

Environmental and Ecology Surveys Information for Landowners



INTRODUCTION

The Aberdeen Western Peripheral Route (AWPR) is a new road being developed to improve travel in and around Aberdeen and the North-east of Scotland. Backed by the Scottish Executive, the road is being developed by Transport Scotland in partnership with Aberdeen City and Aberdeenshire councils to improve access to the North East, reduce congestion and help grow the area's economy.

In order to minimise the impact of the proposed road on the environment, a number of environmental and ecological surveys are necessary to gain a full picture of the corridor of land within which the road would be situated.

Information gathered by these studies is used to assess any potential impact on the environment that may be caused by the road and put in place mitigation measures to minimise this impact.

While much of this work can be carried out within public areas, it is also necessary to survey some areas of land within the corridor that are in private ownership.

At this stage, environmental survey work will not take place within residential property, with the exception of bat surveys (see section 1 – Bats). Environmental surveys will predominantly be carried out on farmland / small holdings along the route.

This document has been prepared to provide information for landowners on the surveys that may be required and what they will entail.

ENVIRONMENTAL SURVEYS

Environmental surveys are carried out in order to gather information which will go into an Environmental Impact Assessment (EIA). The information gathered is used to assess the scale of impact and to develop appropriate measures to minimise identified potential impacts. The results of these assessments will be reported in an Environmental Statement which is published at the same time as the draft route orders.

The particular surveys required are:

1. ECOLOGY

Ecology surveys involve observing and recording the different habitats and species, both protected and non-protected, within the route corridor. The surveys will consist of visual inspections and sampling of the different habitats and species and will be carried out by ecological specialists.

An additional specific aim of some of the ecological surveys is to provide sufficient information to enable an appropriate assessment of the potential impact on the integrity of the River Dee Special Area of Conservation (SAC) including the Crynoch and Culter Burns.

The ecology surveys include:

Extended Phase 1 Habitat Survey

A Phase 1 Habitat Survey identifies and maps the main habitat types in an area and is a system of habitat classification designed for use in rural and urban environments, recording the nature and extent of semi-natural and man-made plant communities across a 1 km route corridor. Bryological (moss) species and important invertebrate habitats will also be surveyed during the survey.

National Vegetation Classification (NVC)

National Vegetation Classification (NVC) surveys will be undertaken on all sites which have been identified for their notable botanical features and plant life. The survey consists of observing and noting the plant life that is present in the areas concerned.

Otters

The otter surveys will aim to identify all areas of known otter habitat and otter populations within the survey area and will also consider areas into which otters may spread. All watercourses or other water features within the survey corridor will be surveyed for signs of the presence of otters.

Particular attention will be paid to the boundaries of River Dee SAC as otter is one of the qualifying species for which the SAC is designated.

Repeat surveys to account for seasonal variations in otter activity and to identify expanding populations will only be undertaken at watercourses where the presence of otters is not confirmed by the first survey visit or where potential breeding holts have been identified.

Water vole and water shrew

All river banks, watercourses, wetlands and standing water bodies within 250m of the proposed road will be surveyed for water voles and water shrew. All watercourses and ponds will be surveyed from within the channel or pond, where practical, to give the best view of bank habitat and increase the probability of detecting field signs. Wetlands, such as areas of peat bog or grazing marsh, will be searched for signs of water voles by systematically surveying along all drainage ditches, the edges of all significant standing water bodies (those over 50m² in area) and along a series of parallel tracks spaced at approximately 10m intervals.

Red squirrel

Surveys for red squirrel are undertaken across a 500m wide survey corridor either side of the proposed centre line of the route. Suitable areas of conifer and broadleaved woodland will be surveyed for the presence and absence of red squirrel using a combination of hair-tube and visual surveys. The hair-tubes will normally be collected after a period of 7 to 14 days have elapsed and will be sent for laboratory analysis.

In conjunction with the hair-tube survey, ecologists will record any sightings of red squirrels and dreys of either species within the survey corridor. Ad-hoc observations will be recorded during the other ecological surveys scheduled for 2006 within the proposed route corridor but will not follow a set survey method.

Breeding birds

The breeding bird survey area is defined as 250 m either side of the proposed centre line of the route. Due to the large area of the survey corridor and the fact that most of the route corridor comprises areas of intensive agriculture (representing low to medium quality habitat for birds) it is considered impractical and unnecessary to undertake a blanket survey of the entire route corridor and wider study area. As such, two methods will be used to identify habitats of value to breeding birds within the area of the route corridor which is suitable for a breeding bird survey. These are:

- **identification of discrete sites of ornithological value and**
- **sampling within systematic parallel tracks and quadrats**

Incidental sightings of priority bird species will also be recorded during the other floral and faunal surveys to provide additional information on the presence of species within the survey corridor.

