



Template Method Statement to be used within a Great Crested Newt Development Licence Application

This template Method Statement is to be used to form part of your Licence Application for a European Protected Species Development Licence. It will be used to determine the impact of the application on the favourable conservation status of the species concerned (Regulation 53(9) (b) of the Conservation of Habitats and Species Regulations 2010). It must be prepared by a consultant ecologist or other suitably qualified person. You are strongly advised to refer to the **Great Crested Newt Mitigation Guidelines**¹. Please submit your Application and supporting Method Statement electronically to the contact details provided below.

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Method Statement Title:	Consultation Response - DRAFT
Method Statement Version Number:	
Method Statement Issue Date:	
Site Address:	Land Off Rackery Lane, Llay, Wrexham

¹ Great Crested Newt Mitigation Guidelines (NEWT1) available from Natural England website

Background and Supporting Information

A Executive Summary.

No more than one side of A4

Aviagen Turkeys Ltd is proposing to develop a turkey rearing facility on land to the north of Rackery Lane, Llay, Wrexham.

The applicant is seeking full planning permission for the turkey rearing facility. This requires site clearance, the creation of access into and through the site, construction of turkey rearing sheds and staff facilities and car parking. Permission is also being sought for the water treatment facility that is required to provide a sustainable means of managing 'dirty' water generated by the site. This will ensure adjacent catchments are protected from any potential impacts from the runoff from the site and provide some small-scale ecological benefits through the reedbed and willow copse habitats being used as part of the wetland treatment scheme and the sympathetic grassland management regime.

Landscaping proposals include tree and shrub planting, hedgerow creation and enhancement and grassland creation (both for biodiversity gains and amenity).

There are no ponds on the application site, however, there are five ponds within 250m of the site boundary, a number of which are known to support populations of GCN. Amphibian surveys identified GCN in two ponds within 250m of the site (P4 and P5) and consultee responses established that GCN are present in a third pond P3.

The site primarily consists of improved grassland (*Lolium* leys) for silage, and is bounded by eight hedgerows with a further two hedgerows which bisect the application site, one of these hedgerows (H4) would be lost to the proposals. Most hedgerows are associated with dry, damp and flowing ditches.

The site in its entirety is over 100m from the nearest pond supporting GCN and represents low to medium quality intermediate and distant habitat (grassland = low and hedgerows/ditch associations = medium). As GCN are known to be in the wider landscape it is possible that GCN forage and disperse across and to a lesser extent shelter within the site. Consequently the proposed works (site clearance, construction and to a lesser degree operation) have the potential to harm or kill individual GCN.

In the longer term the conversion of 1.52ha of improved grassland to turkey rearing shed, staff facilities, access road and car parking would reduce the extent of the habitat for GCN.

A range of mitigation measures are proposed to nullify the short and longer term impacts on GCN, and to ensure that there is no detrimental effect on the conservation status of the species in the local area. A compliance auditing mechanism will be implemented to monitor the implementation of the mitigation measures.

The Conservation of Habitats and Species Regulations 2010

The development layout has been designed to minimise long term effects on GCN dispersal and foraging, by retaining undeveloped land along the main likely dispersal routes around the site and between the site and P5 to the west.

Other mitigation measures will comprise:

- a) GCN removal and exclusion works prior to any site clearance or earthworks. This will ensure that individual GCN are not affected during construction. GCN removal will be achieved by pitfall trapping, artificial refugia and hand searching.
- b) The construction of four artificial amphibian hibernacula.
- c) Planting of c.2.0 ha of diverse grassland, native trees and shrubs, which will provide new foraging and sheltering resources for GCN in the medium to long term.
- d) Applying appropriate grassland management, to maintain key areas in a condition suitable for GCN. Post development, a 10-year habitat management and maintenance plan will be applied across the site. The off-site GCN populations will also be monitored every other year, for six years (three years of survey) using both bottle trap and torch survey methods, this will provide information that can be used to inform habitat management, and also deliver data that can be used by the UK government when discharging its obligations under EU legislation.

B Introduction

B.1 Background to activity/development

The development proposals are for the conversion of arable land north of the village of Llay, near Wrexham to a new turkey farm comprising six new poultry sheds, landscaping proposals and a water treatment system.

Aviagen Turkeys Ltd drawing 'Outline Landscaping Proposals' ALLP 1502-R4 (Figure B1) provides a description of the outline proposal for the site, which presently comprises an area of approximately 6.44ha of improved agricultural grassland enclosed by hedgerows and ditches. The proposed development would result in the loss of 1.52ha of improved grassland and a 100m section of hedgerow.

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

Please ensure sufficient detail is provided on the proposed works e.g. construction of buildings, roads, fences etc. Include current status of planning permission or other consents (if applicable) and any outstanding conditions/reserved matters. Include timescales and order of work.

Figure B2 shows the approximate numbered locations of the licensable works on site. The works listed below would commence upon completion of GCN removal works from the relevant areas. The expected sequence and timescales are as follows:

- 1) Removal of c.100m of hedgerow H4 and ditch bank clearance - (Figure B2) two to three days - under ecological supervision.
- 2) Creation of access into site (two weeks)
- 3) Site clearance and topsoil strip (five to six weeks)
- 4) Construction of turkey rearing sheds, staff facilities and access road/car-parking, approximately (1.52ha) and perimeter fence (26 weeks)
- 5) Construction of water treatment facility - red beds, willow beds, gravel filter drains (26 weeks)
- 6) Bunding of landscaped area immediately north of Rackery Lane (26 weeks)
- 7) Pipe carrying water from the turkey rearing facility to the water treatment beds crosses H9 and ditch

B.3 Actions requiring licensing

E.g. disturb, capture, translocate, damage or destroy breeding site or resting place (terrestrial and/or aquatic), kill. Briefly explain why these actions are necessary.

Disturb - hand search of natural refugia during newt removal works

Disturb - traps - pitfall trapping for the purposes of newt removal from development site

Disturb - by hand - removal of newts from artificial refugia and pitfall traps

Disturb - exclusion - by installation of amphibian fencing

Capture - by hand - during hand searches

Capture - during pitfall trapping

Capture - by hand - during pitfall trapping

Capture - by hand from artificial refugia

Transport/Translocate - - by hand within the applicants adjacent land ownership during trapping and translocation works

Destroy - terrestrial resting place - during perimeter fence installation and then exclusion by TAF

Destroy - terrestrial resting place - drift fencing installation

Destroy - terrestrial resting place - during destructive hand search

Damage - terrestrial resting place - exclusion by TAF

Damage - terrestrial resting place - drift fence installation

Damage - terrestrial resting place - during destructive hand search

These actions are required to remove GCN from the areas that will be affected by the development and landscaping works and to ensure that GCN (and other amphibians) are excluded from these areas during construction.

