



Aberdeen Western Peripheral Route


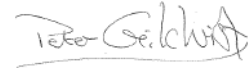

**Draft Licence for European Otter:
Goval Burn
Supporting information for a
licence application to destroy an
otter holt and two associated
couches**

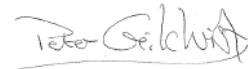

Document control sheet Form IP180/B

Client: Aberdeen City Council
 Project: Aberdeen Western Peripheral Route
 Title: Draft Otter Licence Application

Job No: B1033200

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1 Executive Summary

Construction works are scheduled at the Goval Burn to accommodate the proposed Aberdeen Western Peripheral Route (AWPR). This would result in the destruction of a single otter holt and two associated couches.

The populations of European otter (*Lutra lutra*) in Aberdeenshire are considered to be at favourable conservation status and, at present, are relatively common.

This licence application provides a method statement which outlines the measures necessary to maintain this species at a favourable conservation status and follows the guidance notes on providing supporting information published by the Scottish Government.

The following mitigation measures will be undertaken to prevent, reduce and offset the impacts of habitat loss on the populations of this species:

- Exclusion and demolition;
- Provision of two replacement holts;
- Provision of replacement foraging and riparian habitat; and
- Monitoring.

2 Introduction

2.1 Background

The Aberdeen Western Peripheral Route (AWPR) is a new 46km dual carriageway to the west of Aberdeen City with a connecting link to the A90 at Stonehaven proposed jointly by the Scottish Government, Aberdeen City Council and Aberdeenshire Council. It is anticipated that construction will start in 2010 and that the road will open for use in 2012.

The Aberdeen Western Peripheral Route (AWPR) was identified as a key element of an integrated transport system for the North East of Scotland following studies by the regional transport partnership NESTRANS. Overall proposals are called the Modern Transport System and were developed in recognition of unacceptable levels of congestion experienced on existing roads in and around Aberdeen. The Modern Transport System, which includes the AWPR, would remove traffic from the city centre by acting as a bypass.

In the design of the proposed AWPR alternative proposals have been considered for many years including, in the 1990s, proposals for a Western Peripheral Route connecting Charleston on the A90 south of Aberdeen, with Craibstone on the A96 west of Aberdeen, and in 2002 proposals to connect Craibstone with Blackdog on the A90 north of Aberdeen.

The combined corridor was named the AWPR and adopted by the Scottish Government (formerly the Scottish Executive) for promotion as a trunk road in 2003. Between October 2003 and December 2004 the proposals were refined within the corridor, at which time the Scottish Government requested that consideration be given to alternative corridors for the southern section of the route. In December 2005 following consideration of the alternative corridors and informal public consultation, the Minister for Transport selected the Milltimber Brae option for the proposed route corridor between Charleston and Kingswells with the addition of a link to the A90 at Stonehaven. The corridor between North Kingswells and Blackdog remained unchanged. Various options have been considered in the work outlined. This process has involved the production of a number of reports and papers that set out the

environmental, engineering and economic advantages and disadvantages of the options in question.

The final design being proposed jointly by the Scottish Government, Aberdeen City Council and Aberdeenshire County Council is for 46km of new dual carriageway in three sections. The road would pass for the majority of its length through agricultural areas.

In accordance with the Environmental Impact (Scotland) Regulations (1999), an Environmental Impact Assessment has been undertaken and otters were identified as a specific consideration within the resulting Environmental Statement (ES). Information about the ecological receptors that may be affected by the proposed scheme, the identification and assessment of potential environmental impacts and the identification of design features and mitigation measures to avoid or reduce adverse impacts or enhance beneficial impacts were all considered as part of the ES, in addition to the assessment of residual impacts.

The ES identified that as a result of the construction of the Goval Burn underbridge in the Northern Leg of the scheme, a single otter holt and two associated couches would be destroyed. Full details on this are provided in the AWPR ES (Jacobs UK Ltd., 2007).

At the point where the proposed Goval Burn underbridge crosses the Goval Burn, a Scottish Government licence is required in order to safely destroy a single otter holt and two associated couches and to ensure effective mitigation is implemented.

The purpose of this licence application is to present a clear outline of the measures and strategies proposed to mitigate the destruction of the otter holt and the two associated couches at Goval Burn. In addition, this document will satisfy the three conditions pertaining to the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) listed below:

- Reasons of Overriding Public Interest;
- There is no Satisfactory Alternative (Regulation 44 (3)(a)); and
- Consideration of Favourable Conservation Status (regulation 44(3)(b)).

These conditions are fully addressed in Section 6.

