



NON-TECHNICAL SUMMARY



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INTRODUCTION

The proposed scheme is for the realignment of a section of the A737 at The Den (as illustrated in Scheme Location Drawing Number 10/SW/0901/037/101 Rev A.) The realignment is designed to bypass a series of sub-standard bends, improve traffic flow and introduce road safety benefits. The proposal would leave the route of the existing A737 just east of The Den Village and pass to the north of the village between it and Meadowhead Farm before re-joining the existing A737 immediately west of the village, a realignment of 0.94km in length (See Drawing 10/SW/0901/037/013 – General Layout).

The aim of the Environmental Statement (ES), as defined by Volume 11 of the Design Manual for Roads and Bridges (DMRB, 1993 and Revisions), is to ensure that decisions relating to route selection and design details can be guided by informed consideration of the environmental consequences.

This Non-Technical Summary provides a summary of the findings of the ES.

NEED FOR THE SCHEME AND SCHEME BACKGROUND

The A737 travels north east from Irvine and joins the M8 south of Glasgow at Junction 28a, near Glasgow International Airport. It is classified as a trunk road (major road) and is the main route to Glasgow from Irvine, Kilwinning, Dalry and Beith. At The Den, the A737 does not meet design standards (DMRB) for a road of this importance.

In 1984, Strathclyde Regional Council first proposed the realignment of the A737 at The Den. As a result of local government reorganisation in 1996, responsibility for the project was devolved to the newly formed North Ayrshire Council. The A737 was reclassified as a trunk road the same year and responsibility for the project then passed to the Scottish Executive (now the Scottish Government).

When Transport Scotland was created in 2006, they became responsible for the project. Transport Scotland is the body responsible for delivering the realignment of the A737. In addition, they are the regulatory body who will decide whether the realignment should be authorised under the Roads (Scotland) Act 1984 and the Environmental Impact Assessment (Scotland) Regulations 1999 (as amended). The ES supports this assessment, and presents the evidence and conclusions of an Environmental Impact Assessment (EIA) of the proposal to build the scheme.

Throughout the changes of ultimate responsibility, North Ayrshire Council had continued to provide the engineering and design expertise for the project. Previous Environmental Assessment Reports for the scheme were prepared from 2007-2010 by Royal Haskoning in accordance with Environmental Impact Assessment (Scotland) Regulations 1999 (as amended) and volume 11 of the DMRB on behalf of and under contract to North Ayrshire Council. Amey have been commissioned by Transport Scotland to undertake the preparation of this ES.

The A737 is a single carriageway all-purpose road with one lane in each direction. It consists of a double bend as it runs through The Den which reduces the safe speed of traffic and increases the risk of accidents. Between 2006 and 2010 there were 38 road accidents in the vicinity of The Den resulting in two fatalities, five serious and thirty one minor injuries. The frequency of accidents at The Den is sufficiently high to cause concern and lend weight to any potential improvement. By realigning the A737



to the north of The Den, the road will be straightened and will have improved traffic flow and improved safety.

PROPOSED SCHEME

The proposed work will involve the realignment of the carriageway to bypass a series of sub-standard bends, improve traffic flow and introduce road safety benefits.

The scheme connects with the existing A737 at The Graze Restaurant, veering north through agricultural fields between The Den and Meadowhead Farm. The new alignment then cuts across Auchengree Road before re-joining the A737 east of the junction A737 with Auchengree Road.

The design of the new route is based upon avoiding the majority of the residential properties at The Den. The re-alignment will consist of the following:

- Approximately 0.94km of single carriageway all-purpose road with one lane in each direction. The road will be 7.3m wide, with 1m hard strips at each side. Verges on each side of the road will be 2.5m wide.
- The new road will be on embankment (higher than existing ground level) of up to 2.5m at either end of the new alignment and in cutting (lower than existing ground level) of up to 4m within the middle section.
- Access will be provided to The Den Village by a new junction located opposite the existing Auchengree Road junction.
- Construction of a road drainage system including two attenuation basins and filter drains for the treatment of road run-off.
- Safety fences and signs where required, and
- Landscape planting.