C Survey and site assessment

C.1 Existing information on great crested newts at the survey site.

Provide records from local environmental records centres, predictive modelling, local herptile groups, previous survey work by the applicant or others. Include records from within 2km.

Figure C1 presents the desk study results provided by COFNOD

Appendix I presents relevant GCN desk study data provided by COFNOD

COFNOD were able to provide 13 records of GCN within a 2km radius of the centre of the site. They ranged from between 1988 and 2007 with the closest being a record at a pond c.300m to the west of the site boundary.

Consultation has established that pond P3, for which access was not obtained during survey, has been surveyed previously for a past planning application and GCN were recorded from this pond. The GCN survey report submitted on behalf of Aviagen Turkeys Ltd, for this application, recognised the potential of the pond and recommended an assumption of presence when preparing the mitigation strategy.

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

Two SSSI are present within the search area. Llay Bog SSSI is located 1.5km south of the site, and Chwarel Singret SSSI is located 1.8km west of the site. The site itself falls within an SSSI Impact Risk Zone, which will affect proposals that involve combustion or air pollution.

C.3 Objectives of the survey E.g. to determine presence/absence of all sub-populations of great crested newts likely to be affected, an estimate of population size and their usage of site (e.g. breeding, hibernation, and foraging).

To establish presence or likely absence of GCN on site and if present, to determine the population size class. There are no ponds on site, however, there are a number of ponds within 300m of the site boundary.

C.4 Scaled plan/map of survey area

This should be of appropriate scale and orientation with integral or separate location map at 1:50,000 or 1:25,000 scale and aerial photographs.

See supporting Figures: C4.1 Site Overview, C4.2 Survey Area/Development site and C4.3 Aerial Photograph.

C.5 Site/habitat description (relevant to great crested newts). This should be based on day-time visits (to include description of site and habitat relevant to great crested newt ecology). Include annotated photographs if applicable.

The Phase 1 Habitat map identified the habitats on site (Figure C5) and Plates C5.1 and C5.2 provide views typical of the entire site.

Appendix II Phase I Habitat Report (PAA 2016a) and Appendix III GCN Survey Report (PAA 2016b) provide detailed information regarding the application site.

The application site comprises three improved grassland fields (*Lolium* leys at time of survey), bounded by mixed age hedgerows but primarily well established, mature hedgerows with c.50 plus standard trees throughout.

All hedgerows with the exception of H7 and H10 are associated with dry, damp and wet ditches and all hedgerows, with the exception of the western half of H7, have a 1-2m field margin of tall herbs, bramble patches and rank grass; collectively they form a network of suitable habitat, primarily around the perimeter

but also through the site. This association of hedge, ditch and margin represents Moderate quality terrestrial habitat.

Improved Grassland - the majority of the site, c.6ha is improved grassland grown for silage. The fields are intensively managed with very few species besides *Lolium*, including *Taraxicum*, *Ranunculus* and *Rumex* species.

C.6 Field survey(s).

Include survey method (night counts, bottle trapping, egg surveys, site inspections), timings (day/evening), weather conditions (wind, rain, air and water temperature – tabulated for multiple survey visits), personnel involved (provide individual licence numbers, if held) and details of experience/competence in this type of work, and equipment used (type and power of torch). Also record any occurrence of non-native invasive plant species or fish, and structures or features that may cause incidental capture or killing, e.g. gully pots. Also include any constraints and justifications for departures from best practice.

The survey methods were informed by Froglife's Great Crested Newt Conservation Handbook (Langton *et al* 2001) and Natural England's Great Crested Newt Mitigation Guidelines (English Nature 2001).

The GCN survey was undertaken to CCW's Level IIIA methods, supplemented by egg searching, a particularly effective method of determining breeding, if survey timing allows.

C.7 Survey Results.

Summarise findings in table form (if appropriate); provide clear, annotated and cross-referenced maps/plans/photographs to show locations of breeding sites, and habitat maps. Raw data to be appended.

Appendix IV presents survey data for all survey visits and methods deployed at all ponds.

Table C7.1 - Summary of conditions across all 6 survey visits

Survey Number	Date (Evening and Morning)	Weather Conditions
1	3rd and 4th May 2016	12°C overnight minimum temperature, mild, dry
2	13th and 14th May 2016	6°C overnight minimum temperature - dry, cool
3	15th and 16th May 2016	7°C overnight minimum temperature, dry, cool
4	26th and 27th May 2016	15°C overnight minimum temperature, dry and breezy
5	1st and 2nd June 2016	15°C overnight minimum temperature, clear warm night
6	6th and 7th June 2016	14°C overnight minimum dry, warm, overcast

Table C7.2 Summary of HSI scores

Pond Number	Index Score	Suitability for Supporting Breeding GCN	GCN Presence
1	0.55	Below Average	No
2	0.25	Poor	Unlikely
3	No Access	No Access	Likely
4	0.80	Excellent	Yes
5	0.69	Average	Yes

Table C7.3 Summary of Survey Data

Pond	Maximum Count (Adult)		Presence	
	GCN	Smooth Newt	Frog	Toad
1	0	7	Y (Larvae)	0
2*	0	0	0	0
3	N/A	N/A	N/A	N/A
4	10 (Torch)	8	0	0
5	27 (Torch)	4	Y (Larvae)	Y (Larvae)

* Torchlight surveys only on 2 occasions

C.8 Interpretation/evaluation of survey results (Great crested newt Mitigation Guidelines section 5.8). Provide count/estimate of great crested newt numbers, status of site (e.g. breeding, foraging, resting or hibernating), population significance, constraints on survey (e.g. time of year, cold weather, access problems – justify as necessary).

There are no ponds on site or immediately adjacent to the site boundary.

Turbidity was high in pond 2 during torching - probably due to carp.

The presence of young bulls prevented torching of pond 4 on 13/14th May and as bottle traps had been chewed and were floating in the pond on the morning of the 14th, bottle trapping was not undertaken on 15th/16th May as bulls were still present.

Great crested newts were recorded from ponds 4 and 5 on all six survey visits. The maximum count of 27 GCN (by torching) in pond 5 places the population in a Medium population size class. Habitat quality and extent around pond would suggest sufficient habitat available that the application site at 310m away does not represent a particularly high quality habitat that GCN would be expected to disperse to in significant numbers. However, it is possible that animals may be dispersing through the site or taking refuge in the hedgerow network.

The maximum count of ten GCN (by torching) in pond 4 places the population in a Small population size class.

GCN eggs were recorded in P4 and P5.

There were no GCN recorded in P1 in the first four survey visits.