2.2 Method statement overview

The proposed AWPR would pass over a number of riverine habitats which are home to the internationally protected European otter.

The method statement provided in this licence application has been developed as a consequence of the requirement to destroy a known otter holt and two couches during the construction of the road scheme.

The holt and couches are located on the north bank of the Goval Burn in the Northern Leg of the proposed AWPR route corridor. A number of surveys have been undertaken along the burn and the presence of otter field signs confirms that the holt to be destroyed was in active use by otters at the time surveys took place. Survey results suggest that this holt is used occasionally for night time foraging by this species.

This licence application is being sought to permit the destruction of the holt and associated couches, actions which would otherwise constitute offences under National and European law (the Wildlife and Countryside Act (1981), Conservation Regulations (1994) and Nature Conservation (Scotland) Act (2004).

The method statement (see Section 3) sets out the measures which will be used to avoid or minimise the risk of adverse impacts on otters arising from the proposed AWPR at Goval Burn. Further details on the proposed scheme and on otter survey findings and predicted impacts can be found in the AWPR Environmental Statement (Jacobs UK Ltd., 2007).

The method statement follows best practice guidelines for habitat clearance operations associated with the construction phase of the proposed AWPR, which is due to commence in 2010. The proposed measures aim to ensure that all reasonable steps are taken to prevent disturbance and damage to otters and their habitat. In the event of habitat loss being unavoidable, replacement measures will be incorporated as part of the scheme thus helping to maintain the favourable conservation status of this species.

Contractors employed on the AWPR who undertake works that may affect otters will be required to follow a detailed Method Statement for site works. This will be prepared by the contractor's ecological representative in agreement with Scottish Natural Heritage (SNH).

2.3 Details of proposed works on site that are to be covered by the licence

Goval Burn Underbridge is required to carry the AWPR over Goval Burn. The proposed specimen design of the bridge is a single span concrete portal structure with full height abutments. The proposed bridge has zero skew with a clear span of approximately 15m.

The structure is proposed as pre-cast pre-stressed concrete Y-beams supporting an in-situ reinforced concrete deck slab. The beam and slab type construction is proposed to minimise the temporary works required over the watercourse. The abutments are proposed as in-situ reinforced concrete cantilever walls supported on pad footings. The new structure is proposed as fully integral in accordance with current design standards.

As a result of the construction of the bridge, a single otter holt and two otter couches will be destroyed. Provision of an artificial replacement holt is proposed to offset the loss of the natural holt and provide otters with long-term alternative accommodation at the site. Construction work will also result in the removal of an area of riparian habitat which will be replaced by new planting within the area.

The installation of bridge structures in the area has the potential to sever otter movements between the Goval Burn and the River Don. This severance will be compensated for by the incorporation of wildlife ledges which will allow otters to move freely within and between available areas of habitat.

3 Survey and Site Assessment

3.1 Objectives

3.1.1 Survey objectives

The aim of surveys undertaken to date was to confirm the presence of otters within Goval Burn and to identify subsequent levels of activity in the area at particular times of year. Walkover surveys were undertaken at the burn in order to identify suitable otter habitat and field signs.

3.2 Methods

3.2.1 Survey methodology

Because otters avoid disturbance and are largely nocturnal, surveys were carried out by searching for otter field signs. Accordingly, the Goval Burn was surveyed for signs indicative of the presence of otters, including:

- otter spraint;
- footprints;
- actual, possible or potential resting sites, (these include underground 'holts' e.g. beneath the roots of bankside trees; or above ground 'couches' e.g. in reedbeds);
- slides or other well-used access points to watercourses (though additional evidence would be required to positively confirm such as indicative of otter presence);
- feeding remains e.g. fish carcasses (though additional evidence would be required to positively confirm such as indicative of otter presence); and/or
- sightings, including otter Road Traffic Accidents (RTAs).

3.2.2 Survey area

As agreed with SNH, all areas of the Goval Burn that lie within 100m of the proposed road alignment were surveyed for otter. In general, these surveys only attempted to identify terrestrial habitats within 10 metres of the Burn, although, where otter signs

were abundant, the survey was extended to include adjacent habitats. Repeat survey visits were used to confirm the level of otter use.

3.2.3 Timings, duration and number of visits

Otter surveys at the Goval Burn were conducted in May 2004 with repeat visits made every two-three months (but not within one week of spate conditions) for a period of a year after the original surveys were undertaken. The data collected was used to assess seasonal variations in otter activity along the burn.

3.2.4 Weather conditions

Surveys took place under ideal conditions during prolonged dry spells thus maximising the chances of finding otter field signs such as spraint, and allowing surveyors to assess the banks of the burn from in the channel during low water levels.