The existing A737 bypassed by the realignment will be de-trunked, the section from the new access to The Den to where it joins Muirhouse Road becoming part of the local road network maintained by North Ayrshire Council. The section after this point and leading to Fernside will become a quiet cul de sac also maintained by North Ayrshire Council.

CONSTRUCTION

The scheme is expected to take 32 weeks to build. It has been assumed that construction activities would be carried out during the daytime (08:00 to 19:00 Monday to Friday and 08:00 to 13:00 Saturday). Occasional night and Sunday working may be required for some activities to minimise disruption on the local road network.

Construction activities would include earthworks and land forming for embankments and cuttings, installation of drainage systems, road surfacing and signing. These activities would create additional traffic movements in the area and may require traffic management measures at times.

If additional land is required out with the scheme area for a site compound and to store materials and equipment, then necessary permissions and licences would have to be obtained by the contractor.

ENVIRONMENTAL EFFECTS

Air Quality

The local air quality is good and concentrations of pollutant levels are well below The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007) objective levels.

As the surrounding area is rural, vehicle exhaust emissions are considered to be the main source of nitrogen dioxide (NO₂) and particulate matter (PM₁₀) in the area.

During construction, the generation of dust (particulate matter) would be minimised by implementing best practice techniques.

During operation all properties, are predicted to experience an increase in pollutant concentrations. These increases are very small and overall the pollutant concentrations are predicted to remain well below the objective levels.

It is envisaged that all properties will experience an improvement in local air quality due to the realignment of the carriageway.

Cultural Heritage

There are four sites located within 300m of the scheme which have been categorised as Historic Buildings. These are as follows: Muirhouse (Farmstead) (Site 1); Site of the Den/Kersland Barony School (Site 2); Maulside Lodge (Site 3) and Glengarnock, Maulside Lodge (Site 4). Muirhouse Farm has been designated as a listed building (category C). There are two non-designated areas of dry stone wall which are located within 300m of the scheme extents.

The new alignment will be further from Sites 1 and 2 but closer to Site 3 than the existing A737. Site 4 is located out with the eastern scheme extents and will therefore not be impacted by the realignment. During construction, the increased noise and dust is likely to cause a short term negative impact; however on completion of the works there will be a slight beneficial impact as the setting is enhanced. The sections of dry stone wall adjacent to Fernside and between Auchengree Road and Maulside Lodge will be lost during construction. The scheme design incorporates replacement of these dry stone walls using stone from the original wall. As the new walls weather, they will integrate into the surroundings, and the impact will be reduced.

Due to the potential for discovering archaeological remains, an archaeological watching brief will be carried out during any excavation work as a precaution to prevent damage to unrecorded sites.

The implementation of appropriate mitigation including the use of trial trenching by specialist archaeological consultants will minimise any adverse impact.

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



Ecology and Nature Conservation

There are 10 designated areas within 2km of the scheme, these include: 2 Raised Bog Inventory's (RBI); 5 Ancient Woodland Inventory's (AWI); Clyde Muirshiel Regional Park and Bankhead Moss which is designated as a Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) due to its active raised bogs. The proposals will only affect the southern edge of one area of Ancient Woodland. This area contains immature broadleaved woodland and there will be no significant impact.

The proposed road alignment will result in the loss of two fields of young broadleaved woodland, and several fields of improved and semi-improved grassland. There are areas of marshy grassland where the proposed new section of the A737 will join the existing road. Scottish Natural Heritage (SNH) has confirmed there is little ecological interest or importance within the area of the proposed scheme. None of the habitat within the footprint of the scheme extents is of particular biological importance, and there will be no significant impact.



Two trees, a large sycamore and a beech, have potential to provide habitat for bats. These are due to be felled as part of the construction process. Prior to felling the trees will be checked by a licenced bat specialist. If any roost is discovered, a Protected Species Licence may need to be obtained.

Birds have been recorded utilising and nesting in the hedgerows and the trees running parallel with the road. Removal of these areas will cause the removal of bird habitat. To prevent disturbance to nesting birds, clearance works should not commence during the bird breeding season (March to August inclusive). If works are undertaken during this season, the vegetation will first be surveyed by a suitability qualified specialist.