Wintering birds

A line transect and quadrat sampling methodology will be used to sample wintering birds. A 500 m wide transect will be established within the survey route corridor around the centre line of the route. The transect will be divided into 500m x 500m quadrats. A wintering bird survey will be completed on one out of every three quadrats to achieve adequate coverage of the study area.

Badgers

The status of badger populations will be assessed within the proposed 1 km survey corridor. The width of the survey corridor will be increased where deemed necessary, for example, should signs suggest that there may be a badger sett less than 100m outside the 1 km survey corridor. All areas of woodland, scrub, fields, hedgerows, stone walls, paths and other linear features within the survey corridor will be walked in order to locate badger setts, paths, evidence of foraging and dung pits.

A bait marking study will be undertaken, where necessary, to establish the territorial boundaries of specific social groups. This will enable setts requiring re-location to be moved within the existing territorial boundaries and specific habitat mitigation to be put in place.

Bats

Desk-based research and walkover surveys will be undertaken to identify potential roost sites, linear features and foraging habitat within a 2 km survey corridor and to predict potential commuting routes. Detailed habitat assessments, emergence counts and activity surveys will be carried out within a 1 km route corridor by undertaking daytime, evening, night time and dawn surveys. Visual observations are used for daytime and dawn surveys. A bat-detector is also employed during evening and night-time surveys to detect bat activity.

Where initial surveys indicate that bats may be present in buildings, follow up surveys will be arranged directly with the relevant landowner.

River habitat surveys

River Habitat Surveys will be carried out by accredited surveyors and will occur during early summer. Habitat assessment will involve surveying a 500m reach of each watercourse across the proposed crossing point, to establish the physical characteristics of the watercourse. A judgement on whether river habitat surveys are necessary on highly modified channels such as field drains will be made at the time of survey.

Fish

An assessment of physical habitat will be carried out on all potentially affected watercourses- both SAC and non-SAC. During visual inspection of each site, professional judgement will be used to make a preliminary assessment of the likely presence of each species of interest based upon the known habitat requirements. On watercourses where the habitat assessment is uncertain as to the suitability for fish, or where suitable habitat is present near the proposed crossing point, electric fishing would be required to clarify the status of fish species in the watercourse. Where this is required a 100m stretch will be selected which will be centred on the location of the potential route crossing. Single anode electric

fishing using a backpack will be used for small burns.

Following discussions with Scottish National Heritage and the Dee District Salmon Fishery Board, the River Dee and Crynoch Burn will not be electrofished at this time.

All electric fishing will be carried out in accordance with the published Guidelines for Electric Fishing Best Practice (Environment Agency, 2002) and will employ relevant risk assessments and safe plans of action.

Freshwater Pearl Mussels (where appropriate)

The River Dee, Culter and Crynoch Burns will be surveyed for Freshwater Pearl Mussels. All other watercourses thought to be affected by the proposed scheme will be subjected to a preliminary survey to see if the habitat would be suitable for freshwater pearl mussels. Should suitable habitat be discovered full surveys will be performed.

Surveys will be undertaken during periods of low flow between August and September. The surveys can only be undertaken in appropriate weather conditions - dry with bright sunshine. The wadeable reaches of the River Dee and the Crynoch Burn will not require a preliminary habitat suitability survey as these SAC watercourses have been designated on the basis of the presence of freshwater pearl mussels. They will therefore automatically be surveyed. The survey will extend 100m upstream and 500m downstream of sites potentially affected by the road.

Freshwater Invertebrates

All watercourses located within 500 m of the centre line of the proposed route will be considered for invertebrate sampling. All watercourses will be assessed during the walkover surveys for their ability to support established invertebrate communities, such as might be found in ephemeral waterbodies, but those which do not offer suitable habitat will not require further sampling. All judgements will be documented.

The survey includes searches for surface dwelling species, followed by sampling using a mesh Freshwater Biological Association (FBA) sampling net. In addition to the collection of macroinvertebrate samples, simple in situ water quality measurements (dissolved oxygen, pH, temperature and conductivity) will be taken using field probes.

