



**TRANSPORT
SCOTLAND**
CÒMHDHAIL ALBA

Environmental Impact Assessment Record of Determination

A77 DBFO to Grassyards SB

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Project Details

Description

The works are required to maintain the safety and integrity of the southbound (SB) A77 carriageway from the Design, Build, Finance and Operate (DBFO) boundary to Grassyards road. This section of carriageway is currently exhibiting various areas of cracking, crazing and potholes, as well as wear and tear of road markings, missing road studs and damaged kerbs, channels and edgings.

Works will involve carriageway resurfacing utilising TS2010 surface course to varying depths dependent on condition, ranging from 40mm to 100mm depths across the length of the scheme.

The proposed construction activities will involve the following:

- Milling of existing bituminous material by road planer;
- Hand-held jackhammer and compressor for breaking up surfaces not accessible by planer;
- Loader/excavator used to collect and move excess material;
- Base/binder material laid and compressed (where required);
- New bituminous material laid by a paver;
- Material compacted using a heavy roller;
- Mechanical sweeper to collect loose material;
- Heavy Goods Vehicle (HGV) for removal and replacement of material; and
- Road markings replaced using an extrusion tool.

The total area of the works is approximately 17,000m² (1.7ha) across the SB lane.

The proposed construction start date is the 16th June 2023. The duration is yet to be determined, however overnight will be required.

Traffic management (TM) to be utilised will likely be in the form of overnight closures with a suitable diversion route in place.

Location

The works are located on the A77 SB carriageway between the DBFO boundary and Grassyards road, within a semi-rural setting of Kilmarnock, East Ayrshire. The scheme is located between the National Grid References (NGR) detailed below, as illustrated in Figure 1.

