



**TRANSPORT  
SCOTLAND**  
CÒMHDHAIL ALBA

# **Environmental Impact Assessment Record of Determination**

## **A77 Spittalhill – Bogend SB**

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## Project Details

### Description

Works are required to maintain the safety and integrity of approximately 1896 m of the A77 southbound carriageway southwest of Kilmarnock. Within the scheme extents deterioration has been identified, notably chip loss and crazing, in addition to other defects such as wear and tear of road markings and missing road studs.

Construction work will involve the milling and replacing of the defective surface course over approximately 1896m of the A77 southbound carriageway, including associated disposal of planed material.

Treatment will involve an inlay treatment of TS2010 surface course, with possible deeper treatment in some areas. Road markings will also be reapplied as necessary.

The works will entail the following general construction activities:

- Milling of existing bituminous material by road planer;
- Additional bituminous material removed by jack hammer/excavator, where not accessible by planer;
- Road sweeper to collect any loose material;
- HGV for removal and replacement of material;
- Tack/bond coat applied;
- New bituminous material laid by a paver;
- Material compacted using a heavy roller;
- New road markings/chevrons carried out where needed; and
- Road studs replaced where necessary.

The total works area is approximately 1.3 hectares across the southbound lanes only.

Works are planned for two weekends in September 2022 (9 – 12 September and 30 September to 3 October), including works during night-time hours.

Traffic management details are to be confirmed, however will be either in the form of full weekend closure of the southbound carriageway with appropriate signed diversion routes in operation or a full weekend closure of the southbound carriageway with a contraflow on the northbound carriageway.

### Location

The scheme is located on the A77 south of Kilmarnock, South Ayrshire and has the following National Grid References (NGR):

