

57 Site-Specific Cumulative Impact Assessment

This chapter identifies key areas throughout the proposed scheme where multi-disciplinary cumulative impacts are particularly evident. At each site, the cumulative impacts arising from the combination of impacts from different disciplines are described. Mitigation measures are identified to address the combination of the potential impacts on the locations and where relevant, an evaluation of whether the impact is significant or not significant is stated.

Post-mitigation cumulative impacts are identified at Kingcausie Wood, the River Dee crossing, Milltimber, Craibstone, Kirkhill Forest, and the River Don crossing.

57.1 Introduction

57.1.1 This chapter provides an overview of selected locations along the proposed scheme where different types of impact on the same local area are particularly evident. More detail on the individual impacts in these locations is provided under separate environmental topic areas in Parts B to D of this Environmental Statement.

57.2 Approach and Methods

57.2.1 Locations particularly subject to multi-disciplinary cumulative impacts were identified in liaison with SNH. Summaries of impacts provided in this chapter are based on the detailed assessments within the relevant chapters of Parts B to D of this Environmental Statement, where methods are also described.

57.2.2 Where possible, the envisaged cumulative impacts are evaluated in terms of significant/not significant.

57.2.3 The mitigation measures described in this chapter are those included in the current scheme proposals. For additional, wider-area mitigation measures under consideration, see chapter 56.

57.3 Impact Assessment

57.3.1 Throughout the Environmental Statement, each discipline chapter has identified potential and residual impacts occurring at specific locations. Cross-references have been made to other subject areas which will also influence and intensify the impacts at these locations. To provide a concise and more accessible illustration of the cumulation of different types of impact on the same localised areas, this section has been included. It identifies and describes key areas along the proposed scheme where multi-disciplinary cumulative impacts are particularly evident.

Craibstone (Northern Leg)

57.3.2 Craibstone is a significant wooded farmland area which lies to the south-west of the community of Dyce and to the south of the A96 Aberdeen to Inverurie Road. The area also supports a golf course and the Scottish Agricultural College (SAC). The AWPR will directly sever the land at Craibstone causing loss of dense mature woodland and the ecological habitat it supports, in addition to disrupting the path network and requiring the demolition of three residential properties. During operation traffic noise levels are predicted to increase from existing conditions with the area to the north of the golf course at Parkhead particularly affected.

57.3.3 Mitigation measures have been designed to reduce the cumulative impacts on the area including:

- Planting to screen visual impacts of the road, while increasing amenity value and replacing valuable habitat for red squirrels, badgers and breeding birds;
- Pathway linkages will be maintained via diversion routes and the provision of noise barriers will reduce impacts on the local community and recreational use of the area, although some journeys will be significantly increased in length; and

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- The construction of culverts and realignment of Craibstone and Gough Burns will be designed to reduce the potential for flooding, although there will be impacts on morphological diversity and reduced sediment transfer.

57.3.4 Mitigation measures can reduce potential impacts though due to the extensive proposed works in the Craibstone area, significant residual cumulative impacts are still likely from the combination of impacts on ecology, the water environment, visual amenity, traffic noise and pedestrians and others.

Kirkhill (Northern Leg)

57.3.5 Kirkhill Forest is situated to the north of Craibstone, and to the west of Aberdeen Airport and the community of Dyce. The proposed route runs along the eastern boundary of the woodland, potentially causing severance to the woodland and field pattern with associated habitat loss. The AWPR also has the potential to impact upon the extensive path network within the forest used for recreation. The receptors assessed at Bogenjoss between Kirkhill Forest and the AWPR are predicted to experience a substantial increase in noise levels from the traffic.

57.3.6 Mitigation measures include:

- Access to the footpath network within the forest to be maintained through provision of an overbridge at Kirkhill for NMUs;
- Visual impacts to be lessened through planting, easing of embankments and new dry stone walls;
- Provision of a noise barrier at Bogenjoss on the northbound carriageway to the north-east of Kirkhill Forest;
- Provision of a wildlife overbridge with planting, will maintain connectivity between habitats either side of the carriageway, especially important for red squirrel; and
- Provision of a treatment pond before the outfall of Bogenjoss Burn will reduce the risk of pollution of the Burn as well as habitat used by otters.

57.3.7 The mitigation measures will reduce, but not eliminate, all impacts and therefore Kirkhill Forest is likely to experience significant residual cumulative effects from the combination of impacts on red squirrel habitat, the landscape character of the area and from traffic noise.

Don Crossing (Northern Leg)

57.3.8 The proposed bridging of the River Don is to the north of the community of Dyce, between Nether Kirkton and Goval. The area to the north of the River Don is identified as an Area of Landscape Significance by the Aberdeenshire Local Plan 2002. The proposed bridge has undergone an initial aesthetic review, which is to be designed as a positive landscape feature, since its presence is predicted to permanently alter the landform and visual character of the area. Potential disturbance to foraging and commuting bats, otters, water vole, salmonids and macroinvertebrates is also likely, as well as substantial increases in traffic noise in the surrounding area.

57.3.9 Mitigation measures include:

- The bridge will be designed to span the watercourse and floodplain, without piers located in the river to minimise the potential for changes in sediment regime within the channel. There will be an exclusion zone on either bank, in order to avoid disturbance to the high ecological value habitat and land of good agricultural quality which exists on either side of the floodplain; and
- Works that could cause a disturbance to salmon will be undertaken outwith the salmon spawning and migration period (14 October to 31 May) in order to avoid disturbance to salmonid populations in the River Don.

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- 57.3.10 The bridge design and construction process will reduce the potential cumulative impacts arising from the combination of impacts on ecology, land use and the water environment though significant residual impacts remain from traffic noise and on the landscape character of the area.

