of invasive non-native species such as the known invasive aquatic plants on site and Japanese knotweed (*Fallopia japonica*). Horizon would be advised throughout the Project by ecologists experienced in the preparation of invasive species management plans and would employ the services of specialist contractors, as required, to undertake any control measures. Similarly, landscape planting would not include the planting of any ash (*Fraxinus excelsior*) trees, to prevent the further spread of ash dieback (*Chalara*).

E.5.3 Given these control measures, it is considered that the residual risk of spreading non-native species or disease as a result of the proposed works is negligible.

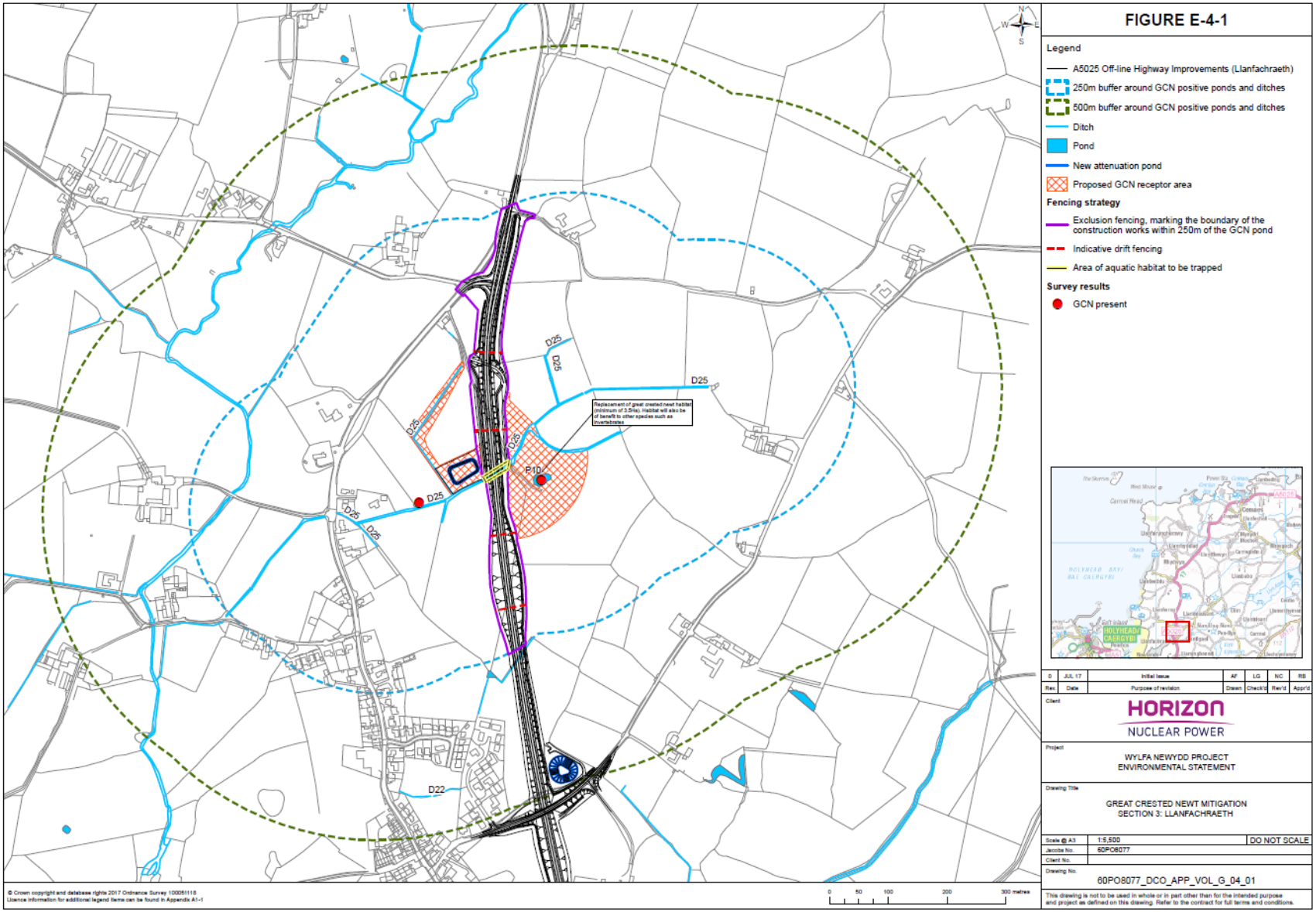


FIGURE E-4-1
Legend
A5025 Off-line Highway Improvements (Llanfachraeth)
250m buffer around GCN positive ponds and ditches
500m buffer around GCN positive ponds and ditches
Ditch
Pond
New attenuation pond
Proposed GCN receptor area
Fencing strategy
Exclusion fencing, marking the boundary of the construction works within 250m of the GCN pond
Indicative drift fencing
Area of aquatic habitat to be trapped
Survey results
GCN present