Permission to survey was not obtained for P2, although numerous attempts were made to contact Llay Angling Club. The pond is a coarse fishery, regularly attended by anglers day and night. The water was turbid, probably due to the dense Cyprinid fish population - particularly carp species observed in the waterbody. Pond 2 was subject to torching on two occasions when anglers were not present.

Pond 3 was not surveyed and it was not possible to identify the land owner despite a number of followed 'leads'. Furthermore, the pond was enclosed by chain link fencing and locked gates. The GCN survey report recommended an assumption of presence in P3 given the survey results and desk study data.

Habitat in the immediate vicinity of ponds 2, 3, 4 and 5 is considered to be of high quality. The habitat surrounding P1 is limited in extent and would be considered to be of low quality as it is shaded, sparsely vegetated and on steep banking for most of the thin margin.

The majority of the intervening habitat (between ponds and between ponds and the site) is improved, intensively managed grassland or grazed pasture which offers variable low to medium functionality for GCN. Hedgerows and associated features such as margins and ditches (none of those observed had potential to support breeding GCN) are also of Medium quality.

- P1 is within an improved *Lolium* Ley. It is surrounded by a thin margin c.50cm-100cm of steep banking occupied by dense hawthorn and willow scrub, which limits the ground flora below.
- P2 is known as Llay Reservoir and is a coarse fishery. It is turbid, with little evidence of submerged macrophytes, it has steeply sloping margins and is heavily fished.
- P3 Although not directly accessed, review of aerial photography indicates a central pond within a dense scrub patch.
- P4 is within improved grazed pasture with sparse trees and scrub around the margins. On the southern edge of the pond the trees/scrub cease and there is a diverse assemblage of submerged macrophytes.
- P5 a large waterbody within mature broad-leaved woodland. During survey it looked to have expanded into the surrounding woodland. Locally distributed and sparse submerged macrophyte patches were observed around the waterbody.

Desk based returns and consultation have been supported by the findings on survey, establishing that there are GCN populations to the west and south of the site and in the wider landscape.

Cluster Rationale

Ponds 4 and 5 are separated by c.310m of intervening habitat and the B5373 Rackery Lane and are not, therefore, considered to be in a pond 'cluster'. Pond 4 may be more appropriately associated with the ponds that lie to the west, rather than with the site as there are no physical barriers to dispersal.

It is considered that ponds 1 and 2 and potentially 3 could be categorised as a cluster. Pond 3 is c.100m from pond 2, so sufficiently close, however, the B5373, Rackery Lane lies between ponds 2 and 3.

The B5373 is a relatively busy road which runs northwest to southeast along the southern boundary of the proposed development site, it lies between the site and GCN populations associated with P3 and P4. Numerous studies (Langton 2002, Fahrig *et al* 1995, Hels and Buchwald 2001) have established roads as a major impediment to amphibian dispersal and survival.

Some studies have found that even low traffic volumes may be sufficient to cause high levels of amphibian mortality. On a road in the Netherlands near a breeding pond for common toads (*Bufo bufo*), a flow of ten vehicles per hour resulted in 30% mortality of migrating females and the author projected that a flow of 60 vehicles per hour would incur 90% mortality (Van Gelder 1973). Due to a high level of variation among species for mortality rates in response to traffic levels, mortality rates of some species can increase, decrease, or remain constant depending on the species. Mazerolle (2004) was able to detect interspecific variation in mortality rates at traffic flows as low as five to 26 vehicles per hour. Whilst traffic flow data were not available for this stretch of the B5373 it is anticipated that vehicle traffic would significantly exceed the quoted figures

Extrapolating from the study of toads, it might be appropriate to consider a higher mortality level for GCN as they would require greater time to traverse the road. Furthermore pond 2 is not a suitable breeding pond for GCN and pond 1 returned no GCN during the survey and thus GCN are less likely to move between ponds 3 and 4 and either of ponds 1, 2 or the application site.

It is considered likely that the B5373 and the intervening distance and habitat quality are environmental factors that would reduce the ability of animals to reach the site and reduce the functionality of the site in the context of the GCN population(s) associated with P3 and P4.

D Impact assessment – potential impact of proposed works in absence of mitigation/compensation. See Great Crested Newt Mitigation Guidelines (section 6.2)

Figure D1 identifies the development footprint and landscaping proposals and also those areas of the site which fall within the following categories;

- Immediate terrestrial habitat up to 50m from a breeding pond
- Intermediate terrestrial habitat - 50-250m from a breeding pond

- Distant terrestrial habitat over 500m from a breeding pond

D.1 Short-term impacts: disturbance

E.g. artificial light, restricting access to feeding or breeding sites, sheltering habitats and dispersal corridors.

Site Clearance and Earthworks

Site clearance and earthworks undertaken prior to the main construction activities, especially those associated with the removal of H4 and the associated ditch clearance and the laying of a pipe through H9 and the associated ditch (carrying water to the treatment beds) would be likely to kill GCN and destroy resting sites in these areas

Any newts present in the areas to be cleared for the water treatment facility (reed and willow beds and gravel filters) would be similarly harmed or killed. However, It is considered relatively unlikely that the construction of the water treatment facility would harm GCN because of the nature of the habitat to be removed i.e. improved grassland, the small footprint and the relatively large distance (over 300m) from the nearest pond supporting GCN (P5). Once complete the reedbed and willowbed habitats will be available for use by GCN.

D.2 Long-term impacts: site modification

E.g. destruction or damage of part of breeding site or preferential sheltering/foraging habitats Note that impacts can be positive or negative as this is in absence of mitigation.

Loss/Damage of Terrestrial Habitat

Immediate Terrestrial Habitat - There is no impact upon any 'Immediate' terrestrial habitat (that is habitat within 50m) of any ponds supporting GCN. The nearest on site habitat to any breeding pond is over 100m away (from P3).

Intermediate Terrestrial Habitat - within this zone (yellow hatching on Figure D1) there will be a loss of 0.13ha of improved grassland to provide an access road to the rearing sheds.

To either side of the road there will be modified management and re-surfacing of the remaining improved grassland within this zone to diverse grassland, woodland and amenity grassland.

Distant Terrestrial Habitat - The remainder of habitat 'lost' to the proposals (1.39ha) or temporarily disturbed by them occurs wholly within this zone with regard to all of the ponds known to support GCN.

The conversion of up to 1.39ha of improved silage fields (to poultry sheds, staff facilities, car parking and access road), between 100m and 250m (plus) away from any breeding pond will have a medium to low adverse impact upon the populations of GCN. Few sheltering sites are likely to be affected in such homogenous grassland, however, foraging habitat would be lost and/or degraded.