3.2.5 Personnel

Surveys were undertaken by ecologists from Jacobs UK Ltd, all of whom were experienced in the identification of otter field signs and habitats.

3.2.6 Survey constraints/limitations

Otter field signs can be found at any time of the year. As described above, surveys took place under dry conditions thus maximising the chances of finding otter field signs. However, due to the variable nature of wildlife and the limitations of survey methods, it is possible that not all field signs present will have been recorded.

3.2.7 Sources of additional/pre-existing information

Consultation was undertaken with a variety of statutory and non-governmental organisations including Scottish Natural Heritage (SNH), North East Scotland Biological Records Centre (NESBReC), and City of Aberdeen Council. The National Otter Survey of Scotland (Green and Green, 1997) was also consulted to gain information on otter distribution in the Aberdeen area.

3.3 Results

3.3.1 Species recorded

As previously outlined (see Section 2.2.1), otters are shy animals and are predominantly nocturnal. As such, no otters were observed during the survey visits. A summary of the otter survey results for Goval Burn obtained from the surveys undertaken for the Environmental Statement and additional monitoring are provided in Table 1 and shown in Figure 1.

Table 1: Otter Use of Goval Burn

Riparian Habitat	Aquatic Habitat	Holt/Couch Locations	Signs Recorded
The lower reaches of this part of the burn have been fenced/walled resulting in a five metre wide riparian zone on each bank. Tall bankside vegetation dominates with occasional areas of wooded riparian habitat, both providing excellent cover for otters.	ASPT score suggests water quality is good. Pools and riffles provide good fish habitat. Don District Salmon Fisheries Board reports that the river supports salmonids, eel (<i>Angola angola</i>), brook lamprey (<i>Lampetra planeri</i>) and minnow (<i>Phoxinus phoxinus</i>).	Holts (Holts 3-6) recorded at: NJ 8852314326 NJ 8915714872 NJ 8935015027 NJ 8943015195 Couches (Couches 1-3) recorded at: NJ 886147 NJ 888148 NJ 892149	Numerous sprainting sites were recorded along with footprints and a large salmon carcass that had been partially eaten by an otter. Adult otter footprints and sign heaps were recorded under Goval Bridge where the river is crossed by the A947 while footprints were also observed along the top of the riverbank leading over the B977 road. Otters are lying-up along the burn in dense riparian vegetation while four holts were recorded within the riverbank and one in a pipe (holt 5). An extensively excavated holt (holt 3) was located in the riverbank beneath a semi-mature sycamore tree, the entrance being marked with large quantities of spraint, adult otter footprints and bedding. Otter tracks were observed running south from this holt, across the Buchan Way. It is likely that otters are using this as a terrestrial short-cut route to Parkhill Loch. Two of the remaining holts (holts 4 and 6) were located in shallow cavities in the riverbank, these being marked with spraint and runs leading from them.

3.3.2 Numbers of individuals or size of populations

While signs of otters are abundant throughout the Goval Burn, it is not possible to determine the number of individual otters present as the abundance of field signs has been shown to be a poor predictor of otter population size (Chanin, 2003).

3.3.3 Distribution of individuals/groups

Due to food availability and the nature of river habitat, otters are known to have extensive home ranges. Radio-tracking studies have shown that in the Dee and Don catchments, male home range sizes average 32km but may be as long as 80km, with female ranges averaging 20km (Kruuk, 1996).

3.3.4 Habitat use

From the results of the survey work undertaken within the area, it can be seen that Goval Burn supports a resident population of otters which regularly use its habitats for both foraging and resting purposes.

3.3.5 Level of habitat use

The Goval Burn constitutes a core area of otter activity within the Northern Leg of the AWPR route (Jacobs UK Ltd., 2007) with three couches, five holts and numerous other field signs such as prints, sign heaps and spraint sites (Figure 1). The burn has good water quality and as it is a tributary of the River Don, is likely to receive runs of salmonids. The extensive riparian cover in the form of dense emergent vegetation is frequently utilised as lying-up habitat.

3.3.6 Habitat suitability

The Goval Burn contains numerous features such as gaps in mature tree roots which have the potential to act as holts, sheltered sandy bays which can function as couches and riparian emergent vegetation suitable for cover and lying-up habitat. The burn has good water quality and as it is a tributary of the River Don, it is likely to receive runs of salmonids thus providing a valuable food source.

3.3.7 Seasonal changes or likely changes or movements of individuals

Otters are present in the Goval Burn all year round.

3.3.8 Relevant maps, diagrams or photographs

Relevant maps are included in Section 4 (see Figures 1 and 2).