Replacement of great crested newt habitat (minimum of 3.5Ha). Habitat will also be of benefit to other species such as invertebrates
P10
D25
D22
HORIZON
NUCLEAR POWER
WYLFA NEWYDD PROJECT
ENVIRONMENTAL STATEMENT
GREAT CRESTED NEWT MITIGATION
SECTION 3: LLANFACHRAETH
1:5,500
DO NOT SCALE
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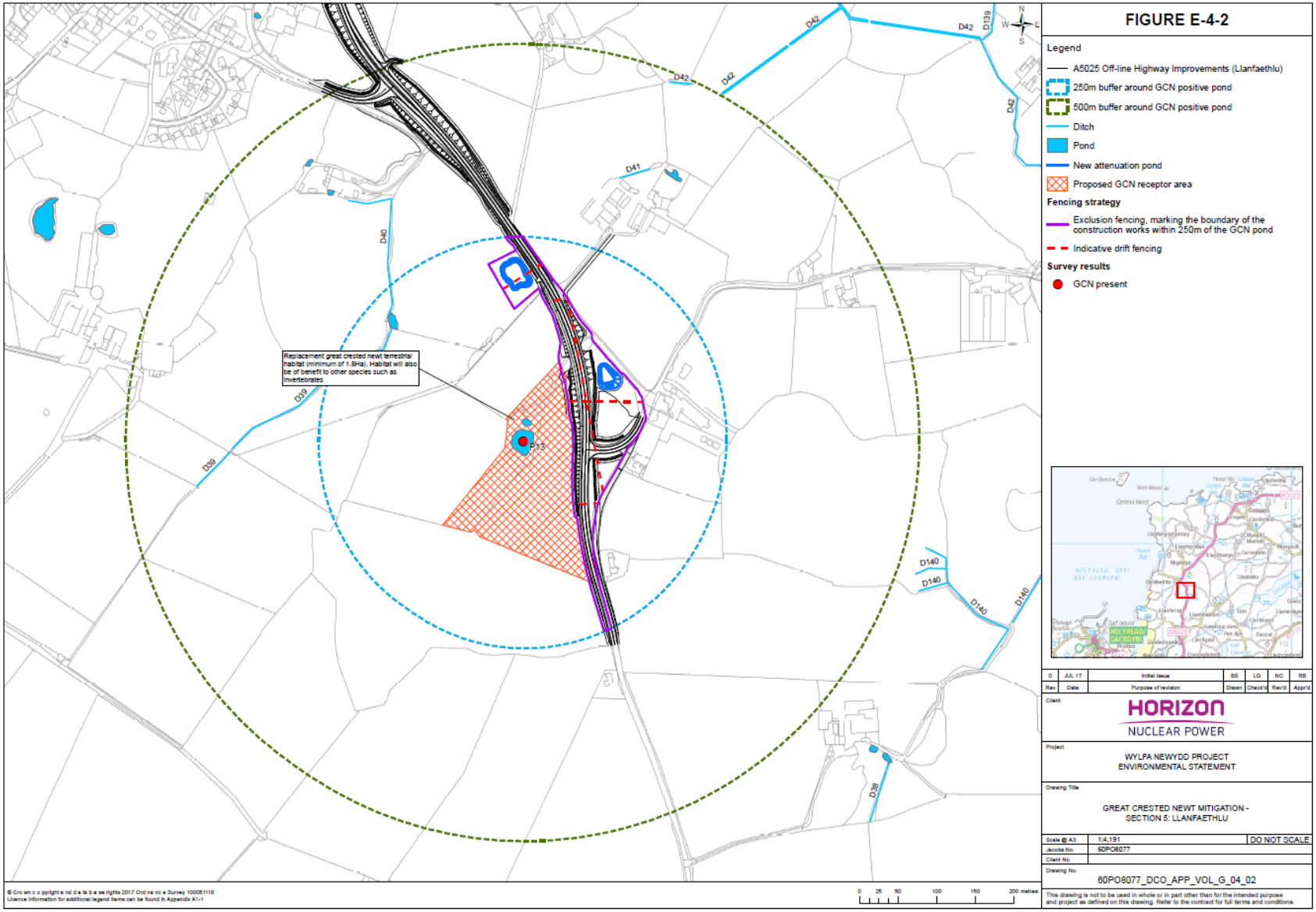
FIGURE E-4-2
Legend
A5025 Off-line Highway Improvements (Llanfaethlu)
250m buffer around GCN positive pond
500m buffer around GCN positive pond
Ditch
Pond
New attenuation pond
Proposed GCN receptor area
Fencing strategy
Exclusion fencing, marking the boundary of the construction works within 250m of the GCN pond
Indicative drift fencing
Survey results
GCN present
Replacement great crested newt terrestrial habitat (minimum of 1.8Ha). Habitat will also be of benefit to other species such as invertebrates
P13
D39
D40
D41
D42
D139
D140
HORIZON
NUCLEAR POWER
WYLFA NEWYDD PROJECT
ENVIRONMENTAL STATEMENT
GREAT CRESTED NEWT MITIGATION - SECTION 5: LLANFAETHLU
1:4,191
DO NOT SCALE
60PO8077
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F Post-development site safeguard