The removal of c.100m of hedgerow H4 occurs within the Distant Terrestrial Habitat zone for all ponds (c.325m from ponds 3 and 4 and 375m from pond 5) would have a Low adverse impact upon GCN occupying habitats around the site.

The conversion of approximately 0.1ha of improved grassland to reed and willow beds and the installation of gravel land drains to receive water from the beds in the remainder of the 1.5ha field (most northerly field) will have a short-term negative impact in terms of potential disturbance and a positive long-term impact as the post construction habitat will provide greater functionality for local GCN with regard to the provision of cover, wetland features and forage opportunities.

Water requiring treatment will be delivered from a closed sub-terranean tank situated below hard standing at the northern end of the turkey rearing sheds, via a pipe, through H9 and associated ditch (Figure B1). The point at which the hedge/ditch must be crossed by the pipe represents moderate quality distant terrestrial habitat and so there is the potential for GCN to be harmed or killed during this activity.

The remainder of works in this area are assessed as low risk works because:

- a) they are relatively small scale, and

- b) are located about 300m from breeding pond P5 (closest GCN breeding pond) in a place where there is unlikely to be significant GCN presence (i.e. improved field interiors with few sheltering sites and not on likely dispersal route).

D.3 Long-term impacts: site loss

Impact on different sub populations to be taken into account at 2km, 10km, local, regional, and national level.

It is very unlikely that the long-term effects of the proposed development will impact upon the viability of surrounding GCN populations or metapopulations.

There will be a permanent loss of 1.5ha of improved grassland to provide the access road, turkey shed, staff facility and car parking.

There will be a modification of c.4.89ha of currently improved grassland to c.1.23ha of amenity grassland, c.1.66ha of diverse grassland with native tree and shrub planting, c.0.5ha of additional tree and shrub planting to augment and widen existing hedgerow habitats and enhance functionality and connectivity with the wider landscape.

There will be a conversion of approximately 1.5ha of currently improved grassland (the field at the far north of the site within which the water treatment beds will be sited) to willow beds, reed beds and gravel filter beds, located within a sympathetically managed grassland (management plan will identify appropriate timing of a single annual cut).

The majority of habitats on the site are of low functionality for GCN and are in the 'Intermediate' and 'Distant' zones (GCNMG) and, with the exception of H4 (lost) and H9 (temporarily disturbed), all hedgerows and associated features (ditches and margins), which are considered to represent functioning GCN habitat, are to be retained.

D.4 Long-term impacts: fragmentation and isolation

E.g. loss of ponds or terrestrial habitat including stepping stones and linear features such as hedges, tree lines, severance of migration routes by roads.

Based upon the analysis of GCN terrestrial habitat quality in the vicinity of GCN breeding ponds, those on the proposed development site and the intervening habitat, it is considered unlikely that there will be any long-term impacts. The majority of the proposed development site does not represent optimal or even moderate quality habitat and, with the exception of H4, all habitat that is considered moderate quality for GCN is to be retained and/or enhanced.

Given the distance between recorded GCN breeding ponds and the site boundary and the quality and functionality of the site's habitats and those habitats in between, it is considered that the proposed development does not fragment or isolate any known GCN populations and given the site's location with regard to those ponds surveyed and those further afield in the wider landscape, it is considered that currently the site offers limited value to local GCN populations.

Furthermore, with the exception of H4 and associated ditch (which will be in-filled), the habitat functionality that exists within the site will be retained (hedges, ditches and margins).

D.5 Post-development interference impacts

E.g. gully pots or other features that could effect incidental capture or killing, predation, disturbance, including those associated with recreation and human pressure.

There is an access road which will enter the site just off Rackery Lane and areas of hardstanding and car parking that will require drainage. The intention is to discharge surface water runoff to stone filter drains at the sides of roads/hardstanding with no kerbs.

Water Treatment System - Willow beds

The intention is to use one cell in the willow bed as a dedicated phosphorus zone with materials such as broken brick or lightweight aggregates/clay materials to act as adsorption surfaces as the phosphorus passes through the media. Having a dedicated phosphorus removal zone will help facilitate ease of removal

The Conservation of Habitats and Species Regulations 2010 as amended

once the adsorption capacity has been reached. This periodic replacement of the adsorption cells will pose a risk to GCN if undertaken at an inappropriate time of year.

Timing: To be undertaken in winter when GCN are not active. To form part of the habitat management plan commitments.

There may be a requirement for some gullies or linear drains in expanses of hardstanding. Where this is required wildlife friendly kerbs such as those manufactured by ACO (http://www.aco.co.uk/product_detail.php?id=52) or similar will be used.

Areas of grassland immediately around the turkey sheds will be mown regularly. This will be undertaken during daylight hours when newts are extremely unlikely to be present and will reduce the functionality and attractiveness of this habitat for foraging and dispersal.

D.6 Predicted scale of impact

Include impacts on species status at the site, 2km, 10km, local, county, regional and country levels.

See Figure D1.

Site: 'Immediate' habitat - no impact - there is no loss of 'Immediate' terrestrial habitat associated with any of the three ponds known to support GCN.

Site: 'Intermediate' terrestrial habitat - Impacts upon 'Intermediate' terrestrial habitat (in relation to P3 only) are associated with a small loss of 0.13ha to the access road and the conversion of the remainder of this area to landscaped areas including tree, shrub and diverse grassland planting and a small area of amenity grassland.

Site: 'Distant' terrestrial habitat - Medium impact caused by loss of hedgerow H4 and associated ditch and by temporary disturbance to hedgerow H9 and associated ditch to lay water treatment pipe.

Two kilometres, 10km and wider geographical scales: no wider impacts upon metapopulations identified.

Delivery Information - Mitigation, compensation and monitoring

Description of how the impacts will be addressed in order to ensure no detriment to the maintenance of the population at a favourable conservation status.

E Works to be undertaken

Please identify which works will be undertaken or supervised by a licensed ecologist

E.1 Great Crested Newt capture and exclusion (if applicable).

Timings, effort, methods to be employed, reasonable avoidance schemes or measures for great crested newts (fencing, fence maintenance, logging captures, inspection and maintenance of fences), locations of receptor sites etc. Include diagrams to show locations of draft and exclusion fencing, pitfall trap design and trap density. State if site based weather stations are used to demonstrate appropriate trapping conditions.

The objective of the fencing and pitfall/refugia design is to capture and remove GCN from across the entire construction area and to exclude them from accessing the proposed development site.

METHODS: Figure E1 identifies the exclusion and capture design for the scheme to include;

- Perimeter fencing to exclude GCN from beyond the site boundary.
- Internal drift fencing to compartmentalise site and identify any patterns of use of the site by GCN.
- Pitfall traps and artificial refugia to be used to capture GCN.