- Scheme Start: NS 41149 33762

- Scheme End: NS 39791 32490

Figure 1: Scheme Location

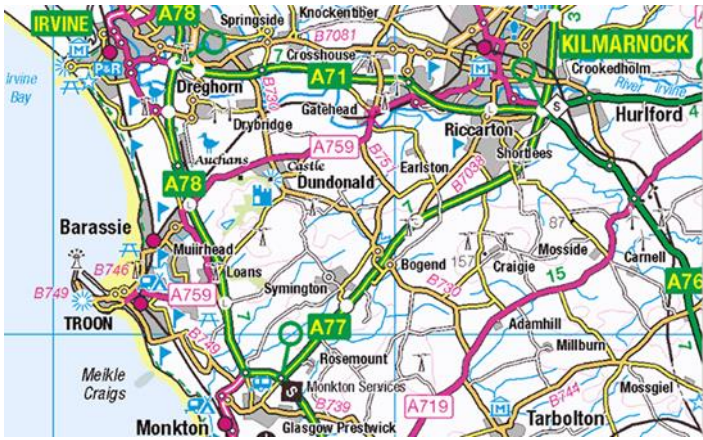
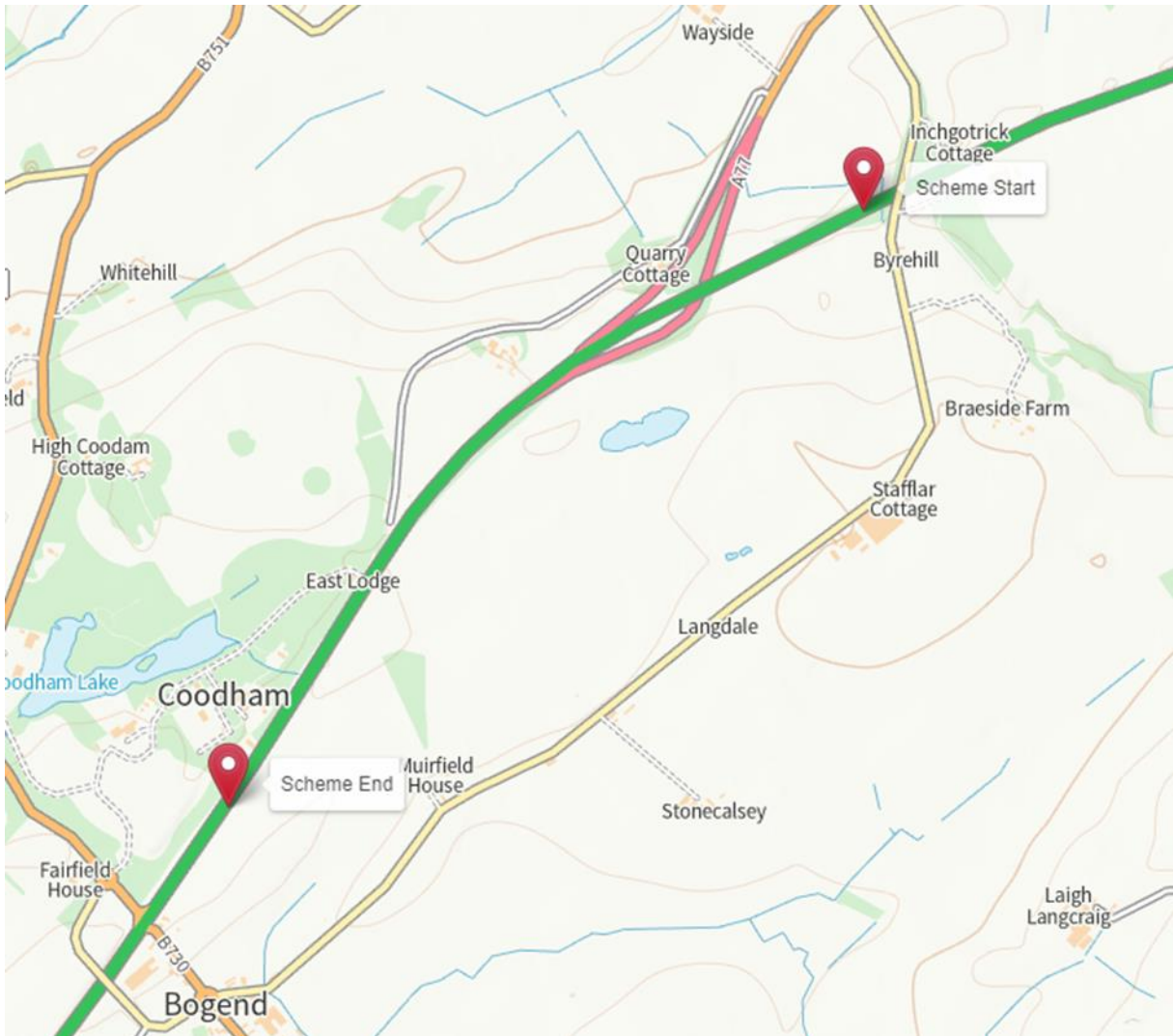


Figure 2 - Scheme Extents



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## Description of local environment

### Air quality

The section of the A77 carriageway falls within a rural setting south of Kilmarnock and is located within South Ayrshire. There are residential properties located within 300m of the proposed works, the closest of which are two properties adjacent to the northbound carriageway, which are both less than 30m from the works area.

The estimated [Annual Average Daily Traffic Flows](#) (AADT) for within the scheme extents in 2020 is 21,929 vehicles per day, with 7.4% heavy goods vehicles (HGVs).

The scheme does not fall into any [Air Quality Management Areas](#) (AQMA) declared by South Ayrshire Council.

### Cultural heritage

A desktop study using [PastMap](#) has identified two listed buildings within proximity of the scheme; Stables, Coodham (approximately 85m from the works) and Coodham, East Lodge with Gatepiers and Gates (approximately 30m from the works)

Works will be sufficiently distanced from these features of cultural heritage and will have no impact. In addition, 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 project 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 has been scoped out of requiring further assessment.

