



15.0 CONCLUSION IN RELATION TO IMPACTS

15.1 INTRODUCTION

15.1.1 A summary of the conclusion from each assessment topic as defined in DMRB Volume 11 is provided below. The topics have been presented in two groups, non-significant impacts and significant impacts.

15.1.2 Two topic assessments have indicated that significant impacts will be experienced as a result of the new alignment. These topics are Landscape Effects and Noise and Vibration. The assessment has determined that all other impacts will not be significant.

15.2 CONCLUSION

Non-Significant Impacts

AIR QUALITY

15.2.1 The results of the assessment (Table 4.13) show that all properties will experience a reduction in pollutant concentrations during operation. Overall the pollutant concentrations will remain well below the objective levels.

CULTURAL HERITAGE

15.2.2 There will be no significant impacts on cultural heritage features either during construction or on operation of the new alignment.

ECOLOGY AND NATURE CONSERVATION

15.2.3 The proposed route alignment will result in the loss of two fields of young broadleaved woodland. It has been confirmed that there is little ecological importance within this area. None of the habitats within the footprint of the scheme are of particular biological significance. There have been no mammals recorded within the scheme extents, and amphibians have been recorded within two areas of wet ditches on the south side of the existing road. Birds are present in the hedgerows of the scheme, and two trees have potential to contain bat roosts.

15.2.4 With appropriate mitigation no significant impacts are predicted upon nature conservation and biodiversity.

LAND USE

15.2.5 No suitable land is available as exchange land. Therefore mitigation for the loss of land experienced as a result of construction or operation of the scheme will take the form of compensation. Where accesses are affected by the scheme alternative access has been provided. There will be no significant impact on land use as a result of the scheme.



PEDESTRIANS, CYCLISTS, EQUESTRIANS AND COMMUNITY EFFECTS

- 15.2.6 Although there is no designated footway located along this section of the A737, the NMU survey highlighted the presence of pedestrians, cyclists and equestrians.
- 15.2.7 The new alignment is not considered to impact on journey length or travel patterns for these users.
- 15.2.8 By realigning the carriageway and retaining the existing carriageway, it will allow for safer travel for these users.

VEHICLE TRAVELLERS

- 15.2.9 The proposed improvement on the A737 at The Den is predicted to result in a moderate positive impact on driver stress due to the improved, DMRB compliant alignment. There is predicted to be a neutral impact on views from the road, as although there are raised sections at both the western and eastern ends of the proposed improvement, there is a gradual cutting through the middle, which will result in an enclosed feeling for the vehicle traveller.

ROAD DRAINAGE AND THE WATER ENVIRONMENT

- 15.2.10 The proposed improvement to the A737 at the Den is not predicted to present significant impacts on surface water bodies, groundwater or flooding.
- 15.2.11 It is predicted the proposed road drainage layout will improve the current situation on the A737 through preventing localised flooding on the carriageway. It is envisaged the installation of three treatment ponds will provide improved water quality within the surface water run off when compared to the existing run off from the A737.

GEOLOGY AND SOILS

- 15.2.12 A number of ground investigations have been carried out over a number of years at this site. Made ground, peat, boulder clay and limestone coal formation have been found. There is one recorded mineral working mine within the scheme extents and eight within 500m. The land surrounding the scheme is predominately agricultural however; previous land uses of the site include a smithy, petrol station, mine workings and quarrying. Tests of the soil and water were below the relevant assessment criteria and not considered to be a source of potential contamination.
- 15.2.13 Following implementation of the identified mitigation measures during construction, no significant impacts are predicted.

POLICIES AND PLANS

- 15.2.14 The A737 improvements at The Den will have positive effects in terms of national, regional and local planning policies. Road safety is promoted within the scheme. The scheme will enhance driver safety along this stretch of the A737 through the improvement to the road realignment. There will also be improved pedestrian facilities.
- 15.2.15 Within the scheme there will be positive improvements within the improved drainage network as the introduction of the Sustainable Urban Drainage



ponds and attenuation basins will ensure water quality is appropriately managed and the landscaping proposals will enhance the visual landscape. The alignment has been designed to minimise the loss of agricultural land and avoid areas of archaeological or ecological sensitive areas. As part of the scheme the existing junctions and accesses will remain relatively unchanged resulting in minimal impacts to non – motorised users (NMUs) and local residents.