The ground preparation and installation of all fencing and pitfall traps will be overseen by a suitably qualified and experienced ecologist.

Site Entrance, Site Clearance, Earthworks and Construction/Excavation to include turkey rearing and staff facilities, access road, car parking, water storage tank and reedbed and willowbed treatment system and gravel filter drains.

A 'newt gate' will be installed across the site access during the construction period. This will typically consist of a field gate or similar which will be made newt proof by use of a sand-filled pocket at the base of the gate to seal the base of the gate against the ground. The gate will be closed overnight. The seal will be secured with strong cable ties and will be regularly inspected and its condition logged throughout trapping.

Timing: Trapping and hand searching to be undertaken between February and October (subject to suitable conditions).

Effort: Minimum 60 suitable days trapping, as per the GCNMG for a Medium population, with five nil capture days (again suitable).

Hand search: to follow completion of trapping and of suitable resting places only - up to three days (there are unlikely to be many suitable sheltering features within the grassland element and of those habitats which provide potential resting places, only hedgerow H4 and associated ditch will be lost and hedgerow H9 (Plate E1 shows H9) and associated ditch will be temporarily disturbed by the installation of a pipe delivering water to the reed and willow bed treatment cells. (Figure B2 shows the pipe route from the poultry sheds travelling north towards the reed and willow beds and Figure C5 shows the location of H9 which was dry at the time of survey).

Personnel: trapping and hand searching will be undertaken by the licensed ecologist and an accredited agent who will be either an experienced licence holder or suitably trained and experienced individual. Training will be delivered by the licensed ecologist.

Recording: all captures to be logged to include; sex, developmental stage and compartment trapped from. Weather conditions including overnight temperature, precipitation and the presence of overnight/morning dew/condensation on vegetation/ground will be recorded.

Receptor Site: there are no ponds on site and, therefore, none lost to the development. All animals will be trapped from terrestrial habitats during the spring migration from hibernation sites to breeding sites. Captured animals will be released to the receptor site shown on Figure E1, which comprise a woodland block on the western boundary of the site and connects with four hedgerows currently (although H4 is to be lost) and provides dispersal routes to the wider landscape. The woodland will be enhanced with log piles/refuges within which captured animals will be released in order to provide enhanced functionality of the connecting habitat between the site and ponds 4 and 5.

Pitfall trap and fence design as per GCNMG, Figure 4, page 50. Traps will be placed at 10m intervals along perimeter and drift fence lines. Artificial refugia will be placed at 10m intervals along perimeter and drift fence lines.

Weather recording: a maximum-minimum thermometer will be stationed on site throughout trapping. Should it be necessary local on-line weather stations will be consulted.

Fence Inspection and Maintenance: the licensed ecologist/accredited agent will be responsible for fence checks through the trapping period. This responsibility will switch to the main contractor upon completion of trapping and destructive searching.

E.2 Great Crested Newt habitat

E.2.1 Receptor site modification, enhancement or creation.

Include details of new breeding sites and resting places e.g pond creation, design, layout, number, planting schemes, water supply and hydrology regimes, terrestrial habitat diversification or creation, habitat type, planting schemes, provenance of imported plants, consideration of biosecurity impacts.

Mitigation and compensation measures are required to address the loss and long-term damage to terrestrial habitats.

- 1) Construction of two artificial refugia, each at least 2x1x1m in size within woodland receptor area (Figure E2.1). This woodland is in the ownership of the applicant and is immediately adjacent to

the site. This will enhance the receptor area for trapped animals, provide cover and a direct route along hedgerows to P5 or less direct routes to P3 and P4 (B5373 lies between site and P3 and P4). This small woodland block previously held a pond but it has not been present for a number of years. The woodland comprises mixed-age and mature trees and scrub with a bramble and tussocky grass sward ground cover and provides many natural refuges in the form of deadwood and dense tussocks. It is considered that the provision of two artificial refuges in this copse will sufficiently enhance the site to receive animals through the trapping period.

- 2) Construction of two artificial hibernacula each at least 2x1x1m in size within the landscaped areas (Figure E2.1). This is to mitigate for loss of habitat function derived from the loss of H4 and associated ditch.
- 3) Planting of c.2.17ha of native trees and shrubs and diverse grassland (Figure E2.1). Woodland provides high value GCN terrestrial habitat and in the medium to long-term these areas will become significantly more valuable to GCN than the existing improved grasslands. The tree and shrub planting will generally be alongside hedgerows which surround the site and adjacent to the woodland block on the western edge of the site (Receptor area). This will enhance the functionality and development of both the existing hedgerows and the newly planted areas.
- 4) Conversion of 1.5ha of improved grassland to sympathetically managed grassland within which will be reed beds, willow beds and gravel filter beds (water treatment system).
- 5) Applying appropriate grassland management across the site (see Figure E2.1). Areas of dense unmanaged sward will be maintained in strategic locations within landscaped areas and retained areas, to provide cover and forage opportunities and to maintain and enhance connectivity with the wider landscape.

There are no impacts upon a breeding pond and therefore no aquatic habitat mitigation/compensation is proposed.

A biosecurity risk assessment and prescriptive method statement will be provided and addressed in a tool box talk to all site workers to be signed and adhered to. The importance of this issue will be stressed in the ecological toolbox talk delivered to all site workers. See E5 for further detail.

E.2.2 Temporary loss of breeding sites, resting places

Provide details of all reasonable avoidance measures to be undertaken throughout the period of works.

There is no loss of a breeding site nor direct impact upon one.

The following reasonable avoidance measures (RAMs) will be adopted during the construction period:

Procedure

- a) All contractors/operatives to be trained how to identify GCN, and how to respond if GCN are found during works.
- b) Higher risk areas, especially trenches and other open excavations that need to be left open over night, to be searched by the contractor prior to the commencement of works on a daily basis.
- c) A licensed newt worker is not considered to be required to implement these RAMs because the measures will only be adopted after GCN have been cleared from the site (i.e. after the pitfall trapping etc), and also mostly after the vegetation clearance. The risk of GCN still being present is thus low.

Contingency

- i) In the unlikely event of GCN (or other amphibians) being found, individuals will be placed in suitable, sheltered locations within the release area (Figure E1).
- ii) Records of GCN found and relocated will be kept and submitted as returns in respect of the surveillance of incidental capture.

E.2.3 Destruction of existing breeding sites, resting places

Full project programme including dewatering schemes(including filter specifications), programmes of terrestrial searches, fencing location and construction, transport methodologies, void infilling.

There is no loss of a breeding site nor direct impact upon one.

Terrestrial search: hand search to be undertaken using hand tools such as spades, forks, pick axes, trowels etc, by the licence ecologist and/or by an accredited agent(s) who will be adequately and appropriately trained or/and experienced. The licence ecologist or accredited agent will be assisted by one or more supervised assistants. Hand search programme is covered in E1 above.