### Landscape and visual effects

A desktop study using [PastMap](#) and [NatureScot Sitelink](#) online interactive map has not highlighted any areas designated for landscape character within, or within proximity to, the works location.

Historic Environment Scotland's [HLAMap](#) has highlighted the surrounding landscape as predominantly rectilinear fields and farms. To the southwest of the scheme lies a designed landscape with formal landscaping creating gardens, parklands and woods around Coodham house.

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 affected during construction due to the presence of works, traffic management and plant. As the works are operating on a like-for-like basis, no permanent changes to landscape features are predicted.

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

## Biodiversity

The scheme is located in a rural area of South Ayrshire. The immediate surrounding habitat is predominantly vegetated strips which flank the southbound carriageway, with some larger areas of woodland. The dominant land use in the wider area is agriculture.

A desktop study using [Nature Scot's Sitelink](#) online interactive map has not highlighted any designated sites within 2km of the works area.

Amey Invasive Non-native Species (INNS) Database has no record of invasive plant species growth within, or within proximity to, the scheme extents.

## Geology and soils

The [National Soil Map of Scotland](#) identifies the local major soil subgroup types as noncalcareous gleys.

The proposed works will be kept to the existing slip road and will have no requirement to access land out with the existing carriageway boundary. As such, it has been assessed that works do not carry the potential to cause any impact on local land, soils or geology.

## Material assets and waste

### Key Materials Required for Activities

The following materials will be required for the works:

- Road surfacing (aggregate and binder)
- Bitumen
- Road paint
- Lubricant

- Vehicle fuel
- Oil

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.

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.

## Key Waste Arising from Activities

Road planings will be produced as waste from the works.

On-site investigations identified possible tar-containing material within 2 of the 20 cores taken from within the scheme extents (Cores 007 and 008), at a minimum depth of 30mm.

Planings at the location of these cores at depths greater than 30mm have potential to contain tar containing material. Any tar-contaminated planings will require removal off site for treatment/disposal at a licenced waste facility.

Any road planings not contaminated with coal tar generated as a result of the works may be recovered in accordance with the criteria stipulated within SEPA document 'Guidance on the Production of Fully Recoverable Asphalt Road Planings'.

## Noise and vibration

The section of the A77 carriageway falls within a rural setting south of Kilmarnock and is located within South Ayrshire Council. Ambient noise levels at this location are likely to be influenced by traffic travelling along the A77.

There are residential properties located within 300m of the proposed works, the closest of which are two properties adjacent to the northbound carriageway, which are both less than 30m from the works area.

The scheme does not fall within any [Candidate Noise Management Areas \(CNMAs\)](#).

The estimated [Annual Average Daily Traffic Flows](#) (AADT) for within the scheme extents in 2020 is 21,929 vehicles per day, with 7.4% heavy goods vehicles (HGVs).



## Population and human health

The A77 is the main connecting route between Kilmarnock and Ayr. An on-slip from the B7038 exists within the scheme extents.

There are no [Core paths](#) located within or within proximity to scheme extents.

There is a bus stop, served by Stagecoach buses, within the scheme extents. A vehicle layby is also located within the scheme extents near start of the scheme.

There are residential properties located within 300m of the proposed works, the closest of which are two properties adjacent to the northbound carriageway, which are both less than 30m from the works area. No properties are directly accessed from within the work extents.

## Road drainage and the water environment

Scottish Environment Protection Agency (SEPA) [Water Classification Hub](#) has highlighted that the scheme is underlain by the Ayr groundwater body (SEPA ID: 150669), which has an overall status of 'Poor'.

There are no surface watercourses recognised by SEPA in close proximity to the scheme. However, Coodham Lake, a body of water within the grounds of Coodham House, lies within 200m to the west of the A77.

The [SEPA Flood Map](#) identifies some small areas that are at medium and high risk of surface water flooding within in the extents and immediate areas surrounding the scheme.