- Scheme start: NS 44739 40821
- Scheme End: NS 44739 39148

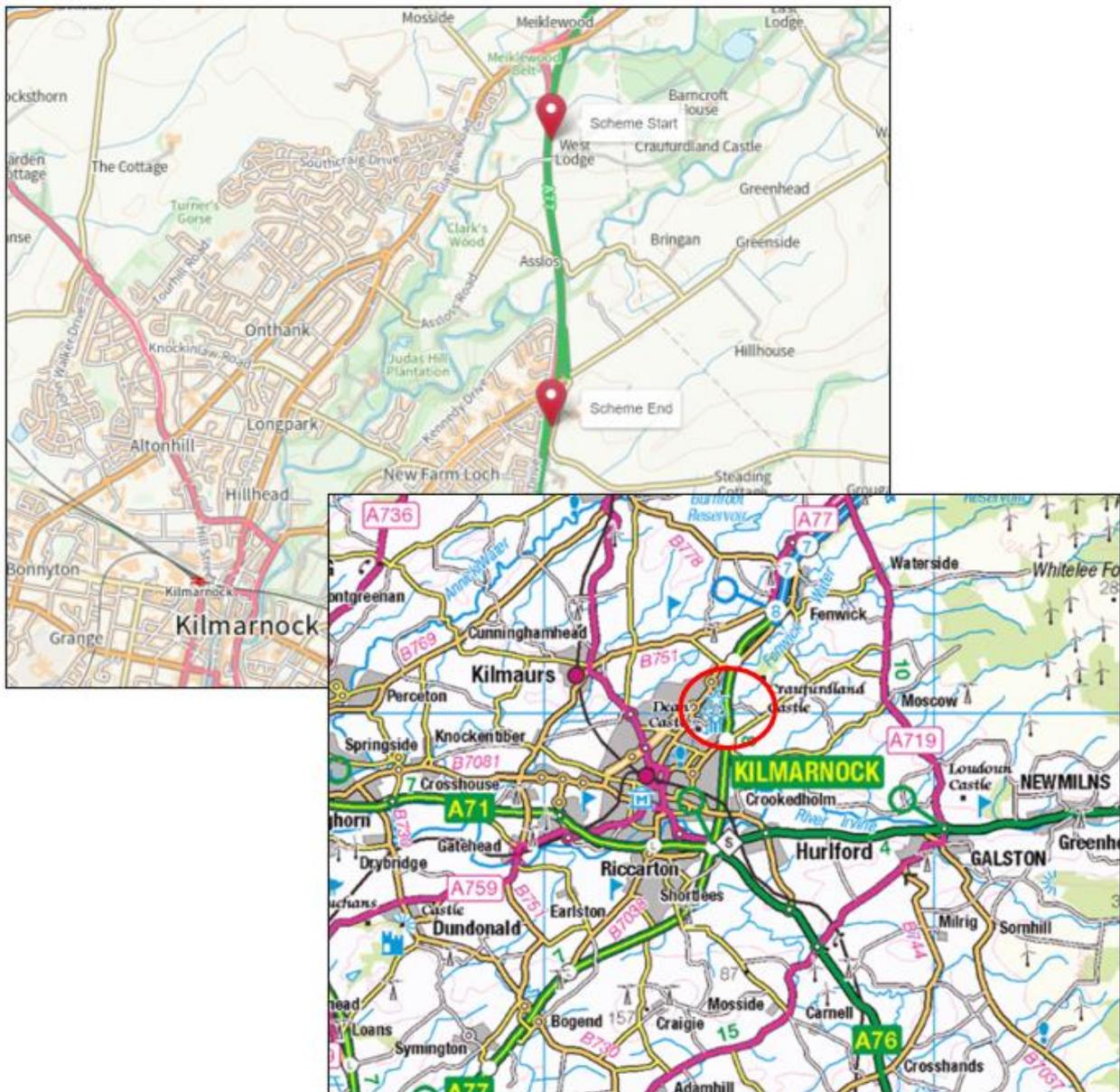


Figure 1: Scheme Location

Description of local environment

Air quality

The works are located in a semi-rural setting within East Ayrshire, surrounded primarily by areas of agricultural and residential land use. There are a large number of residential properties (over 100) within 300m of the works location, with the closest properties located on Kennedy Drive approximately 20m west of the A77 carriageway at the southern scheme extent. Assloss farm is also located within 300m of the works, approximately 40m west of the A77 carriageway on Wardlaw Road.

The [Average Annual Daily Flow](#) (AADF) in 2021 for the A77 carriageway within the scheme extent accounted for 43,399 vehicles (ID: 20756), with an average of 5.7% HGV.

The scheme does not fall within any [Air Quality Management Areas](#) (AQMAs) declared by East Ayrshire council.

Cultural heritage

A desktop study using [PastMap](#) has identified Assloss Tower (ID: LB12529), a 16th century tower, category B listed located approximately 80m west of the A77 carriageway on Wardlaw Road separated by woodland and farm buildings. No other features of cultural heritage were found within 300m of the works location.

All works will be located within the existing carriageway boundary and will not impact any areas of land that have not previously been subjected to engineering activity.

It has been determined that the proposed scheme does not carry the potential to cause direct or indirect impact to cultural heritage. As such, impact has been assessed as being 'no change' and cultural heritage has therefore been scoped out of further assessment.

Landscape and visual effects

A desktop study using [NatureScot Sitelink](#) and [PastMap](#) online interactive map has not highlighted any areas designated for landscape character within 300m of the works.

Historic Environment Scotland's [HLAMap](#) has highlighted the surrounding historic land use to comprise of fields, farmland, managed woodland and urban areas.

The works will be restricted to the existing carriageway boundary and will not impact upon the surrounding landscape. Views of, and from the road will be temporarily impacted during construction due to the presence of works, TM and plant. As the works are operating on a like-for-like basis, no permanent changes to landscape features are determined.

As such, impact to local landscape has been assessed as being 'no change' and has been scoped out of requiring further assessment.

Biodiversity

The works are located in a semi-rural setting within East Ayrshire, surrounded primarily by areas of agricultural and residential land use.

A desktop study using [NatureScot's Sitelink](#) has not identified any locally designated sites within 300m, or any European designated sites within 2km of the works.

Amey's Invasive Non-Native Species (INNS) Database has not identified any invasive plant species within the scheme extents.

A field survey was scoped out due to the nature of the works (resurfacing) and that all works will be restricted to the existing carriageway boundary, with no designated sites within 2km of the scheme extents.

Geology and soils

The [National Soil Map of Scotland](#) has identified the local soil type as mineral gleys.

A desktop study using the [British Geological Survey Map](#) identifies the local geology types as the following:

- Bedrock geology: Troon Volcanic Member - Basalt, olivine-macrophyric. Igneous bedrock formed between 329 and 319 million years ago during the Carboniferous period.
- Superficial deposits: Till, Devensian - Diamicton. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period.