Fence location and construction: see E1 above and Figure E1

Transport methods: GCN to be transported in buckets. Buckets to contain damp vegetation or other appropriate damp material to maintain suitable microclimate conditions. GCN to be release immediately after the completion of the pitfall trapping round each day.

Project Programme

Activity	Timing	Comments
Newt fence and pitfall trap installation.	Feb 17 - April 17	Upon receipt of licence
Construction of two refuges within receptor area	Feb 17 - April 17	Upon receipt of licence
Newt capture (pitfall trapping etc – outside hibernation/dormancy/aestivation periods only).	Feb 17 - June 17	To commence following installation of fencing and traps. Not between Nov-Jan inclusive (hibernation period).
Removal of internal drift fencing and all pitfall traps.	April 17 - June 17	After completion of pitfall trapping. Supervised or undertaken by licence ecologist or accredited agent. Not between Nov-Jan inclusive (hibernation period).
Hand searches of new and access and construction areas (potential sheltering sites only).	April 17 - June 17	Following completion of pitfall trapping. Not between Nov-Jan inclusive (hibernation period).
Construction of new access from B5373, and installation of newt gate across new access.	May 17 - Oct 17	Following completion of hand search in area.
Site clearance, re-grading and earthworks, and construction of turkey sheds, staff facilities and water treatment system .	May 17 - Oct 17	6-month programme.
Site checks and maintenance during construction.	May 17 - Oct 17	Inspection visits by licence ecologist. Exclusion fence monitored and maintained by main contractor.
Hand searches of reed/willowbed and gravel filter drains construction area.	May 17 - Oct 17	The scope of pitfall trapping in this location will be discussed with NRW as this area is considered very low risk.
Construction of treatment plant, reed/willowbed and new access.	May 17 - Oct 17	Following hand searches. Hand search to be repeated if these construction activities are phased.
Removal of exclusion fencing	Aug 17 - Oct 17	Following completion of all construction works.
Terrestrial habitat works – woodland and hedge planting.	May 17 - Oct 17	
Terrestrial habitat works – grassland sowing.	May 17 - Oct 17	Autumn or spring.
The licence triggers the commencement of the programme, although the date of issue cannot be know at present. The timings in this table are designed to accommodate a programme in which the licence is issued sometime between January and March 2017.		
The remainder of the programme will be determined by the 60 suitable days of pitfall trapping with five clear days at the end (dependent on both weather conditions and newt capture rate), and an earthworks and construction programme of an estimated six months.		

E.2.4 Scaled maps/plans

To show proposals for mitigation outlined above in relation to existing and proposed habitat features and in relation to the proposed development outline. A GIS data layer may be included with your application to illustrate locations of habitats in E.2.1 to E.2.3

Please refer to Figure E2.1

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

E.3.1 Measures to ensure compliance with this method statement.

This may require appointment of an external auditing scheme including audit key performance indicators, for medium, large scale or long term schemes e.g. residential development, pipeline construction or maintenance, way leaves for utilities, quarrying and mineral extraction.

Compliance will be monitored by the licensed ecologist, by undertaking site visits and through reports provided by the main contractors.

The following compliance auditing mechanism is proposed:

Auditor Details

Compliance auditing to be undertaken by the licence ecologist, supported by evidence provided by accredited agents, developer and contractor.

Compliance Audit Reporting Programme

Compliance audit reports to be compiled following each inspection by the compliance auditor, and/or under the following circumstances:

- a) In the event of major non-compliance being identified
- b) At the end of the GCN removal works
- c) On removal of exclusion fencing, after the completion of the construction programme

Also see below for proposed compliance checks.

Scope of Compliance Audit Reports

The reports are to include the following information:

- a) The background to the site and project, and its extent.
- b) A completed table of performance indicators (see below), identifying compliance or noncompliance as appropriate, for each indicator.
- c) Any appropriate or necessary recommendations as regards the findings of the compliance audit, including, where necessary, measures to remedy any identified non-compliance.

Circulation of Compliance Audit Reports

- a) The developer (client)
- b) The main contractor (construction)
- c) Relevant ecological contractors and sub-contractors
- d) Natural Resources Wales
- e) Local Council ecology officer

Key Performance Indicators and Evidence Required

No	Performance Indicator	Evidence Required	Pass Yes/No
1	Pitfall trapping, refugia checks and searches for GCN to be undertaken in accordance with specifications set out in GCNMG (English Nature, 2001)	Log of activities including dates, times, personnel, number of GCN Transferred, sex and age class, weather conditions, capture locations/pitfall trap or artificial refuge number. Daily log of all newts trapped/found to be made available to NRW on request	
2	Amphibian fencing, pitfall traps and artificial refugia to be installed as per licence Method Statement (Section E and Fig. E1.1) and in accordance with specifications/advice set out in GCNMG.	Specification provided to contractor. Log of installation details, including dates of installation, dates of inspection/supervision by ecologist, and contractor details. Log of any deviations from specifications (i.e. non-compliance) and explanation/justification if required, and proposed action (if any). Dated photographic record of installation, also showing construction details and any deviations. Above logs of activities and photographic records to be made available to NRW on request.	
3	Inspection and maintenance of amphibian fencing and pitfall traps during GCN trapping/translocation period. All amphibian fencing to be inspected by ecologist at least every 24 hours and repairs to be completed within 48 hours of inspection.	Log of inspections and repairs to be maintained and made available to NRW on request. To include photographic record and plans identifying location of any damage and repair. Log of any deviations to be maintained, including justification/explanations (for example in the case of extensive damage which cannot be practically repaired within specified timescale).	
4	Pre-start briefing/tool-box talk to be delivered to contractors. To include fence check regime, fence maintenance and repair, what to do if a GCN is located during works, incident reporting, ecologist contact details etc.	Record of briefing to be made, including date and personnel involved.	
5	Inspection and maintenance of amphibian fencing and pitfall traps during construction period (i.e. following completion of GCN transfer).	Log of inspections and repairs to be maintained and made available to NRW on request. To include photographic record and plans identifying location of any damage and repair. Log of any deviation to be maintained, including justification/explanations (for example in the case of	