- 15.2.16 The proposed scheme is compliant with all relevant national, regional and local planning policies.

Significant Impacts

LANDSCAPE EFFECTS

- 15.2.17 It is anticipated that the beneficial impact on landscape character within the village as a whole will persist over time. There will be a slight impact within the open farmland as the new alignment will be slightly more prominent in the landscape than the existing road. No significant long-term impacts are predicted on the landscape.
- 15.2.18 The long-term residual impacts on the views of the road from the defined viewpoints are considered to be more significant than the impacts on the landscape.
- 15.2.19 Three properties will experience a moderate beneficial impact, and one will experience a slight beneficial impact. A further three properties will experience a neutral impact, with five properties experiencing a slight adverse impact. Three properties (No. 1, The Den, Fernside and The Graze Restaurant) will experience a moderate adverse impact with these properties having either direct views along the new alignment or close direct views of the road.
- 15.2.20 In the case of No. 1, The Den, the resident has requested that no planting be included along the northern property boundary as they wish to retain open views over the open countryside. The new alignment however, is located directly north of the property and it is considered that high sided vehicles will be visible in this view at times.
- 15.2.21 Although there is an increase in the height of the embankment this integrates better with the surrounding environment.
- 15.2.22 At Fernside, the resident will have direct views onto the A737 and of the new access to The Graze Restaurant.
- 15.2.23 At The Graze Restaurant the views to the west over open countryside will remain unchanged. The view south will be of the new access road to Crossroads however the new hedge will help to partially screen direct views. The view east will be dominated by the new access to the restaurant and the main alignment of the A737.
- 15.2.24 It is considered that only No. 1, The Den, Fernside and The Graze Restaurant will experience significant residual visual impacts due to the scheme.



NOISE AND VIBRATION

- 15.2.25 Seventeen dwellings located outside the 600m calculation area but within the 1km study area, will be subject to negligible impacts at both opening and future assessment years.
- 15.2.26 The proposed realignment of the A737 will redirect the route from the front to the rear of the following properties, with these dwellings therefore anticipated to experience an adverse impact on 'rear' facades and a beneficial impact on the 'front' façade in the long term. With the 'rear' facades of No's 1 and 27 The Den experiencing a large adverse impact, and No 29, a moderate adverse impact:
- No. 1 The Den
 - No. 27 The Den
 - No. 29 The Den
- 15.2.27 The proposed scheme will decrease the distance between the following receptors and the road centreline, thereby increasing noise levels on façades facing the proposed route, with all properties predicted to experience a moderate adverse impact:
- No 25 The Den
 - No 25a The Den
- 15.2.28 The proposed scheme will increase the distance between the following receptors and the road centreline, thereby decreasing noise levels on façades facing the proposed route, with all properties predicted to experience a beneficial impact:
- No 17/19 The den (slight – very large beneficial)
 - No 22 The Den (slight beneficial)
 - No 24 The Den (slight beneficial)
 - Dungoyle (slight beneficial)
 - Nidaros (slight beneficial)
- 15.2.29 In the long term, the proposed scheme is predicted to have a neutral impact on The Graze restaurant, a slight adverse impact on Fernside, West Muirhouse and a moderate adverse impact on the following receptors:
- Maulside 1
 - Maulside 2
 - Barkip
 - Park Cottage
 - Hareshaw
 - Glenshaft
 - Highden
 - Maulside Lodge
- 15.2.30 With the proposed scheme, no dwellings qualify for noise insulation under NISR.