F.1 Habitat/site management and maintenance

F.1.1 Horizon would have sole responsibility for future maintenance of the surrounding habitats and landscaping.

F.1.2 The A5025 Off-line Highway Improvements has a Landscape and Environmental Master Plan (figures G1-4a-j (Application Reference number: 6.7.48)) and a design approach and landscape strategy (appendix G10-9 (Application Reference Number: 6.7.41)) which details the commitments to protect and sensitively manage retained vegetation and new landscaping for biodiversity benefits, including the protection and enhancement of GCN breeding, foraging and connective habitats.

F.2 Population monitoring

F.2.1 Future monitoring of the three waterbodies supporting GCN and the success of the mitigation/compensation measures (in accordance with the key performance indicators) would be carried out by GCN licensed ecologists.

F.2.2 The *GCNMG* (English Nature, 2001) sets out the requirements for monitoring of medium populations of GCN like those found at Section 3 Llanfachraeth and Section 5 Llanfaethlu. The impact assessment made in the background and supporting information section concludes a medium scale impact, and the monitoring proposals are based on this assessment. Population size class assessment surveys are required for four years. As such, the following monitoring programme is required as shown in Table F-1.

Table F-1 GCN population monitoring requirements - in accordance with the *GCNMG* (English Nature, 2001)

Year post translocation	Waterbodies	Type of monitoring
1 (2020)	Llanfachraeth – Pond 10, Ditch 25 and new ponds created Llanfaethlu – Pond 13 and new pond created	Presence/absence established by either conventional or eDNA methods, followed by population size class surveys where GCN were recorded. Monitoring to determine prescence of fish.
2 (2021)	Llanfachraeth – Pond 10, Ditch 25 and new ponds created Llanfaethlu – Pond 13 and new pond created	Presence/absence established by either conventional or eDNA methods, followed by population size class surveys where GCN were recorded. Monitoring to determine prescence of fish.

Year post translocation	Waterbodies	Type of monitoring
3 (2022)	Llanfachraeth – Pond 10, Ditch 25 and new ponds created Llanfaethlu – Pond 13 and new pond created	Presence/absence established by either conventional or eDNA methods, followed by population size class surveys where GCN were recorded. Monitoring to determine prescence of fish.
4 (2023)	Llanfachraeth – Pond 10, Ditch 25 and new ponds created Llanfaethlu – Pond 13 and new pond created	Presence/absence established by either conventional or eDNA methods, followed by population size class surveys where GCN were recorded. Monitoring to determine prescence of fish.

F.2.3 An annual report would be submitted to NRW during the monitoring period and a licence report would be completed and submitted to NRW once all licensable activities had been completed.

F.3 Post-development mitigation contingencies

F.3.1 If the monitoring works demonstrated that mitigation measures had proven to be unsuccessful when compared to the key performance indicator criteria, appropriate remedial action would take place. This would take the form of the following types of measure but would be decided on a case-by-case basis as determined by an experienced and licensed GCN ecologist (including consultation with NRW, as necessary):

- review monitoring data (in particular from site visits) to assess whether any on site conditions are/had become unsuitable e.g. water levels; water quality; vegetation cover; presence of fish or invasive species; rubbish dumping; pollution; etc.
- take corrective actions, if appropriate. This could include planting of additional vegetation to improve connectivity to the ponds to assist colonisation and dispersal; fish removal; management of ponds to improve suitability e.g. removal of vegetation that may be shading out aquatic plants needed for egg laying.