3.4 Interpretation and evaluation of results

3.4.1 Importance of the site

The habitats within Goval Burn are of a very high value for otters with numerous holt and potential holt sites present, together with good water quality and abundant food sources. Accordingly, the burn supports a regularly occurring, regionally significant population of this species. Otters are expected to use the burn for foraging, commuting,

lying-up and potential breeding. As such, the burn is evaluated at the National level for this species (Jacobs UK Ltd., 2007).

3.4.2 Constraints and limitations

Excluding the difficulty in assessing population numbers (as highlighted in Section 2.3.2), it is considered that the abundant pre-existing information coupled with the excellent survey conditions, affords no other significant constraints or limitations to the interpretation and evaluation of the results.

3.4.3 Need for further survey

Otters are highly active in the Goval Burn and key habitats and lying-up sites are subject to change in advance of the commencement of construction works. Taking into account that construction of the scheme is not likely to commence before 2009, further surveys will be required immediately prior to the start of the construction phase. This will involve re-surveying all watercourses and water bodies within 100m of the alignment as well as checking on the status of existing holts and couches. Should any new otter lying-up sites be found, mitigation must be adjusted as necessary. The discovery of any holts or couches that are being used for breeding will necessitate the suspension of all works in that area until the cubs have left the holt/couch.

3.5 Impact assessment

3.5.1 Type of impacts

In the absence of mitigation, potential impacts at Goval Burn under the AWPR proposals include direct mortality, habitat loss, severance, disturbance and pollution.

Direct mortality as a result of construction activities would pose a risk to otters using holt (H4) if it were not to be removed under licence. Furthermore, direct mortality is also possible through RTAs and/or drowning where the scheme crosses the burn.

Habitat loss will result in the loss of a holt (H4) (considered to be used for occasional night time foraging only), which constitutes an offence under current legislation. Similarly, two couches would also be lost, although these sites are subject to seasonal change. The scheme will also result in the loss of 650m of high value riparian habitat comprising tall herbaceous vegetation (including potential lying-up habitat) and scattered trees where the AWPR and associated side roads cross the burn.

Severance is predicted at the confluence of the Goval Burn and the River Don.

Disturbance is predicted to otters using holts and lying-up in dense riparian vegetation along the burn.

Pollution due to runoff from the scheme carries with it a risk of deterioration in water quality. Such events would have potentially serious effects as the burn constitutes a key foraging, commuting and lying-up resource for otters, and flows into the River Don.

3.5.2 Magnitude of impacts

Prior to mitigation, all impacts to the Goval Burn have been assessed as being of high negative magnitude and major significance on a nationally important species, with the exception of habitat loss which has been assessed as being of medium negative magnitude and major significance.

3.5.3 Duration of impacts

Direct mortality, the loss of the holt and two couches, disturbance, severance and pollution impacts will occur during the construction phase of the scheme. Direct mortality due to RTA, habitat loss, severance and pollution are all predicted during the operational phase.

3.5.4 Temporal changes to impact

As otters are active all year round, there are no predicted temporal changes to impacts.

3.6 Mitigation and compensation

3.6.1 Risk

The Goval Burn is considered to be a high value habitat which provides numerous accommodation, shelter and foraging opportunities for otters. As such, it is considered very likely that the provision of artificial holt structures will be utilised by this species. The provision of suitable alternative holts will negate habitat loss in this regard.

3.6.2 Residual impacts

Following mitigation, all residual impacts other than the loss of the holt and two couches, will be reduced to negligible magnitude and negligible significance (Jacobs

UK Ltd., 2007). The provision of two pipe and chamber holt will offset the loss of the holt leaving a residual impact of a low negative magnitude and minor significance.

3.6.3 Timing and phasing of works

For a detailed timeline of the works in advance of the construction of the proposed AWPR, refer to Appendix A.

3.6.4 Best practice guidelines

Best practice guidelines will be used as standard working practice in the vicinity of watercourses to reduce the impact of construction work and ensure mitigation is provided effectively. These will be informed by Scottish Environment Protection Agency (SEPA)'s Pollution Prevention Guidance (PPG) 9 in relation to the prevention of pollution of watercourses. This is consistent with best practice as determined by the appropriate governing or professional body (including SEPA and the Institute of Ecology and Environmental Management (IEEM)) and as described in the Design Manual for Roads and Bridges (DMRB) Volume 11 and Volume 10 (Highways Agency, 2001).