15.3 CUMULATIVE IMPACTS

- 15.3.1 It is necessary to consider individual effects in combination as the resulting cumulative effect may be significant. Within this process assigning significance to cumulative effects should be determined by the extent to which the impacts can be accommodated by the receptor or resource.
- 15.3.2 The following factors are considered when determining the significance of cumulative effects:
- Receptors affected
 - How will the condition of the receptor be affected
 - Probability of effects occurring
 - Ability of receptor to absorb further effects
- 15.3.3 Table 15.1 below illustrates the five categories for determining the significance of cumulative effects.
- 15.3.4 There are no cumulative impacts associated with the implementation of multiple road improvement schemes along this route.

Table 15.1 – Cumulative Effects Significance Categories

Significance	Effect
Severe	Effects that the decision-maker must take into account as the receptor/resource is irretrievably compromised
Major	Effects that may become key decision-making issue
Moderate	Effects that are unlikely to become issues on whether the project design should be selected, but where future work may be needed to improve on current performance
Minor	Effects that are locally significant
Not Significant	Effects that are beyond the current forecasting ability or are within the ability of the resource to absorb such change

- 15.3.5 As a result of the cumulative effect assessment, it is considered that there are minor cumulative effects. Increases in air pollutant concentrations are minimal and will not result in air quality objectives being exceeded at any receptor.
- 15.3.6 At No. 1 The Den, the owners requested that no planting be included that would restrict their open views to the north. They also expressed a preference for the shaped landform. In view of this, it is considered that the receptor has the ability to absorb the changes and therefore the impact is not significant.
- 15.3.7 At No's 25, 25a and No. 29 The Den, the slight impact caused by a loss of agricultural land and the moderate impact relating to an increase in noise levels, is considered to have a minor cumulative impact on the receptor. The owners are supportive of the proposals and also prefer the shaped landform.
- 15.3.8 The cumulative effect is only considered to be significant at the specific receptors mentioned above, and therefore will be on a local level.



15.3.9 Table 15.2 Summary of Cumulative Effects illustrates those receptors which may experience a cumulative effect as a result of the scheme.

Table 15.2 Summary of Cumulative Effects

Receptor	Cumulative Effect	Mitigation	Significance of Effect
No. 1 The Den	Slight increase in air pollutant concentrations	The air pollutant concentrations will remain well below the objective levels of The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007) at all properties.	Not significant
	Moderate impact on views to the north	Resident has requested that no planting be included along the northern property boundary as they wish to retain open views over the open countryside. The new alignment however, is located directly north of the property and it is considered that high sided vehicles will be visible in this view at times.	
	Large impact due to increase of noise levels from the rear of the property	<p>The road is located within a cutting with embankments specifically sculptured to negate the requirement for noise barriers. Owners expressed a preference for current design proposals.</p> <p>Although there is an increase in the height of the embankment this integrates better with the surrounding environment and is lower in height compared with the noise barrier.</p> <p>With the proposed scheme, no dwellings qualify for noise insulation under NISR.</p>	



No's 25 and 25a The Den	Slight increase in air pollutant concentrations	The air pollutant concentrations will remain well below the objective levels of The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007) at all properties.	Minor
	Slight impact due to loss of agricultural land	New field access points will be provided where necessary. The fragmentation of fields is not considered to affect the viability of the associated farm unit.	
	Large impact due to increased noise levels from the front of the property	Landowners involved are supportive of the proposed road improvement scheme and although field severance would occur in some areas, the proposals of new access points are considered appropriate.	
Receptor	Cumulative Effect	Mitigation	Significance of Effect
No. 29 The Den	Slight impact due to loss of agricultural land	Landowners involved are supportive of the proposed road improvement scheme and although field severance would occur in some areas, the proposals of new access points are considered appropriate.	Minor
	Moderate impact due to increase of noise levels from the rear of the property	The road is located within a cutting with embankments specifically sculptured to negate the requirement for noise barriers. Owners expressed a preference for current design proposals. With the proposed scheme, no dwellings qualify for noise insulation under NISR.	