As a result of the works taking place strictly within the existing manufactured footprint, it has been determined that the proposed scheme does not carry the potential to cause direct or indirect impact to geology or soils. As such, impact has been assessed as being 'no change' and has been scoped out of requiring further assessment.

Material assets and waste

Table 1 – Key materials required for activities

Activity	Material Required	Origin/ Content
Site construction	<ul style="list-style-type: none"> • TS2010 surface course; • AC32 base; • AC20 binder; • Bitumen; • Road paint; and • Road studs. 	<p>A proportion of reclaimed asphalt pavement (RAP) is used in asphalt production. Typical RAP values for base and binder are 10% -15% with up to 10% in surface course.</p> <p>TS2010 surface course allows a wider array of aggregate sources to be considered when compared to typical stone mastic asphalt (SMA). As a result the use of TS2010 will reduce the usage of imported aggregates and increase the use of a wider range of sustainable aggregate sources.</p> <p>Road studs will be obtained from recycled sources where possible.</p> <p>Road paint will be obtained from primary sources.</p>

Table 2 – Key waste arising from activities

Activity	Waste Arising	Disposal/ Regulation
Site construction	<ul style="list-style-type: none"> • Road planings; • Studs; and • Road kerbs. 	<p>Further on-site testing is required to determine the presence of coal tar within the bituminous layers of the existing carriageway surface course, which will be removed.</p> <p>Any tar-contaminated planings (if produced) will require removal off site for treatment/disposal at a licenced waste facility:</p> <ul style="list-style-type: none"> • A Scottish Environment Protection Agency (SEPA) consignment note will be required. • SEPA will be informed at least three days prior to the movement of special waste. <p>Any road planings not contaminated with coal tar generated as a result of the works will be recovered in accordance with the criteria stipulated within SEPA document 'Guidance on the Production of Fully Recoverable Asphalt Road Planings'.</p> <p>Road studs will be recycled and reused where possible.</p>

Noise and vibration

The works are located in a semi-rural setting within East Ayrshire, surrounded primarily by areas of agricultural and residential land use.

The [AADE](#) in 2021 for the main A77 carriageway within the scheme extents accounted for 43,399 vehicles (ID: 20756), with an average of 5.7% HGV. Baseline noise conditions at this location are likely influenced primarily by traffic travelling along the A77 and additionally by noise associated with nearby land uses.

There are numerous residential properties (over 100) within 300m of the works location, with the closest properties located on Kennedy Drive approximately 20m west of the A77 carriageway at the southern scheme extent. Assloss farm is also located within 300m of the works, approximately 40m west of the A77 carriageway on Wardlaw Road.

The works do not fall within a [Candidate Noise Management Area](#) (CNMA) as defined by the Transportation Noise Action Plan, Road Maps.

Population and human health

The A77 is a key road in Scotland and links the large town of Kilmarnock with the City of Glasgow.

A number of core paths are present within 300m of the scheme yet do not intersect the A77 carriageway. No [cycleways](#) are present within the scheme extents.

There is no access to any residential property present within the scheme extents.

No community facilities, or accesses to any community facilities are present within the scheme extents.

The off-slip for the Grassyards road junction is within the scheme extent.

Road drainage and the water environment

A desktop study using SEPA's [Water Classification Hub](#) has identified the following watercourses within 300m of the scheme:

- Craufurdland Water (Fenwick Water to Harshawmuir Water) a river (ID: 10400), in the River Irvine catchment of the Scotland river basin district flows under the A77 carriageway within the scheme extents, approximately 600m north of the southern scheme extent. SEPA has classified this waterbody as having an overall status of 'Good.'
- Kingswell Burn/Fenwick Water/Kilmarnock Water a river (ID: 10399), in the River Irvine catchment of the Scotland river basin district also flows beneath the A77 carriageway approximately 300m north of the northern scheme extent.

The drainage for the scheme consists of top entry gullies.

SEPA's [Flood Map](#) has highlighted some small areas at medium risk (0.5% chance) of surface water flooding on the carriageway within the scheme extents and small areas at high risk (10% chance) of river water flooding.

Climate

Carbon Goals

The Climate Change (Scotland) Act sets out the target and vision set by the Scottish Government for tackling and responding to climate change. The Act includes a target of reducing CO₂ emissions by 80% before 2050 (from the baseline year 1990).