The establishment of tree and shrub areas is included in the landscape design for the scheme. Trees removed as part of the scheme will be replaced with native local species, chosen to maximise wildlife potential. Fencing will be set 1m away from hedges to protect hedge-bottom plant species.

Overall with appropriate mitigation measures, there are no significant impacts predicted on nature conservation and biodiversity.

Landscape Effects

The majority of the site comprises fields used for grazing with improved and semi-improved grasslands predominating and newly planted mixed deciduous woodland. The highest point of the site is near the centre, with



the land sloping gently away to the east and west. At the western end of the site there is a crossroads with a café / restaurant on the roadside, just to the north of the site boundary.

The land use surrounding the site comprises mixed grazing (cattle and horses) and areas of newly planted mixed deciduous woodland towards the centre. There are several detached houses to the south (The Den area). The surrounding land generally slopes gently from north to south, the existing A737 road to the south being the lowest point. There are patches of marshy ground in the fields, particularly in any low points and near the burn.

During construction the landform will be impacted by the presence of excavations, stock piling of soils and construction materials, and the formation of road embankments, drainage ditches and detention basins. Some agricultural land and a large area of newly planted woodland will be lost. Additional roadside vegetation in the form of mature trees will be removed from the area between Auchengree Road and Maulside Lodge. Small sections of hedgerow will be removed from existing field boundaries.

The dry stone wall located between Auchengree Road and Maulside Lodge will be removed as a result of construction works. The construction works and associated materials, vehicles and traffic management, will emphasise the presence of the road in the landscape.

During operation of the scheme it is likely that The Den as a whole will experience an immediate beneficial change in landscape character due to the absence of fast moving traffic and HGVs through the village centre. This will result in the village becoming more peaceful and tranquil and a considerably safer environment.

The majority of the new road will be in cutting and will be unobtrusive in the landscape. The two areas where the new alignment joins the existing A737 will be on small embankments and will be more prominent, until new planting matures and integrates with the immediate surroundings.



The land form will be altered slightly by the new road embankments, drainage ditches and detention basins. New dry stone wall along with new planting will conserve the landscape character between Auchengree Road and Maulside Lodge, and at Fernside. No significant long-term impacts are predicted on the landscape.

There are a total of 15 visual receptors within the study area. The residents and users of these buildings are likely to have views of the

proposed scheme and associated construction works. It is considered that No. 1, The Den, Fernside and The Graze Restaurant will experience significant residual visual impacts due to the scheme.

At No. 1, The Den the close views to the north will be of the top of the embankment and at times high-sided vehicles will be visible from this viewpoint. Low level native shrub planting has been proposed on the embankments north of this receptor to retain open views across the countryside.



At Fernside the view west from this receptor remains relatively unchanged as it consists of the road and The Graze Restaurant; however the new access to the restaurant will be visible. The view north will still be of the road and surrounding fields, but a new area of trees will be planted diagonally opposite the property, on the other side of the road. This area of planting will restrict the views to the north east as it matures.

As the majority of the road is in cutting the views of the road to the east are restricted. There are no views of the turning head directly to the east of the receptor from the dwelling. This property will be accessed via the old road which will be closed off at Fernside allowing only one access from the new junction north of Dungoyle to The Den village.

At The Graze Restaurant there will be direct views from this receptor across the A737 to the new access for the Crossroads which was previously located opposite Brownhill Road. Both close and long distance views are afforded to the east along the new road. The associated planting is visible from this property however it will not screen the road alignment. Views of a new turning head adjacent to Fernside will be restricted due to new and existing vegetation east of this private residence.

It is considered that the new alignment will not be visible or will be screened by planting from the remaining dwellings at The Den.