3.6.5 Techniques to be used

Prior to its demolition, otters will be excluded from the holt under a Scottish Government licence which will be procured at least 10 months prior to the commencement of the construction phase. Exclusion will be achieved by a combination of general disturbance and recognised chemical treatment. Once monitoring has confirmed that the holt has been vacated by otters, the entrances will be blocked. At this time, replacement holt will be installed in suitable nearby locations to serve as alternative accommodation. Full details of the holt exclusion and offset strategy are contained in Sections 4.5 and 4.6.

3.6.6 Contingency plans

The proposals set out in this document are based on a worst case scenario (that otters currently occupy the holt) and mitigation has been identified accordingly. In the unlikely event that otters are found on site during construction, work will stop immediately and an additional licence application will be prepared.

3.6.7 Experience of operatives

The construction contractor or their ecological representative will be required to produce a detailed method statement for the destruction of the existing otter holt and the construction of the replacement holt, in support of a licence application to the Scottish Government.

The contractor will have proven experience in the installation of otter mitigation and all works affecting this species will be overseen by an Ecological Clerk of Works (ECoW) experienced in otter survey and mitigation methods.

3.6.8 Specification of equipment

The otter fencing will be of a post and galvanised wire mesh design (see Section 4.3). In addition, culverts will be specifically designed to be sensitive to otters (see Section 4.3). The replacement holts will be of a pipe and chamber design (full details are included in Section 4.6).

3.6.9 Habitat restoration, enhancement or creation

New riparian mixed woodland and scrub planting will be created at Goval Burn as part of the proposals. All new riparian planting is to be based on native species of local provenance and will provide otters with cover and alternative lying up sites. New planting will also act as wildlife corridors between areas of suitable otter habitat and, where possible, will be used to encourage the use of crossing points within the scheme.

3.6.10 Post development site safeguard and monitoring

All culverts, ledges and underpasses will be checked as part of the general monitoring programme for the scheme to make sure that they are not blocked by flood debris that will obstruct the flow of water or prevent otters from using them. Fencing must also be examined at regular intervals (at least once a year) to check for damage and corrosion. In this respect, it is important that maintenance procedures for mitigation measures are stipulated in the Term Maintenance Contract.

Post-construction monitoring of otters will also be required on an annual basis over the first five years to check for signs, assess the status of holts and to record any RTAs. This will help to assess how otters are adapting to the new scheme and whether the mitigation measures have been effective in helping to maintain the otter population at a

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favourable conservation status and preventing RTAs. Based on the results of these surveys, alterations and/or enhancements to the mitigation may be necessary.

4 Method Statement

At the commencement of works, all personnel on site will be made aware of the mitigation requirements for specific areas and their responsibilities to ensure that high standards of ecological management are achieved.

4.1 Locating otter holts and couches

Prior to the commencement of any construction phase related activities, pre-construction surveys for otters will be conducted by the contractor's ECoW. In accordance with SNH and as with previous surveys (see Section 2.2.2), all areas lying within 100m of the alignment will be walked over to check for signs of otter. The survey data will be used to clearly mark any new holts and couches as well as indicate current level of use at known holts and couches within the proposed area of works. This data will help to ensure they are fully protected during scheduled activities.

The contractor's ECoW must be a suitably qualified ecologist with previous experience in overseeing otter mitigation works. The contractor must provide their ECoW with a programme of works along with an accurate map showing the location of the proposed works and access routes in advance of works in each area. This is imperative to ensure surveys are performed in the correct sequence and location, so as not to cause delay in the programme. Preconstruction survey results shall be provided by the ECoW, who will also be responsible for ensuring that all personnel working on site are provided with accurate information and advice on minimising disturbance.

4.2 Establishment of exclusion zone

Where otter holts and couches are known to be present near to a construction area, they will be protected by a 30m exclusion zone demarcated by temporary otter-proof fencing, which will be erected in such a way that commuting routes are not disrupted. Chestnut paling fence with stakes at 25mm gaps or stiff plastic mesh that otters cannot scale will be used as a temporary measure to keep otters out of construction areas.

4.3 Development procedure outside exclusion zone

Direct mortality of otters during the construction phase will be avoided through covering any work pits at night or positioning mammal ramps to allow any trapped animals to escape. In order to prevent otters from being run over by construction vehicles, night time working must be suspended where construction works come within 30m of any watercourse or water body.

In order to minimise disturbance to otters during the clearance of any riparian habitat outwith demarcated exclusion zones, a phased process of habitat clearance whereby sections of habitat will be removed over a period of several weeks will be undertaken. If a holt or couch is discovered during this process, an exclusion zone of 30m should be established, and all works therein suspended.