No	Performance Indicator	Evidence Required	Pass Yes/No
	All amphibian fencing to be inspected by site construction staff at least every 24 hours and repairs to be completed within 48 hours of inspection.	extensive damage which cannot be practically repaired within specified timescale). Above logs to be collated by the contractor and provided in weekly reports to the licence ecologist.	
6	Maintenance of exclusion fencing free of overtopping vegetation and/or other potential 'bridges' that could enable amphibians to re-enter the construction site.	Log and photographic record demonstrating mowing/vegetation clearance operations, and evidence that the exclusion fencing has been kept clear of vegetation or other materials that could enable newts to climb over the fence. Log to be provided to NRW on request.	
7	Approval for commencement of site preparation/clearance and construction works.	Written confirmation to be provided by the licence ecologist, that the GCN trapping requirements specified in the licence MS have been met, and that construction works may proceed. To be supported by log of trapping works as per item 1 above. Confirmation to be provided to NRW on request. The date that construction/site preparatory works commenced to be confirmed by contractor.	
8	Planting of native woodland in accordance with Fig. E2.1 in the MS, to mitigate loss/modification of GCN terrestrial habitat.	Confirmation of satisfactory completion of the planting by the landscape architect or developer, supported by photographic evidence. Note: no special site visit by the licence ecologist is proposed to audit this planting, although its implementation will be checked during newt surveillance/monitoring visits in the spring.	
9	Design of Artificial Amphibian Hibernacula to comply with GCNMG and the specification in the licence MS (E2.1).	Log and field observation to show that the dimensions of the created hibernacula are as specified, and that other construction details comply with specification.	

The following compliance checks are proposed as a minimum:

Fence and pitfall trap installation: the licence ecologist and/or the accredited agent will oversee and monitor the installation works. Checks will be made to monitor the start of the works, at one or more points during the installation process, and at the end to sign off the installation.

GCN trapping and other capture works: licence ecologist and accredited agent will monitor these works. If compliance issues arise then these will be reported immediately to the licence ecologist, by the accredited agent. Any compliance issues or departures from the MS will be rectified as soon as practically possible - this might include, for example, the reinstallation of damaged fences, or the resetting of flooded pitfall traps.

Earthworks and construction: the main contractor will send weekly reports to the licence ecologist, on

the condition of the fence, and on any compliance issues or departures from the MS.

Hibernacula construction: these works will be overseen and signed off by the licence ecologist or accredited agent.

E.3.2 Ensure that sufficient land has been acquired for compensation purposes

Provide scaled maps/plans

There is no requirement to compensate for any of the impacts identified. On-site mitigation proposed is adequate to address all medium to low impacts associated with the proposals. The mitigation measures incorporated into the new development are extensive new native woodland planting; artificial hibernacula and grassland management (see Section E2.1).

E.3.3 Ensure that designs of subsequent development are newt friendly

Do not include features likely to result in incidental capture or killing

Site drainage will be primarily through seepage to stone filters and dispersal to ground. Where surface drainage might be needed, for example large areas of hard standing around the staff facility building, only wildlife friendly kerb/gulley pot systems will be used.

Dirty water storage (from turkey sheds), prior to transfer to the treatment system will be in a closed sub-surface storage tank. This will be a sealed system that will not be accessible by newts.

E.3.4 Provide sufficient resources

To ensure effective site management and associated wardening and monitoring where relevant.

The final development will be managed by Aviagen Turkeys Ltd. There will be a daily staff presence who will periodically check the hibernacula/refuges to ensure that they are fit for purpose. A guide to the required condition and functionality will be provided by the licensed ecologist so that staff know what to look for and what to do should there be a requirement to address any issues.

A ten-year habitat management plan will identify habitat management and monitoring requirements and provide targets and milestones against which to measure the progress and functionality of the mitigation provided.

E.4 Mitigation contingencies

Describe any contingency proposals including circumstances when the contingencies will be instigated.

E2.2 describes the contingency measures that would be adopted in the unlikely event of GCN being found on the site during construction works.

Refer to RAMs in E2.2 for contingency measures in the event of GCN being found during construction.

E.5 Biosecurity risk assessment

Consider presence of non-native species and disease on site and actions to be undertaken that will prevent their spread onto or off the site

The following table lists those species that have been identified as having the potential to be imported during the construction phase of the project. The likely pathways and operational mitigation procedures are also identified.

This document will be appended to the contractors Construction Method Statement for use on site.

Species	Potential Contamination Pathway	Assessment of Risk of Introduction	Operational Mitigation Procedure
Himalayan balsam	Spread of species via construction machinery/movement of spoil. Introduction of seeds via contaminated soil.	Low. Himalayan balsam is not known to be present on site. Low. There are no requirements to import soil.	Ensure contractors know what Himalayan balsam looks like. If any plants are identified these should be pulled up and left to dry before the seeds set (July/August).
Japanese knotweed	Spread of species via construction machinery/movement of soil. Introduction of seeds via contaminated soil.	Low. Japanese knotweed is not known to be present on site. Low. There are no requirements to import soil.	Ensure contractors know what Japanese knotweed looks like. If it is identified on site, refer to the Environment Agency's Japanese Knotweed Code of Practice from: https://www.gov.uk/japanese-knotweed-giant-hogweed-and-other-invasive-plants .
Garden escapes (<i>Crocsmia</i> and Spanish bluebell)	Spread of species via construction machinery/movement of soil.	Low. Neither <i>Crocsmia</i> nor Spanish bluebell is known to be present on site. Low. There are no requirements to import soil.	Ensure contractors know what <i>Crocsmia</i> and Spanish bluebell look like. If any plants are identified these should be pulled up and left to dry before the seeds set (July/August) and location should be fenced off to prevent incursion of vehicles.
Amphibian Chytrid fungus (and other amphibian pathogens)	Poor biosecurity measures during newt trapping and handling, and monitoring.	Probably Low, but major impact if introduced.	Adopt good procedures including disinfection of equipment, keep disinfected equipment (e.g. buckets) separate and isolated from kit that has been used elsewhere and could be contaminated. Use vinyl gloves and don't use on more than one site. Adopt appropriate advice from ARG-UK Advice Note 4 on amphibian disease precautions. Report any signs of disease.

Please note that there is no requirement to address aquatic invasive species such as *Crassula helmsii* as there is no requirement to create or enhance any ponds.

F Post-development site safeguard

F.1 Habitat/site management and maintenance

Include ongoing land management proposals, details of who will be responsible for management and maintenance, on going running costs, site/structure ownership and monitoring development of new habitats.

The site will be managed in accordance with a ten-year management plan. To date this management plan has not been produced. However, it will be produced for submission with the licence application and will be implemented by Aviagen Turkeys Ltd. It will address the following:

Artificial Hibernacula - checks of all hibernacula/refuges to be undertaken in August-September annually to ensure that there is no damage and that the features are fit for purpose. Any issues to be reported and addressed prior to the hibernation period.

Grassland management - The objective will be to maintain a range of grassland sward structures, including swards with a dense structure at ground level within and contiguous with key GCN dispersal routes and foraging areas. Also, to control any colonising scrub.