## 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 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 are 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

- On site construction activities carry a potential to produce airborne particulate matter and generate emissions that may have a temporary impact on local air quality levels.
- Traffic management may temporarily increase congestion and result in a slight increase in associated vehicle emissions in local environments.
- The impacts identified will be a temporary for the duration of the works only and therefore no change is predicted on air quality.

#### Mitigation

- The following 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 should be followed:
  - Ensure all vehicles switch off engines when stationary; there should be no idling vehicles.
  - Dampening any dust generating activities.
  - All plant and fuel-requiring equipment utilised during construction should be well maintained in order to minimise emissions.

Providing all works operate in accordance with current best practice, the residual impact for air is considered neutral; it has been determined that the proposed project will not have direct or indirect significant effects to local air quality.

### Biodiversity

#### Impacts

- There is potential for temporary disturbance to protected species which may be active in proximity to the works location.
- There is potential for slight increases in noise, including night-time noise, due the presence of plant and machinery, however this is likely to be minimal and will be temporary.
- There is potential for temporary light disturbance to nocturnal protected species.

## Mitigation

- Operatives must be vigilant for potential presence of protected species. If a protected species is sighted within or in close proximity to the works location work should be temporarily suspended until it has moved on. Any sightings will be reported to the Amey E&S Team.
- Oil, fuels and other potential pollutants or poisonous materials should be stored safely on site.
- On site light sources should be kept to a minimum, and only used as required:
  - When in use, any artificial light should be pointed and directed at the area of works as far as reasonably practicable, reducing any light spill into the wider surroundings, and potentially sensitive habitat (e.g. woodland).
  - When not in use, light sources should be switched off to reduce impact on nocturnal species.

On the condition that the above best practice is adhered to, the residual effects have been assessed as neutral.

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

## Material assets and waste

### Impacts

- The design life for the TS2010 surfacing proposed is estimated to be 20 years. This will reduce the requirement for maintenance to this section of road over the period.
- The works will result in contribution to resource depletion through use of virgin materials.
- Greenhouse gas (GHG) emissions will be generated by material production and transporting to and from site.
- Transportation and recovery of materials/waste will require energy deriving from fossil fuel, a non-renewable source.
- Road planings contaminated with coal tar will require removal and disposal/treatment as special waste.

## Mitigation

- Materials will be derived from recycled, secondary or re-used origin as far as practicable within the design specifications to reduce natural resource depletion and associated emissions.
- Planings contaminated with coal tar will be removed from site for processing/disposal at a licensed waste facility.
  - A SEPA consignment note will be obtained before removal and transportation of special waste.
  - SEPA will be informed at least three days prior to the movement of special waste.

Temporary impact during construction is considered negligible adverse, with residual impact considered negligible beneficial.

It has been determined that the proposed project will not have direct or indirect significant effects to the consumption of material assets or creation of waste.

## Noise and vibration

### Impacts

- Works may result in increased noise compared to baseline levels during construction works. There is potential for residential properties in proximity to experience a level of disturbance (including sleep disturbance) due to increased noise if works require night-time works.
- The works will involve the use of TS2010 road surfacing which is shown to have superior durability and noise reducing features compared to standard road surfacing mixes. Vehicle travellers and nearby residential properties will benefit from improved road surfacing as a result of the scheme.

### Mitigation

- The noisiest works should be completed before 23:00 where feasible.
- Best practicable means of noise control, as described within BS 5228-1 and -2:2009+A1:2014 'Code of Practice for Noise and Vibration Control on Construction and Open Site', should be implemented in order to minimise the risk of disturbance. The following measures are relevant to the scheme:
  - Avoid unnecessary revving of engines and switch off equipment when not in use;
  - Use rubber linings in, for example, chutes and dumpers to reduce impact noise;

- Minimise drop height of materials;
- Start-up plant and vehicles sequentially rather than all together
- Percussive operations must be avoided, except where there is an overriding justification.
- Appropriate mufflers and silencers should be fitted to machinery. All exhaust silencers should be checked at regular intervals to ensure efficiency.
- Operatives will avoid extraneous noise on site (i.e. shouting, music, slamming of doors etc.)
- The Amey Noise & Vibration briefing should be delivered to all site operatives before works start.