Land Use

There are 15 private residential properties within the scheme extents and one commercial property (The Graze Restaurant). The private residences are concentrated towards the centre of the scheme extents with the exception of No. 12 "Fernside" situated towards the western extent and Maulside Lodge which is situated to the eastern extent. No land within the scheme is designated a community or development land, however four sites within the scheme have planning applications associated with them. The predominant land use surrounding the existing road is agricultural and is classed as land capable of producing a narrow range of crops. The land is used for mixed grazing (cattle and horses) with improved and semi-improved grasslands predominating and newly planted mixed deciduous woodland.

No properties require being demolished. Small areas of land from the gardens of No.12 "Fernside" and No. 29 will be required. Small areas of land will be required from sites with planning applications associated with them. A total area of 38,423m² of agricultural land will be lost due to the scheme. Five individual farm units will be affected by the proposals, but the viability of each will not be affected.

The total land area required for construction is 48,539m². All land take will be permanently utilised for the new road. As no exchange land is available, mitigation for the loss of land experienced as a result of the scheme will be compensation.

Public Utilities

Currently, Scottish Power (SP) underground and over ground lines, British Telecom (BT) underground & over ground lines, Scottish Water (SW) water main and private water supply pipes running through the proposed development area.



The proposed realignment will require overhead poles to be moved, underground lines to be diverted and fibre cables to be diverted. It will also be necessary to divert the septic tank outfall from Fernside.

No significant impact is predicted as a result of land requirements for the proposed scheme.

Noise and Vibration

Ten receptors are located within 50m of the centreline of the existing alignment and six are within 50m of the proposed route.

There are no community facilities within the study area, with the closest facilities located within the town of Dalry approximately 4km southwest of the scheme extents.

The proposed realignment of the A737 will direct the route to the rear of three residential properties. These dwellings are therefore anticipated to experience a decrease in noise levels on façades facing the existing route and an increase on façades facing the proposed route. The increase in noise levels at these properties No. 1 The Den, No. 27 The Den and No. 29 The Den, is predicted to be significant.

The proposed scheme will decrease the distance between No 25 and 25a and the road centreline, thereby increasing noise levels on façades facing the proposed route.

The proposed scheme will increase the distance between six receptors and the road centreline, thereby decreasing noise levels on façades facing the proposed route, with these properties predicted to experience a beneficial impact.

The scheme is predicted to have a neutral impact on The Graze Restaurant and a slight to moderate adverse impact on a further ten properties.

During construction, noise in the vicinity of working areas will be unavoidable, arising from the movement and loading/unloading of vehicles and machinery, earthworks, rock removal, tipping of rock and all other associated construction activities. The extent of the noise and vibration impacts will vary throughout the scheme; depending on design and the contractor's methods of working and working hours.

With current design proposals, the road is located within a cutting with embankments specifically sculpted to negate the requirement for noise barriers. The effectiveness of this approach was modelled and discussed with local residents. As a result, no further mitigation is required.

With the proposed scheme, no dwellings qualify for noise insulation under The Noise Insulation (Scotland) Regulations 1975.

Pedestrians, Cyclists, Equestrians and Community Effects

There is one designated footway located along this section of the A737 which links properties 17/19, 27 and 29 The Den. Pedestrians will be slightly affected by the scheme proposals due to the new road alignment. The existing road will remain open for local residents and lower traffic flows will provide a safer route for pedestrians travelling within the local area. The new alignment is not considered to impact on journey length or travel patterns.

There are no designated cycle routes along this section of the A737 and therefore the new alignment will not impact on journey length or travel patterns for cyclists.

According to the British Horse Society, there are no equestrian routes located within the vicinity of The Den; however some equestrian movements have been noted in

the area. These movements have been associated with Maulside Lodge as the owners breed horses. The new alignment is not predicted to affect equestrian movements in the area.

There are no key community facilities such as schools, public buildings or public open spaces within the study area. There is no evidence of any formal recreational activity within the study area. The Graze Restaurant is situated at the western end of The Den and is the only commercial business in the vicinity of the realignment.

Overall the proposal is not considered to impact on journey length or travel patterns for these users. Safety will be significantly improved within the village setting due to the removal of through traffic.

Vehicle Travellers

Driver stress on the existing A737 is assessed as moderate. This is due to restricted forward visibility associated with bends in the road on entering the village, and the potential for pedestrians to be on the road.