The Scottish Government has since published its indicative Nationally Determined Contribution (NDC) to set out how it will instead reach net-zero by 2045, working to reduce emissions of all major greenhouse gases (GHG) by at least 75% by 2030. By 2040, the Scottish Government is committed to reduce emissions by 90%, with the aim of reaching net-zero by 2045 at the latest.

Transport Scotland is committed to reducing carbon across Scotland's transport network, this commitment is being enacted through the [Mission Zero for Transport](#). Transport is the largest contributor to harmful climate emissions in Scotland. In response to the climate emergency, TS are committed to reducing their emissions by 75% by 2030 and to a legally binding target of net-zero by 2045.

Amey's Company Wide Carbon Goal is to achieve Scope 1 and 2 net-zero carbon emissions, with a minimum of 80% absolute reduction on our emissions by 2035. Amey is aiming to be fully net-zero, including Scope 3 emissions, by 2040.

Amey is working towards a contractual commitment to have carbon neutral depots on the SW NMC network by 2028. Amey have set carbon goals for the SW NMC contract as a whole to be net-zero carbon by 2032.

Monitoring, Management and Opportunities

To support our journey towards carbon neutral and zero waste we include potential opportunities for enhancement utilising circular economy principals within assessment of material assets.

Amey (working on behalf of Transport Scotland) undertake carbon monitoring. Emissions from our activities are recorded using Transport Scotland's Carbon Management System.

Further information identifying how Amey will obtain the above Carbon Goals can be viewed within the Carbon Management and Sustainability Plan Roadmap to net-zero: STRNMC – South West.

Description of main environmental impacts and proposed mitigation

Air quality

Impacts

- The use of vehicles, plant and generators will result in emissions which will temporarily impact local air quality.
- On site construction activities carry the potential to produce airborne particulate matter and generate emissions that will have a temporary impact on local air quality.
- TM will likely lead to temporary congestion for road users which may have a temporary impact on local air quality.

Mitigation

- All works will operate in accordance with current best practice as outlined in the [Guidance on the assessment of dust from demolition and construction](#) (2014) published by the IAQM, which includes the following mitigation relevant to this scheme:
 - When not in use, plant and vehicles will be switched off; there will be no idling vehicles.
 - All plant and fuel-requiring equipment utilised during construction will be well maintained in order to minimise emissions, as per manufacturing and legal requirements.
- Green driving techniques will be adopted, and effective route preparation and planning shall be undertaken prior to works.
- Planing operations will be wetted to reduce dust arising.
- Drop heights to haulage vehicles and onto conveyors will be minimised.
- Lorries will be sheeted when carrying dry materials.
- Surfaces will be swept where loose material remains following planing.

Providing all works operate in accordance with current best practice, the residual impact for air quality is considered no change.

It has been determined that the proposed scheme will not have direct or indirect significant effects to local air quality

Biodiversity

- Desk study indicates protected species are active within the local area and may be subject to temporary light/noise disturbance as a result of the works.
- Increase in night-time noise may result in temporary disturbance/nuisance for nocturnal species if active in proximity.
- No carriageway lighting is present throughout the scheme extents. The addition of any temporary lighting for the works may affect the foraging or commuting routes of nocturnal protected species which may be active in the surrounding area.

Mitigation

- Operatives will remain vigilant for the presence of protected species within or near the works. If any protected species are spotted, all works will temporarily halt until the animal has moved on, and any sightings will be reported to the E&S Team.
- Site staff will receive toolbox talk on protected species.
- On site light sources will be kept to a minimum, and only used as required:
 - When in use, any artificial site lighting will be kept directional to the works area as far as reasonably practicable, reducing any light spill into the wider surroundings, and potentially sensitive habitat (e.g. woodland).
 - When not in use or required, light sources shall be switched off to reduce impact on nocturnal species.
- Impacts from noise will be kept to a minimum through the use of appropriate mufflers and silencers fitted to machinery. All exhaust silencers will be checked at regular intervals to ensure efficiency.
- No works will be undertaken on the verges, including no vehicle/materials storage.
- See additional mitigation measures in *Noise and Vibration* and *Road drainage and the water environment*.

On the condition that best practice is adhered to, the residual impact to local biodiversity is considered no change as a result of the works.

It has been determined that the proposed scheme will not have direct or indirect significant effects to biodiversity.