F.4 Mechanism for ensuring delivery of post-development works

F.4.1 Whilst there are currently no legally binding commitments to ensure the delivery of post-development works, Horizon fully recognises the legally binding nature of the commitments and conditions of the method statement upon granting of any licence. Furthermore, as stated in section E3, Horizon is committed to the delivery of the mitigation and compensation measures outlined in this document

as they are a pre-requisite to permit successful completion of the proposed scheme, and to demonstrate Horizon's full compliance with protected species legislation.

G Timetable of works

Table G-1 Timetable of works

Action	Dates	Comments
Cessation of grazing within the GCN enhancement areas	January 2019	Cessation of grazing during construction would allow a coarse sward to develop within these areas.
Within 250m of GCN waterbodies. Installation of trapping layout within development footprint.	March 2019 – approximately two weeks.	To include a fingertip search of proposed fence line and installation of perimeter exclusion, temporary exclusion and drift fence, pitfall traps and refuges in compliance with the GCNMG (English Nature, 2001).
Within 250m of GCN waterbodies. Terrestrial trapping of GCN. Aquatic trapping of GCN.	March - June 2019 – minimum of 60 trapping nights.	Both are small populations so require a minimum of 60 suitable trapping nights. A suitable trapping night is where the temperature is at least 5°C and ideally there has been recent rainfall such that the ground is damp. Obtaining five consecutive clear days with no GCN captures is required at the end of the trapping period.
Within 500m of GCN waterbodies. Destructive search phase away from waterbodies.	June - July 2019.	Hand and machine dismantling of discrete habitat features to search for GCN under supervision and direction of licensed GCN ecologists.
Release of GCN.	March - July 2019 – 5 month period where GCN may be encountered.	Captured GCN would be released in to receptor areas at Llanfachraeth and Llanfaethlu.
Land declared clear and handed over to construction.	July 2019.	Once all GCN capture measures had been exhausted (trapping and translocation followed by destructive search phase).

Action	Dates	Comments
Landscape planting completed for the Section 3 and Section 5 Highway Imropvements.	Section 3 Llanfachraeth - Dec 2020; Section 5 Llanfaethlu - May 2020.	GCN exclusion fencing would be removed around so that GCN can colonise additional new habitat areas.
Monitoring	2020 – 2023 (four years)	All existing waterbodies and new ponds at Llanfachraeth and Llanfaethlu. Presence/absence established by either conventional or eDNA methods, followed by population size class surveys where GCN were recorded.

H Land ownership – mitigation site/compensation site

H.1 Mitigation site/compensation site ownership

H.1.1 All of the GCN mitigation areas would be in the ownership of Horizon who would have the responsibility for their future maintenance and monitoring.

H.2 Mitigation site/compensation ownership post construction

H.2.1 All of the GCN mitigation areas would be in the ownership of Horizon who would have the responsibility for their future maintenance and monitoring.

I References

English Nature. 2001. *Great crested newt mitigation guidelines*. English Nature: Peterborough.

Froglife. 2001. *Surveying for (Great Crested) Newt Conservation, Froglife Advice Sheet 11*, Froglife: Halesworth.

Langton, T.E.S., Beckett, C.L. and Foster, J.P. 2001. *Great Crested Newt Conservation Handbook*, Froglife: Halesworth.

Oldham R. S., Keeble J., Swan M.J.S. and Jeffcote M. 2000. Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal*. 10 (4): 135-155.

Russell L, Starnes T and Wilkinson J (2017). *Spatial Action Plan for Great Crested Newts in Anglesey, A Manual for Achieving Favourable Conservation Status*. NRW Science Report Series. Report 76 pp 69, NRW, Bangor.

J Annexes

J.1 Pre-existing survey reports

J.1.1 Pre-existing survey reports are in Volume G appendix G9-2 (Application Reference Number: 6.7.23) and G9-5 (Application Reference Number: 6.7.26).

J.2 Raw survey data

J.2.1 N/A – all available data is contained within the pre-existing survey reports contained in Volume G appendix G9-2 (Application Reference Number: 6.7.23) and G9-5 (Application Reference Number: 6.7.26).