The proposed road improvement is predicted to reduce driver stress by providing an enhanced road alignment, with clear and open forward views. As the new alignment is remote from the village the potential for pedestrians to be on the road is also removed.



The view from the existing road is of The Den Village and intermittent views of the surrounding countryside. Within the village views are obscured by hedges and trees and the road itself feels enclosed, with no open views of the countryside available.

The new road will be positioned to the top of a gentle embankment at both the western and eastern ends of the scheme and will open up views of the surrounding countryside. This will provide an enhanced view for vehicle travellers.

The driver experience thereafter will remain similar due to the enclosed feeling which the gradual cutting provides similar to the restricted view from the existing alignment.

Overall driver stress along this section will be reduced and forward visibility will be improved. There will be little change to views from the road as part of the section is in cutting below the existing ground level.

Road Drainage and the Water Environment

The current road runs along the valley bottom and the existing rainfall catchment is delimited by the tops of the surrounding hills. There are three main watercourses in the vicinity of the site. The River Garnock is located to the north of the site, and two tributaries of the Garnock, the Powgree Burn which lies to the north east of the site and the Bombo Burn which lies to the south of the site. None of these watercourses flow through The Den. Within the scheme there is an unnamed watercourse located adjacent to the existing A737 and Auchengree Road.

The proposed improvement is not within an area prone to flooding and is approximately 2km from the floodplain of the River Garnock.

The existing road drainage consists of depressions adjacent to the existing carriageway, which hold water and allow it to drain away to neighbouring watercourses.

The proposed road drainage design consists of a filter drain system with three treatment/attenuation areas. One area will be located to the western end of The Den, adjacent to the west bound carriageway. Attenuation basins will also be located adjacent to the east and west bound carriageways, near Auchengree Road.

The proposed drainage design takes account of the septic tanks which are within the area. The outfall from these will continue to be discharged to the existing surface water ditch, adjacent to the old A737. The new road drainage system will be kept separate from this ditch.



Licences under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) will be required to culvert the unnamed watercourse below the new road, and for its

re-alignment along Auchengree Road

The proposed improvement to the A737 at The Den is not predicted to present significant impacts on surface water bodies, groundwater or flooding.

Overall 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.

Geology and Soils

No sites designated for geological interest would be affected by the proposed scheme. Peat removed during the construction phase may be reused on site or replaced with a fill material. The replacement of removed soils with fill will result in localised reduction in infiltration of surface water into the surrounding ground.

There is one dis-used mineral mine recorded within the scheme extents and eight within 500m. Underground and opencast operations are recorded, however all operations have now ceased.

The majority of the land within 500m of the existing alignment has been used as agricultural land since the mid 1800's; however, several possible areas of quarrying have been identified on historical maps. It is likely that these areas have been subject to infilling and consequently there is a potential for harmful or contaminated materials to be present. Test results for the soil and water were below the relevant assessment criteria and are therefore not considered to be a source of potential contamination.

The bedrock geology will be unaffected by the scheme proposals although some soils would be lost. No significant impacts are predicted on geology or soils.

Policies and Plans



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 not jeopardise any committed development opportunities.

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.

The proposed scheme is, therefore, compatible with all relevant national, regional and local planning policies.

Conclusion in Relation to Impacts

Two 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.

Cumulative Impacts

It is necessary to consider effects on individual receptors in combination as the resulting cumulative effect may be significant.

Some residents could be affected by a reduction in localised air quality, increases in noise levels and by changes to the views experienced from their properties.

Mitigation in the form of landscape screen planting is incorporated into the scheme design. Over time this will help the new road integrate into its surroundings. Increases in air pollutant concentrations are minimal and will not result in air quality objectives being exceeded at any receptor.

To avoid a large increase in noise levels being experienced at some properties, the scheme design incorporates shaped embankments. During consultations, residents expressed a preference for the shaped landform in comparison with a noise barrier.

There are no cumulative impacts associated with the implementation of multiple road improvement schemes along this route.

No significant cumulative effects are predicted as a result of the scheme.