Noise and vibration

Impacts

- TS2010 road surfacing will be utilised, which will reduce mid to high frequencies of traffic noise levels. Nearby receptors may benefit from reduced noise as a result of the scheme.
- Works will be undertaken during night-time programming. As such, residential properties within 300m of the works may experience temporary disturbance due to an increase in noise levels, including potential disruption to sleep.

Mitigation

- East Ayrshire Council's Environmental Health Department has been notified of the works by the E&S Team, due to night-time programming.
- Residential properties within 300m will be notified in advance of the works, providing details of timings, nature, and duration of the works.
- Impacts from noise shall be kept to a minimum through the use of appropriate mufflers and silencers fitted to machinery. All exhaust silencers will be checked at regular intervals to ensure efficiency.
- Plant and machinery will be switched off when not in use to reduce noise disruptions to the surrounding environment.
- Engine exhaust and vent silencers shall be used where possible.
- The noisiest works will be scheduled for before 11:00pm where feasible.
- The delivery of materials to the scheme extents will be made during daytime and early evening hours where reasonably practicable, to reduce noise associated by traffic.
- Operatives will avoid extraneous noise whilst onsite and will be briefed using the Amey Noise and Vibration environmental briefing.

Provided that best practice measures are followed, it is determined that the residual impact from noise will be negligible beneficial, with a temporary minor adverse impact determined during construction.

It has been determined that the proposed scheme will not have direct or indirect significant effects to local noise and vibration.

Population and human health

Impacts

- TM will consist of closures of the SB A77 carriageway (with night-time working) with a suitable diversion route put in place. TM has potential to cause temporary levels of disruption to road users (i.e. increased traffic levels and nuisance to surrounding road networks).
- Core paths will not be impacted by the works due to sufficient distancing from the works and the works being restricted to the A77 carriageway boundary.
- TS2010 road surfacing will be utilised. TS2010 can improve the skid resistance of the road.
- The use of TS2010 is shown to have superior durability to standard road mixes as such this will extend the life span of the carriageway preventing the need for reoccurring routine maintenance and associated levels of disruption.

Mitigation

- Residential properties within 300m of the scheme will be notified prior to commencement of the works. This notification will contain details of expected nature, timings and duration of the works, in addition to any access restrictions.
- Advance traffic signs will be placed prior to works in an effort to minimise disturbance to vehicular travellers, and will inform road users of expected duration, timings, and any temporary traffic management arrangements/restrictions.

Provided that best practice measures are followed, it is determined that residual impact to population and human health will be no change, with a temporary minor adverse impact during construction.

It has been determined that the proposed scheme will not have direct or indirect significant effects to population and human health.

Road drainage and the water environment

Impacts

- Potential for spills, leaks or seepage of fuels and oils associated with plant to escape and reach drainage systems and watercourses if not controlled, which may impact the water environment.
- If not appropriately controlled, debris, sediment and runoff from the works has the potential to enter nearby drains and watercourses and could detrimentally impact water quality.

- In the event of a flooding incident, debris may be mobilised and could enter the road drainage having a detrimental effect on the surrounding local water environment.

Mitigation

- Best practice, as detailed by SEPA Guidance for Pollution Prevention (GPPs), will always be followed onsite. This will ensure that any potential sediments/spills are not allowed to enter road drainage unchecked.
- Appropriate measures will be implemented onsite to prevent any potential pollution to the natural water environment (e.g. debris, dust and hazardous substances). This will include, but will not be limited to, spill kits being present onsite at all times, and the use of funnels and drip trays when transferring fuel, and utilisation of drain covers/shielding boards.
- Any pollution incidences will be reported to the Amey control room.
- Operatives will conduct regular checks of the work site, especially in periods of heavy wind and rainfall.
- All debris which has the potential to be suspended in surface water and wash into the local water environment will be cleaned from the site following the works.
- Weather reports will be monitored prior to and during all construction activities. In the event of adverse weather/flooding events, all activities will temporarily stop, and only reconvene when deemed safe to do so, and when run-off/drainage can be adequately controlled to prevent pollution.

Providing all works operate in accordance with site control measures, the residual impact for road drainage and the water environment is considered no change.

It has been determined that the proposed project will not have direct or indirect significant effects to the water environment.

Climate

Impacts

- GHG emissions will be emitted through the use of machinery, vehicles and materials used (containing recycled and virgin materials) and transporting to and from site.