Direct mortality of otters from the operational scheme will be avoided through the erection of permanent otter-proof fencing along both sides of the carriageway (in conjunction with the provision of sufficient safe crossing points). The most effective option uses 25mm X 50mm mesh. Fencing will be 1500mm high with an additional 300mm overhang angled at 45° away from the road. Fencing will be buried to a level of 500mm with an additional 300mm lying parallel with the ground. The fencing return will consist of a separate roll attached with special clips to the vertical mesh (SNH, 2001). Details of locations of fencing throughout the whole scheme are provided in Appendix 1. Where the fence abuts bridge rails, gate posts or a different type of fence, there must be no gaps larger than 50mm. If the fence crosses a drainage channel, a grille must be positioned under the fence to prevent otters passing through the gap. Regular maintenance will be required to ensure that no blockages occur at such points. Fencing must be installed wherever the scheme comes within 150m of a watercourse known to be used by otters, or where it severs or passes between areas of otter habitat. Fencing will also be used to guide animals towards safe crossings including underpasses or dry tunnels. Underpasses will be installed where fencing extends for several hundred metres and there is no stream crossing. The minimum internal diameter of the pipe must be 900mm and the pipe should be as straight as possible. Fencing and underpasses installed as part of mitigation for badgers (see Confidential Badger Report in Appendix A10.2 of the AWPR Environmental Statement (Jacobs UK Ltd., 2007)) will also provide mitigation for otters and vice versa.

Culverts have also been designed to accommodate otters. The design of any culvert should allow for plenty of airspace above the water during times of flood. The AWPR

scheme will use box culverts which would be of sufficient dimensions to meet this requirement. The base of the culvert should be at least 150mm below the height of the riverbed, to allow the bed to reform (Highways Agency, 2001).

Otters will also be able to travel along culverts via the provision of mammal ledges which will be incorporated into the culvert design. These ledges can be built of solid concrete, or with a bolt on design using metal brackets and wooden planks or mezzanine flooring sections. All ledges should be at least 500mm wide and must be accessible from the bank by ramps. The ledges should be sited at least 150mm above the highest water level and allow for 600mm headroom. If an obstacle, such as a weir, is located under the bridge, then steps should be provided to allow otters to climb over the obstruction or onto the ledge.

4.4 Determining holt or couch use by European otter

In order to establish the presence or absence of holt or couch use by otters, surveys were conducted at three month intervals over a period of a year to account for seasonal variations in otter activity. In addition, a pre-construction survey of the area will be conducted immediately prior to construction (Highways Agency, 1999) this will be undertaken by the ECoW. Holts and couches used by otters can be identified by spraints, tracks and feeding remains. Sprainting frequency varies seasonally, and therefore deciding on a time when otter surveys are carried out can determine its value. It is suggested that surveys are not carried out during periods of high water or peak leaf fall (SNH, undated). Full details regarding this survey method are described in Appendix A10.6 (Otter Report) of the AWPR Environmental Statement (Jacobs UK Ltd., 2007).

4.5 Holt exclusion strategy

If it is impossible to avoid general disturbance to otters or the destruction of their habitat or shelters, then it is essential that a licence is issued by the Scottish Government, and an appropriate methodology for evacuation and mitigation is agreed with SNH. Work will be supervised by a suitably qualified ecologist, and measures must be taken to ensure that the shelter is unoccupied at the time of exclusion (Highways Agency, 1999).

Otters are intolerant of disturbance at or near active holts. As such, general disturbance (e.g. vegetation clearance) and the use of approved chemical deterrents is recommended as an effective means of evacuation. Following primary evacuation procedures, a minimum period of five days of monitoring will be required to confirm that the holt shows no further signs of use. During this time sand will be placed at the entrances to record footprints. If the holt displays no further signs of use, then the entrances may be lightly blocked with vegetation and a light application of soil. However, should there be a delay in holt destruction, the lightly blocked entrances (if remaining inactive) should be hard blocked with buried fencing materials and compacted soil. The holt should then be destroyed as soon as possible (Smal, undated).

Holt destruction should be carried out using hand tools as far as possible. A tracked mechanical digger may be used where boulders or large tree stumps need to be removed. Digging will commence 15m from the outer holt entrance and will work towards the centre. An experienced Ecologist will be on site to supervise the digging out, following the necessary presence/absence monitoring. Once tunnels have been exposed these will be re-checked for any signs of recent otter activity with a view to ensuring the safety of any potentially remaining otters. Once it is ensured that no otters are present, the remainder of the holt can be destroyed and the entire area back-filled and made safe (Smal, undated).