Woodland management - The objective will be to provide additional and enhanced function by ensuring that the woodland develops as optimally as possible providing foraging, resting and hibernation sites.

The Conservation of Habitats and Species Regulations 2010 as amended

Hedgerow management - the objective will be to ensure that hedgerows retain their function with regard to potential GCN usage – i.e. ensure that they are continuous and sufficiently dense/healthy to maintain foraging and dispersal opportunities

F.2 Population monitoring

Include details of monitoring effort and timing, personnel involved and equipment to be used.

The following post project surveillance/monitoring of the GCN populations is associated with pond P3 (if access is available), P4 and P5:

- a) Torch survey and bottle trap survey each year, between mid-April and mid-May.
- b) Surveys to be undertaken in the year immediately following completion of construction, and then every year for a total period of not less than 6 years. (Note: based on the programme at E.2.3, the first monitoring session is likely to be in 2017).

Personnel: the licensed ecologist or other experienced ecologist who holds a current NRW GCN survey licence. This monitoring will both provide information that can be used to inform habitat management on the site, and also deliver data that can be used by the UK government when discharging its obligations under EU legislation, to monitor the status of GCN.

F.3 Post-development mitigation contingencies

Describe the action that you will take if monitoring results are unfavourable.

The possible cause(s) of the unfavourable results from monitoring surveys would be analysed to determine any link between the development and any poor results, and, if necessary, further investigations undertaken. Any subsequent action will clearly need to be based on the outcome of this analysis.

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

As appropriate e.g. Section 106 Agreement, to include details of who will undertake the work and reporting details, other covenants, contractual agreements or wardening schemes.

It is anticipated that this will be a condition of planning.

G Timetable of works

Include timings of all capture, development activities and mitigation measures, monitoring and other post development works

Activity	Timing	Comments
Newt fence and pitfall trap installation.	Feb 17 - April 17	Upon receipt of licence
Construction of 2 No. refuges within receptor area	Feb 17 - April 17	Upon receipt of licence
Newt capture (pitfall trapping etc – outside hibernation/dormancy/aestivation periods only).	Feb 17- June 17	To commence following installation of fencing and traps. Not between Nov-Jan inclusive (hibernation period).
Removal of internal drift fencing and all pitfall traps.	April 17 - June 17	After completion of pitfall trapping. Supervised or undertaken by licence ecologist or accredited agent. Not between Nov-Jan inclusive (hibernation period).
Hand searches of new and access and construction areas (potential sheltering sites only).	April 17 - June 17	Following completion of pitfall trapping. Not between Nov-Jan inclusive (hibernation period).
Construction of new access from B5373, and installation of newt gate across new access.	May 17 - Oct 17	Following completion of hand search in area.
Site clearance, re-grading and earthworks, and construction of turkey sheds, staff facilities and water treatment system .	May 17 - Oct 17	6-month programme.

Activity	Timing	Comments
Site checks and maintenance during construction.	May 17 - Oct 17	Inspection visits by licence ecologist. Exclusion fence monitored and maintained by main contractor.
Hand searches of reed/willow bed and gravel filter area of water treatment system	May 17 - Oct 17	The scope of pitfall trapping in this location will be discussed with NRW as this area is considered very low risk.
Construction of reed/willow bed area of water treatment system	May 17 - Oct 17	Following hand searches. Hand search to be repeated if these construction activities are phased.
Removal of exclusion fencing	Aug 17 - Oct 17	Following completion of all construction works.
Terrestrial habitat works – woodland planting.	May 17 - Oct 17	Autumn
Terrestrial habitat works – grassland sowing.	May 17 - Oct 17	Autumn
POST-CONSTRUCTION		
Year following completion of construction (2018)		GCN presence/absence monitoring in P3, P4 and P5 – torch and bottle trap.
Every other year thereafter, for a period not exceeding 6 years from date of completion of construction.		GCN presence/absence monitoring in P3, P4 and P5 – torch and bottle trap.
2017-2027		Approved aftercare and maintenance works.
The licence triggers the commencement of the programme, although the date of issue cannot be known at present. The timings in this table are designed to accommodate a programme in which the licence is issued sometime between February and April 2016.		
The remainder of the programme will be determined by the 60 suitable days of pitfall trapping with five clear days at the end (dependent on both weather conditions and newt capture rate), and an earthworks and construction programme of an estimated six months.		

H Land Ownership – Mitigation Site/Compensation Site

H.1 Mitigation Site/Compensation Site Ownership

If mitigation is to be undertaken at a location not owned by the applicant, you must provide the written consent of the relevant land owner(s). You must also provide details of how the mitigation is to be maintained in the long term (e.g. a legal agreement, transfer of legal interest).

Not applicable to this scheme. Receptor site is immediately adjacent to the development site and owned by the applicant.

H.2 Mitigation Site/Compensation Ownership post construction

If the ownership of the mitigation site will change after construction please confirm the identity of the prospective owners/occupiers together with timescales associated with transfer of occupancy or other forms of legal interest. You must also provide details of how the mitigation is to be maintained in the long term (e.g. a legal agreement).

Not applicable.

I References

Credits for source information.

Fahrig, L., Pedlar, J.H., Pope, S.E., Taylor, P.D., and Wegner, J.F., 1995. Effect of road traffic on amphibian density. *Biological Conservation* 73, 177-182.

Hels, T., and Buchwald, E., 2001. The effects of road kills on amphibian populations. *Biological Conservation* 99, 331-340.

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

Langton, T.E.S., 2002. Measures to protect amphibians and reptiles from road traffic. In *Wildlife and roads: the ecological impact*, 223-248. Sherwood, B., Cutler, D. and Burton, J.A. (Eds). Linnean Society Occasional Publication. London Imperial College Press.

Mazerolle, M.J., 2004. Amphibian Road Mortality in Response to Nightly Variations in Traffic Intensity. *Herpetologica*, vol. 60, No. 1, pp 45-53.

Natural England, 2001. *Great Crested Newt Mitigation Guidelines*. Natural England.

Van Gelder, J.J., 1973. A quantitative approach to the mortality resulting from traffic in a population of *Bufo bufo*. *Oecologia*, vol. 13, no. 1. 93-95.

J Annexes

J.1 Pre-existing survey reports

Appendix II Penny Anderson Associates Ltd, 2016a. Aviagen Turkeys Ltd, Land at Llay, Wrexham. Great Crested Newt Report.

Appendix III Penny Anderson Associates Ltd, 2016b. Aviagen Turkeys Ltd, Land at Llay, Wrexham. Extended Phase 1 Habitat Report.

J.2 Raw survey data

Appendix IV Survey Data

J.3 Other

Appendix I GCN Desk study returns from COFNOD