Mitigation

- Local suppliers will be used as far as reasonably practicable to reduce travel time and GHG emitted as part of the works.
- Vehicles/plant will not be left on when not in use to minimise and prevent unnecessary emissions.

- Further actions and considerations for this scheme are detailed in the above Material assets and waste section.

It has been determined that the proposed scheme will not have direct or indirect significant effects to climate.

Vulnerability of the project to risks

As the works will be limited to the resurfacing of the carriageway, there will be no change in vulnerability of the road to risk, or in severity of major accidents/disasters that would impact on the environment.

It has been determined that the proposed scheme will not alter the vulnerability of the existing trunk road infrastructure to risk of major accidents or disasters.

Assessment cumulative effects

The [Scottish Road Works Commissioner's Interactive Map](#) does not highlight any other works in the area at the time of construction.

[East Ayrshire Council's Planning Portal](#) does not highlight any proposed developments or planning applications on the A77 carriageway within 2km of the scheme.

Amey's current [programme of works](#) has not highlighted any other works in the area at the time of construction.

No other nearby schemes which may result in a combined effect on nearby receptors have been identified.

Any future schemes will be programmed to take into account already programmed works, and as such any effect (such as from TM arrangements and potential construction noise) will be limited.

Assessments of the environmental effects

Following assessment as detailed within this Record of Determination, and provided that mitigation measures are in place and best practice is followed, the residual impact is determined to be no change and there will be no significant effects on the environment.

The following environmental surveys/reviews have been undertaken:

- A design Initial Environmental Review of the scheme, undertaken by the Environment and Sustainability Team at Amey in May 2023.

Statement of case in support of a Determination that a statutory EIA is not required

This is a relevant project in terms of section 55A (16) of the Roads (Scotland) Act 1984 as it is a project for the improvement of a road and the completed works (together with any area occupied by apparatus, equipment, machinery, materials, plant, spoil heaps, or other such facilities or stores required during the period of construction) exceed 1 hectare in area.

The project has been subject to screening using the Annex III criteria to determine whether a formal Environmental Impact Assessment is required under the Roads (Scotland) Act 1984 (as amended by The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017). Screening using Annex III criteria, reference to consultations undertaken and review of available information has not identified the need for a statutory EIA.

The project will not have significant effects on the environment by virtue of factors such as:

Characteristics of the scheme:

- At end of life, components can be recycled, reducing waste to landfill.
- Any uncontaminated road planings will be recycled in accordance with Guidance on the Production for Fully Recovered Asphalt Road Planings.
- Materials will be derived from recycled, secondary or re-used origin as far as practicable within the design specifications.
- The chosen material TS2010 surface course allows a wider array of aggregate sources to be considered when compared to typical SMA.
- The design option conveys sustainability benefits by significantly reducing the quantity of maintenance interventions required at the location.

Location of the scheme:

- The scheme will be confined to the existing carriageway boundary and as a result will not require any land take and will not alter any local land uses.
- The scheme is not situated in whole or in part in a “sensitive area” as listed under regulation 2 (1) of the Environmental Impact Assessment (Scotland) Regulations 1999 (as amended).

Characteristics of potential impacts of the scheme:

- The successful completion of the scheme will afford benefits to road users due to improved condition and ride quality of the carriageway surface.
- The use of TS2010 road surfacing affords the benefits of a reduction in mid to high frequencies of traffic noise. As a result, ambient noise levels will likely decrease post construction.

Annex A

“sensitive area” means any of the following:

- land notified under sections 3(1) or 5(1) (sites of special scientific interest) of the Nature Conservation (Scotland) Act 2004
- land in respect of which an order has been made under section 23 (nature conservation orders) of the Nature Conservation (Scotland) Act 2004
- a European site within the meaning of regulation 10 of the Conservation (Natural Habitats, &c.) Regulations 1994
- a property appearing in the World Heritage List kept under article 11(2) of the 1972 UNESCO Convention for the Protection of the World Cultural and Natural Heritage
- a scheduled monument within the meaning of the Ancient Monuments and Archaeological Areas Act 1979
- a National Scenic Area as designated by a direction made by the Scottish Ministers under section 263A of the Town and Country Planning (Scotland) Act 1997
- an area designated as a National Park by a designation order made by the Scottish Ministers under section 6(1) of the National Parks (Scotland) Act 2000.



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