

56 Mitigation

This chapter sets out the rationale for mitigation of cumulative impacts and provides examples of measures which could be implemented. Cumulative impacts may affect the water environment, ecology, landscape and pedestrians, therefore this chapter focusses on the potential for additional, wider-area mitigation in these topic areas. Recommendations include extensive habitat creation and woodland planting, along with support for existing species and habitat management schemes.

56.1 Introduction

- 56.1.1 Significant environmental issues relating to the proposed scheme have been identified over the course of undertaking the EIA. Wherever possible, these were addressed in the development of the scheme design.
- 56.1.2 Agreement and guidance has been sought from key stakeholders including Transport Scotland (TS), Aberdeen City Council (ACC), Aberdeenshire Council (AC), Scottish Natural Heritage (SNH), Scottish Environment Protection Agency (SEPA) and Historic Scotland (HS) on the principles of mitigation and key mitigation objectives for the proposed scheme. Consistent with Planning Advice Note (PAN) 58 (Environmental Impact Assessment), which was published in September 1999, the term 'mitigation' is taken to encompass a hierarchy of measures as follows:
- prevention of environmental effects by avoidance;
 - reduction of adverse effects that cannot be avoided; and
 - measures to offset any effects that cannot be remedied.
- 56.1.3 Principles and objectives for ecological mitigation associated with the AWPR have been developed in discussion with SNH, SEPA and other stakeholders including Transport Scotland, Aberdeenshire Council and Aberdeen City Council. These are reported in a Mitigation Vision Statement, which provides a framework for the mitigation measures included in the scheme.
- 56.1.4 The Mitigation Vision Statement also acknowledges the need to consider larger-scale mitigation in recognition of the potential regional context of some adverse impacts. It thus includes, amongst other recommendations, outline proposals for large-scale habitat creation and other measures to offset cumulative habitat loss and fragmentation impacts throughout the proposed scheme.
- 56.1.5 Detailed development of mitigation for potential cumulative/wider scale impacts is beyond the scope of the current EIA. However, there is a commitment by Transport Scotland to large-scale mitigation measures for the proposed scheme. There is ongoing liaison with HS, SNH, SEPA and the two councils to define the level of mitigation required and therefore the scope of this mitigation commitment. The detailed mechanisms for delivery will require to be drawn up by Transport Scotland to be implemented in conjunction with other organisations.
- 56.1.6 To facilitate this development of mitigation for cumulative/wider scale impacts, in March 2007, the Grampian Farming and Wildlife Advisory Group (FWAG) were commissioned by Jacobs. Their task was to assist in the identification of potential environmental projects that sought to address issues common to the residual impacts of the proposed AWPR development. The projects were to be either proposed or underway and preferably in the Aberdeen/Aberdeenshire area. A complete list of 96 potential projects was developed based on the study undertaken by FWAG and additional input from the project team and key stakeholders.
- 56.1.7 The projects were reviewed in a workshop which entailed a preliminary evaluation involving a number of key stakeholders. Participation by these stakeholders was considered essential to establish a consensus of the extent to which each project could potentially help to deliver the aims of offset mitigation within the context of the AWPR. The outcome of the workshop was an initial ranking of the projects in relation to their effectiveness at delivering mitigation for the cumulative/wider scale impacts. Further consideration of the merits of each project will be

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undertaken, based on factors including deliverability and cost etc to enable development of a robust strategy for implementing effective offset mitigation.

56.2 Mitigation

56.2.1 This section describes examples of wider scale mitigation which could be implemented to ameliorate potential cumulative impacts. These measures are currently under consideration for future implementation.

Water Environment

56.2.2 The main cumulative impact on the water environment relates to geomorphological changes arising from culverting and realignments of the numerous watercourses affected by the proposed scheme. This cumulation of impacts could be mitigated through seeking opportunities for wider area habitat creation, enhanced watercourse status and riparian habitat. This measure could enhance and promote the environment in terms of ecology, water, land use and landscape elements.

Ecology and Nature Conservation

General habitat fragmentation mitigation

56.2.3 Construction of the proposed scheme will result in the development of several square kilometres of greenbelt land, including substantial areas that are moderately free of disturbance. In addition, it will create an ecological barrier encircling Aberdeen and its associated peripheral greenbelt. It will sever habitats on either side and inhibit the movement of species. These impacts, mainly stemming from large-scale habitat loss and fragmentation and the associated implications for the species using the area, are difficult to quantify.

56.2.4 In addition to the mitigation measures already included in the proposals, the ongoing development of wider-area mitigation is seeking to address the potential cumulative effect on habitat fragmentation through consideration of:

- The creation of large areas of habitat in close proximity to the proposed scheme to ameliorate ecological local and cumulative impacts;
- Extensive woodland planting to provide alternative habitat and restore connectivity; and
- Financial contributions to existing habitat creation, management and enhancement schemes in the wider area, to compensate for ecological impacts in a regional context.

56.2.5 Along with general ecological enhancement strategies across the project, habitat creation will aim to contribute to meeting biodiversity targets identified in local (LBAP) and national (UKBAP) strategies.

56.2.6 The delivery of these measures will need the assistance and agreement of stakeholders to implement, manage and maintain them.