Dee Crossing (Southern Leg)

- 57.3.11 The proposed crossing of the River Dee is to the east of the existing B979 Maryculter Bridge, north of the Kingcausie Estate. As with the Don crossing, the bridge design has also been subject to aesthetic review. The River Dee Special Area for Conservation (SAC) is designated for Atlantic salmon, otter, and freshwater pearl mussels. The construction of the bridge over the river has the potential to directly affect the watercourse and its ecology, impacting on the floodplain and surrounding land use as well as being a prominent new feature on the landscape. During operation traffic noise levels in the area will be elevated from existing conditions.

- 57.3.12 Mitigation measures include:

- Application for an otter development licence and replacement holt sites to ensure that no adverse impact occurs on the local otter population;
- Rigorous pollution prevention measures to ensure that no sediment release occurs during the construction of the bridge which could otherwise affect the water quality and population of freshwater pearl mussels;
- During operation, two treatment ponds will be required to treat road runoff before discharging it via an outfall to the River Dee. This treatment is designed to prevent the watercourse from receiving pollution above allowed levels for metals or suspended solids;
- The bridge is to be designed as a viaduct structure without piers in the channel, supported on concrete abutments to the north and south of the river, though any in-channel works need to be appropriately timed in order to avoid disturbance to the salmon population;
- Planting to minimise the embankments and visually separate and screen the River Dee, AWPR and the B9077; and
- Noise barriers constructed along the length of the bridge on both sides of the carriageway.

- 57.3.13 With best practice construction methods being undertaken, cumulative impacts on the River Dee are reduced. The proposed road will however still cut through the hillsides on either side at Craingles and Milltimber and permanently alter landform and the visual character of the high scenic value landscape. Site specific water quality and sediment modelling have been undertaken for the River Dee and indicate negligible residual impacts as a result of the construction and operation. An Appropriate Assessment is underway commensurate with the River Dee's status as an SAC.

Cleanhill Wood (Southern Leg)

- 57.3.14 The mature conifer plantation of Cleanhill Wood is located to the south of the River Dee and Kingcausie Estate, to the north of the proposed Cleanhill Junction. It supports a diversity of wildlife including the protected species red squirrel, bats, otters and badgers. The proposed route will cut through the western edge of the woodland severing habitat, and causing direct loss and fragmentation.

- 57.3.15 Mitigation measures to reduce these effects include:

- Scrub and riparian woodland planting along the eastern side of the road and around Blaikiewell Burn underbridge to offset that lost to the road and encourage species use. This planting will also help to reduce the impact on amenity value for NMUs;
- Bridge and culvert design will reduce potential impacts on the watercourse and riparian zone, and will be constructed to mitigate against sediment release and accommodate appropriate flows;
- The detailed design of the realigned length of the watercourse will take cognisance of the requirement to mitigate potential impacts; and

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- Provision of an underbridge at Blaikiewell (Maryculter) Road and accommodation underpass will maintain access where the pathway network would otherwise be severed. Where the boundary track to the woodland is severed the proposed diversion via a new track will result in a beneficial impact through decreased journey length.

57.3.16 Cumulative impacts are reduced through mitigation although moderate impacts on the water environment are still envisaged.

Kingcausie Wood (Southern Leg)

57.3.17 The Kingcausie Estate, which encompasses long-established conifer plantation, parkland habitat and the Kingcausie House designed landscape, is situated to the south of the River Dee and the AWPR River Dee crossing. Connectivity with Cleanhill Wood to the south enables the protected species of otters, red squirrels and bats to move freely between woodland areas. The route will run through Kingcausie Estate, sever habitat connectivity and will elevate the levels of noise from traffic.

57.3.18 Mitigation measures include:

- Planting of mixed woodland to integrate with the surrounding mature woodland to promote connectivity between woodland areas and offset habitat loss;
- Provision of a wildlife overbridge and culvert to maintain connectivity between habitat areas;
- Planting to screen views of the road reducing impacts on the visual amenity of the area;
- Installation of a noise barrier on the northbound carriageway to reduce impacts experienced at Eastland House and Cottage; and
- Best practice construction methods to limit sediment release to the catchment burns of the Crynoch Burn (Kingcausie, Blaikiewell and Burnhead Burns), reducing the potential for cumulative impacts upon the water quality and geomorphology of the Burn.

57.3.19 Design and construction methods aim to reduce potential impacts though at this location although residual cumulative impacts remain from the combination of impacts on the water environment (sedimentation), traffic noise, and land use (severance).

Milltimber (Southern Leg)

57.3.20 The area of Milltimber is located to the north of the River Dee, and to the east of the community of Peterculter. The proposed route will sever the landscape at this location, with loss of mature woodland, and decreased accessibility between community facilities. Some of the properties in the area are predicted to experience substantial increases in noise from traffic.

57.3.21 Mitigation measures include:

- Planting to reduce the impact on amenity value, though the visual character of the area will be permanently altered;
- Planting will provide linkages between woodland areas to mitigate impacts on red squirrel and bats and replace habitat destroyed by the route;
- Noise barrier implementation along the length of the southbound carriageway of the AWPR adjacent to the community of Milltimber; and
- Alternative routes for recreational pathways will be provided. Milltimber Junction overbridge will maintain access between community facilities.

57.3.22 Cumulative impacts are reduced through mitigation although significant residual effects remain from the combination of impacts on the landscape character area, noise from traffic during operation, and community and woodland habitat severance.

57.4 Conclusions

- 57.4.1 Conclusions and recommendations in relation to site-specific cumulative impacts are provided within Chapter 59, whilst a summary of the key scheme impacts is provided within Chapter 53 (Summary of Key Scheme Impacts).