Provided that mitigation measures and best practice is followed, the residual impact deemed neutral.

## **Population and human health**

### **Impacts**

- Traffic Management will involve a full closure of the southbound carriageway. This has the potential to increase road users travel time, which may lead to driver frustration. Traffic Management may also result in increased traffic levels in the surrounding road network.
- Due to Traffic Management, the southbound layby will be temporarily blocked.
- The southbound bus stop will be inaccessible during the works.
- 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**

- 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.
- Layby closures, if required, should be advertised on approach.
- Where bus stops are likely to be obstructed by the works, temporary bus stops should be placed out with the area of works, which should be clearly signed and fully accessible.

Provided that mitigation measures and best practice is followed, the residual impact deemed neutral.

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

## Road drainage and the water environment

### Impacts

- Potential for fuel/chemical spillages to enter the drainage system or local water environment.
- If not appropriately controlled, debris and run off from the works have the potential to enter local waterbodies and detrimentally impact their 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.
- Should flooding occur, this may delay the scheduled works.

### Mitigation

- Appropriate measures should be implemented onsite to prevent any potential pollution to the natural water environment (e.g. debris, dust and hazardous substances). This should include spill kits being present onsite at all times, the use of funnels and drip trays when transferring fuel etc.
- The Amey control room must be contacted if any pollution incidences occur on 0800 042 0188 (24 hours, 7 days a week).
- Visual pollution inspections of the working area must be conducted in frequency, especially during heavy rainfall and wind.
- Debris and dust generated as a result of the works must be prevented from entering nearby watercourses and the road drainage system. This can be via the use of drain covers, containment boards, or similar.
- All debris which has the potential to be suspended in surface water and wash into the local water environment should be cleaned from the site following the works.
- Fully stocked spill kits should be available on site.

Providing all works operate in accordance with current best practice and SEPA Guidance for Pollution Prevention (GPPs) the residual impact for water is considered to be neutral.

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 greenhouse gas emitted as part of the works.
- Vehicles/plant shall not be left on when not in use to minimise and prevent unnecessary emissions being emitted.
- Further actions and considerations for this scheme are detailed in the above Material assets and waste section.

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

### Vulnerability of the project to risks

As the works will be limited to the like-for-like replacement of the carriageway structure, 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 project is not expected to alter the vulnerability of the existing trunk road infrastructure to risk of major accidents or disasters.

### Assessment cumulative effects

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

[South Ayrshire Council's Planning Portal](#) does not highlight any proposed developments or planning applications on the A77 carriageway within proximity to the scheme.

Amey's current [programme of works](#) does not feature any nearby schemes which may result in a combined effect on nearby receptors, such as vehicular travellers and residential/sensitive properties.



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 deemed neutral 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 August 2022.

## 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:

- Construction activities are restricted to the approximate 1.3 ha area of existing carriageway.
- At end of life, some components can be recycled, reducing waste to landfill.
- 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.

- Road planings not containing tar-bound material will be recycled in accordance with Guidance on the Production for Fully Recovered Asphalt Road Planings.
- 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 within the existing carriageway boundaries 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:**

- As the works will be limited to the like-for-like replacement of the structural components, there is no change to the vulnerability of the road to the risk or severity of major accidents/disasters that would impact on the environment.
- No significant residual impacts are predicted. Disruption due to construction activities are not expected to be significant and will be mitigated as far as is reasonably practicable.
- The successful completion of the scheme will afford benefits to residential properties in proximity, due to improved condition and ride quality of the carriageway surface, and improved carriageway drainage.
- The use of TS2010 road surfacing affords the benefits of a reduction in mid to high frequencies of traffic noise and a reduction in ground vibrations. As a result, ambient noise levels should 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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