If a holt is confirmed as being active, it must be established whether it is a breeding or non-breeding holt. This will involve a four-month period of monitoring with bi-monthly checks of the holt using sand pads for evidence of cub prints (Kruuk, 2006). If there are no cub prints identified after this period it can be assumed it is not a breeding holt and exclusion can occur as detailed below. In cases where breeding females or cubs are found to be present, it is crucial that no evacuation procedures of any kind are undertaken until either the otters have vacated the holt, or after a period of 10 weeks have passed after cubs are recognised as active outside the holt (SNH, undated). After this period of time and following successful evacuation procedures, holt exclusion and destruction can proceed as described below. These potential time constraints have been accounted for in the Timeline for Advance Works Calendar (see Appendix 1).

In order to identify any new holts or couches within the impacted area, pre-construction surveys must be completed before development commences, and a 30m exclusion zone set up around the holt or couch, restricting plant and personnel to a prescribed working corridor in order to avoid disturbance to otters.

As there is no specific season that otters give birth, it is impossible to schedule works at a time which would guarantee the prevention of disturbance to an otter with cubs (SNH, undated). If pre-construction monitoring confirms the holt is being used for breeding, the exclusion zone will be extended to 100m.

If it is not possible to implement a suitable exclusion zone, an additional licence application will have to be submitted to avoid an offence.

4.6 Holt offset strategy

The planned destruction of the existing holt and two associated couches will be offset prior to the start of works by the provision of two artificial holts both located at least 100m from the AWPR main alignment and associated side roads. The replacement holts will be placed near to the original holts and in a similar habitat to that being lost. Tried and tested designs of artificial holts can be provided and adapted to suit conditions and the general needs of the species (SNH, undated).

Artificial holts generally consist of one or two chambered structures constructed from materials including logs, boulders or pipes, with at least two well concealed entrances. The first entrance should lead into the river, sloping downwards so as to reduce the chances of flooding, and the second should provide an exit out onto the riverbank. Replacement holts must be constructed at least one year prior to construction of the AWPR and the destruction of the existing holt (Highways Agency, 1999). A specimen design for a replacement otter holt is included in Appendix 2. Destruction of an otter shelter in freshwater/riverine habitats must be undertaken during the day with great care using handwork wherever possible in order to avoid harm to an otter which may be using the structure at the time (RSPB *et al.*, 1994).

The loss of the holt and associated couches will be further offset by new planting (see Section 3.6.9) which will provide alternative cover and accommodation for otters at Goval Burn. Full details of the locations of different holts, crossing structures and new planting are shown on Figure 2.

5 Discussion

The following section summarises how the mitigation measures outlined in this document will satisfy the three conditions required prior to the procurement of a licence.

1) Reasons of Overriding Public Interest

Construction of the proposed scheme is considered to be of strategic importance to the transport network of North East Scotland. The proposed route will provide an important link to the A90 both to the north and south of Aberdeen. Once operational, the bypass will dramatically reduce congestion in Aberdeen city centre and through the rest of the city. This will enable commuters to spend considerably less time on the road, and help reduce accidents and breakdowns which currently cause major disruption. In addition, the road will provide mitigation to properties currently affected by traffic from the A90.

2) There is no Satisfactory Alternative (Regulation 44 (3)(a))

As stated in the ES (Jacobs UK Ltd, 2007), the AWPR as a key element of an integrated transport system for the North East of Scotland. Proposals were developed in recognition of unacceptable levels of congestion experienced on existing roads in and around Aberdeen. The AWPR will remove traffic from the city centre by acting as a bypass.

Numerous alternative proposals have been considered, including a Western Peripheral Route connecting Charleston on the A90 south of Aberdeen, with Craibstone on the A96 west of Aberdeen, and further proposals to connect Craibstone with Blackdog on the A90 north of Aberdeen.

The combined corridor was named the AWPR and adopted by the Scottish Executive (now the Scottish Government) for promotion as a trunk road in 2003. Over the following year proposals were refined within the corridor, at which time the Scottish Executive requested that consideration be given to alternative corridors for the southern section of the route. In December 2005 following consideration of the alternative corridors and informal public consultation, the Minister for Transport selected the Milltimber Brae option for the proposed route corridor between Charleston and Kingswells with the addition of a link to the A90 at Stonehaven. The final route selection process is based on a balance of environmental, engineering and economic

advantages versus disadvantages of the options in question and will pass for the majority of its length through agricultural areas.

3) Consideration of Favourable Conservation Status (Regulation 44(3)(b))

The mitigation proposed for this scheme has been developed using the combined experience of several ecologists experienced in otter surveys and mitigation strategies and in consultation with SNH. It is considered that the mitigation proposals will allow for the maintenance of ecological links during construction and operation between the Goval Burn and the River Don while the provision of replacement holts and new planting will provide compensatory habitat adjacent to where the scheme crosses the burn. Furthermore, the risk of otter road traffic accidents will be ameliorated by the erection of otter proof fencing. This will have the added advantage of guiding otters to safe crossing points within the scheme.