Hare and Deer

During the ecology surveys, the survey teams will observe and note any presence of hare and deer and record this. While neither are protected species, deer in particular can be a traffic hazard and it is important to note the presence of these species.

2. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

A detailed landscape and visual impact assessment is carried out to consider how the road proposal might impact on the appearance of the landscape.

This is done by walking through the area in question, noting landscape features and assessing the views in the area. The work is non-intrusive and will not involve any plant, machinery or equipment other than cameras, which are used to provide a record of information on views, landform and land use in the area.

The findings of the assessment will inform the development of appropriate mitigation e.g. landscaping and planting.

3. GEOMORPHOLOGY SURVEY (RIVERS AND BURNS)

Fluvial geomorphology is the study of rivers and burns and the processes that form them. This has a bearing on the ecological quality of the river. The aims of the survey are to establish what, if any, impact the road scheme may have on the make-up of the rivers and watercourses.

The survey will consist of a visual inspection of the water channel and bank-side vegetation on watercourses within the route corridor. More detailed data will be collected around the River Dee. A Global Positioning System tool is used to record coordinates for the survey location. In addition, photographs will be taken of the watercourses to provide a visual record of current conditions in the area.

4. HYDROLOGY SURVEYS

The purpose of the hydrology surveys is to provide information on how watercourses and rivers actually flow and involve setting up equipment in burns to measure the flow velocity. Measurements are also taken to determine the stream topography.

The equipment used (photographed) is called an impeller and does not generate any noise. Depending on the size of the burn and whether there is a bridge nearby that can be used for the survey, watercourses are normally entered wearing waders.

Photographs of each survey location will be taken to provide a visual record of current conditions in the area.



5. NOISE MONITORING SURVEYS

Noise monitoring is carried out to measure the current noise levels in a given area and assess what impact the proposed road may have on that.

• Long Term Noise Monitoring Survey

The long term monitoring survey involves setting up the monitoring equipment, which takes 30 – 40 minutes, and is then left for 7 days to monitor the noise levels before being removed. The equipment is battery operated and will be secured to a fixed object such as a fence post or lamp post.



• Short Term Noise Monitoring Survey



The short term monitoring survey involves setting up the equipment and monitoring the noise levels for 30 minutes, removing the equipment and then revisiting the site a number of times during the same day and repeating the process a number of times. The equipment is not left unattended at any time.

The findings of the noise surveys indicate areas where mitigation against the noise of the road may be required.

6. AIR QUALITY MONITORING SURVEY

The air quality assessment is used to consider the effect that the road proposals may have on the air quality in the existing environment.

Each survey involves attaching a small single tube to a drainpipe, lamppost or fence post, as shown in the photograph. Fixing typically takes a matter of minutes. The device would then be left for a minimum of three months. Every 3-5 weeks, the tube will be replaced with a fresh one.



The monitors collect nitrous oxide (NO₂) from the air, which is an air pollution indicator. Once collected the tubes are sent to a lab for analysis of the levels of NO₂ in the air during that monthly period.

7. AGRICULTURAL IMPACT ASSESSMENT

The agricultural assessment considers the likely effects of the road on agricultural activity. This requires evaluation of current agricultural activities, including a Land Capability Assessment (LCA). The LCA allows soils to be graded according to their suitability for growing various crops. In order to complete the LCA, inspection of the soil and land gradient at 100m intervals along the proposed route is made. A hand auger is used to complete the soil assessment (no soil is removed) and a clinometer is used to measure gradient. Access to the sample locations will be by car and on foot. This survey does not form part of the ground investigation works.

Site visits are made to agricultural land interests for consultation to evaluate current activities, and this includes completion of a questionnaire to collect data on the extent of property holdings and land ownership; land use; management and performance levels attained; labour and machinery resources; other business interests and existing land-based grants. Additionally the extent of land take is assessed along with severance impacts. Major accommodation works for access, water supply and drainage are also quantified.

With specific regard to agricultural impact assessments, where site visits and consultations with landowners are required the survey team will contact the landowner to arrange a suitable time, date and location to meet at their convenience.

8. ARCHAEOLOGICAL SURVEY

A detailed archaeological assessment is required to gather information on sites of potential archaeological significance along the route. The survey consists of a visual inspection of the route corridor, with no equipment used other than cameras. It is necessary to photograph any areas of interest to provide a visual record of the current conditions on site.



FURTHER INFORMATION

For further information on the information contained in this document or general enquiries about the Aberdeen Western Peripheral Route contact:

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