Habitat Creation

56.2.7 For habitat creation, all planting will be of native species sourced locally where possible. Planting will not conflict with established targets. For example, there will be no planting of the non-native (although naturalised) beech *Fagus sylvatica* as this conflicts with both the LBAP targets and is a high mast producing species favoured by the non-native grey squirrel. Planting suitable tree species that have direct value for red squirrels (such as Scot's Pine *Pinus sylvestris*; European larch *Larix decidua*; Norway spruce *Picea abies*; Lodgepole pine *Pinus contorta*; Douglas fir *Pseudotsuga menziesii*; yew *Taxus baccata* and hawthorn *Crataegus monogyna*) in open areas will encourage the movement of red squirrels between previously isolated or fragmented woodland.

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- 56.2.8 Other species that can be planted, which have a general conservation value and do not encourage grey squirrels, are wych elm *Ulmus glabra*; birch *Betula spp.*; rowan *Sorbus aucuparia*; ash *Fraxinus excelsior*; willow *Salix spp.*; aspen *Populus tremula* and alder *Alnus glutinosa*. Large masted tree species such as oak *Quercus sp.*, beech *Fagus sylvatica*, horse chestnuts *Aesculus sp.* and hazel *Corylus avellana* must not be planted within a kilometre of the proposed scheme.
- 56.2.9 The scheme proposals includes measures to create riparian habitat in the form of wet woodland in areas where culverting and realignment will result in direct impacts. This will be designed with particular species in mind, for example alder *Alnus glutinosa* trees have root systems that provide couch and holt habitat for otter.
- 56.2.10 Habitat will be created in advance of road construction to allow maximum establishment time and be designed with inbuilt diversity to provide food sources for animals throughout the year and to cope with the variation in crop yields. Planting shall be situated away from the road to minimise road traffic accidents (RTAs) for red squirrel and birds.

Habitat Enhancement

- 56.2.11 The area surrounding Fishermyle is a mosaic of wetland habitats including wet woodland, marshy grassland, wet modified bog, and heathland. The fragmentation of this habitat could have major implications for the survival of the small water vole population in this area. Creation of habitat in this area to the west of the proposed scheme particularly for water vole to offset this loss is included in the scheme mitigation measures. The effectiveness of this measure could be increased through possible financial support for schemes to control the non-native mink population (their main competitor), in association with the appropriate authority, would promote their long term survival.
- 56.2.12 Although not part of the scheme proposals, there are areas of semi-natural habitat within the vicinity of the proposed scheme with wildlife value that could be considerably enhanced through the implementation of suitable management plans. Management plans have already been prepared by Grampian Farming and Wildlife Advisory Group (FWAG) for the Aberdeen Countryside Project for a number of these areas. Some of these may form part of future large-scale mitigation measures referred to in 56.1.5.
- 56.2.13 As referred to in 55.1.6, there are initiatives ongoing or planned which, although unrelated to the proposed scheme, have been determined as possibly being of value in offsetting the potential cumulative impacts of the scheme. The project team is committed to effective implementation of environmental projects to reduce the overall effect of the scheme. Liaison with groups such as the Forestry Commission, Scottish Wildlife Trust, Royal Society for the Protection of Birds and Scottish Natural Heritage will be continued, and support provided as appropriate for the development and funding of suitable projects.

Fragmentation

- 56.2.14 Wildlife overpasses and green bridges allow animals to cross the carriageway above the traffic, they are readily used by red squirrels and badgers moving between areas of woodland (Luell et al, 2003). There are two such bridges in the Northern Leg (NL3) that will minimise fragmentation in the Kirkhill area, and one in the Southern Leg (chainage 100660) in an area of high value habitat fragmentation at Cleanhill Wood.
- 56.2.15 Culverts will be designed to allow use, where applicable, by otter, badger, fish and bats and may be used by water vole. In addition to the riparian habitat creation, landscape planting will be sympathetically designed to encourage use of these culverts thus minimising fragmentation. Monitoring the success of this strategy will be undertaken.

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Landscape and Visual

- 56.2.16 The proposed scheme design includes appropriate mitigation local to the road corridor for landscape and visual impacts. These measures will be supported and carried forward during the development of the detailed scheme design through mechanisms such as:
- Production of a Design Guide which will provide guidance on the principles to be adopted at detail design stage as well as providing specific detailed design guidelines. This document will focus on aesthetic considerations which are an important aspect of helping to reduce landscape and visual impacts; and
 - Ongoing refinement of design detail for features such as structures, noise barriers, detention basins and treatment ponds.
- 56.2.17 Although the above mitigation will act at a local level, the overall effect will be to further reduce the adverse landscape and visual impacts throughout the scheme. In addition to this, opportunities will be sought for landscape or visual impact benefits in any wider-area mitigation for ecology and water environment, such as habitat creation, enhancement of watercourses etc.

Pedestrians, Cyclists, Equestrians and Community Effects

- 56.2.18 The scheme proposals include a number of mitigation measures aimed at reducing impacts on non-motorised users (NMUs). Further impact reduction, mitigating the potential cumulative effect on NMUs could be sought through the creation of new access routes to improve the existing network. For example, where appropriate, areas of new planting aimed at off-setting habitat loss could include access features, preferably situated in locations where links could be made with existing paths and tracks.