It is considered that the implementation of monitoring and maintenance of mitigation measures, undertaken as part of an otter management plan, will secure the favourable conservation status of this species within the local area. Accordingly it is considered that this will satisfy the criteria to be met under Condition 3.

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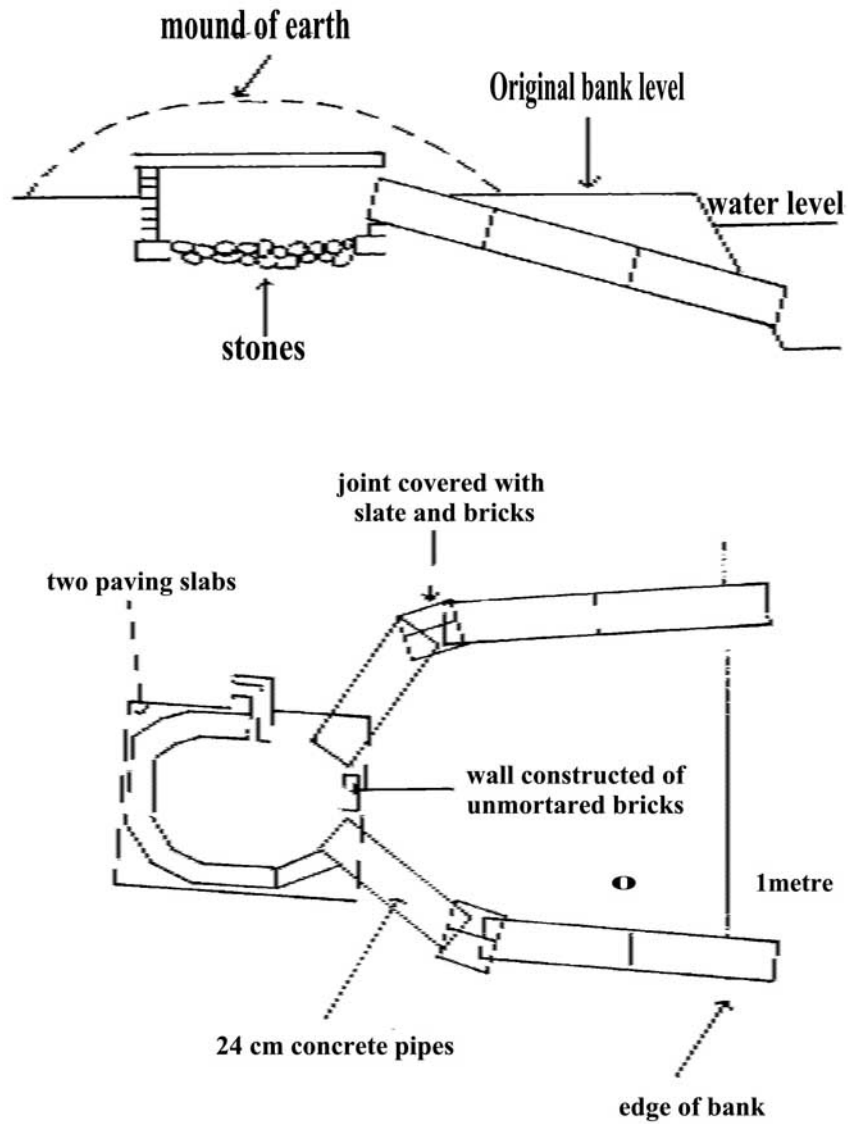
Appendices

Appendix 1: Timeline for Advance Works Calendar: Otter

Action (months prior to construction)	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1
Holts monitored to establish size & status.																			
Appointment of contractor to install replacement holts.																			
Initial consultation with SNH to discuss scope.																			
Produce method statement with agreement from SNH.																			
Apply for Scottish Government licence to destroy Holts.																			
Installation of artificial Holts.																			
Post-installation monitoring of artificial holts.																			
Exclusion of holts scheduled for removal.															*				
Destruction of holts scheduled for removal.																			
Post-exclusion monitoring of artificial holts.																			
Pre-construction site clearance.																			
<p>NB. The construction start date will be confirmed following the outcome of the Public Local Inquiry (PLI). New planting will be carried out in spring time and approximately two months following construction. * Exclusion of any breeding holts scheduled for removal</p>																			

Appendix 2: Specimen Design for a Pipe and Chamber Otter Holt

Construction of artificial holt



Source: International Otter Survival Fund (www.otter.org)