

EC DIRECTIVE 2011/92/EU (as amended)

ROADS (SCOTLAND) ACT 1984 (Environmental Impact Assessment)  
Regulations 2017 (as amended)

## RECORD OF DETERMINATION

**Name of Project**

A77 Mainholm Road

**Location:**

The scheme is located to the east of Ayr, flanked by a golf course to the west and farmland to the east. The Scheme has the following National Grid References:

Scheme Start: NS 36261 21633

Scheme End: NS 36753 22701

The scheme is of approx. 1.1km, with a total works area of approx. 12,720m<sup>2</sup>

**Description of Project:**

Resurfacing works are required on a section of the A77 carriageway to maintain and rectify areas of damage. The A77 carriageway at this location is showing signs of transverse cracking, crazing, chip loss and fretting of the existing Hot Rolled Asphalt (HRA) surfacing. The widespread crazing in the HRA surfacing is indicative that it has reached the end of its useful life due to age hardening of the bituminous binder.

The works will involve an inlay treatment of TS2010 to a depth of 180mm throughout the length of the scheme to repair the defective road surface. AC32 binder/base will be utilised for areas of deeper treatment.

Resurfacing works will improve ride quality by removing existing defects whilst the deeper treatment proposed will prevent future cracking which is propagated from base layers of the road.

Environmental Health have been informed of night working. No comments or mitigation were given.

Please see Appendix 1 for a Location Plan and Scheme Extents drawing.

**Description of Local Environment:**

The following baseline descriptions have been numbered to follow the appropriate DMRB chapters for environmental assessment and do not reflect a ranking of sensitivity.

**1. Population and Human Health**

The scheme is located to the east of Ayr, flanked by a golf course to the west and farmland to the east. There are a number of residential properties to the north/west of the scheme, the closest being approx. 20m away.

In 2018, the vehicle count per day was 15,925, with 7.72% Heavy Goods Vehicles (HGVs). Baseline noise conditions at this location are expected to be moderate due to the volume of traffic travelling along the A77.

A footpath is present along the northbound carriageway. This is not a recognised core path<sup>1</sup>, bridleways or cycleways<sup>2</sup> within the scheme extent, however does provide local connectivity.

There are a number of accesses throughout the scheme extent leading to the local road network and a layby situated on either carriageway within the scheme extent.

The scheme is not located within close proximity to any Candidate Noise Management Areas.

**2. Biodiversity**

The scheme is located in a semi-urban setting to the east of Ayr, with a golf course to the west and farmland to the east. An unclassified waterway flows alongside and beneath the carriageway. A thin wooded strip borders the carriageway within the scheme extent.

A desktop study using SNH Sitelink<sup>3</sup> has not identified any designated areas within the study area.

Scotland TransServ's Invasive Non-native Species (INNS) Database has highlighted a growth of Japanese Knotweed on the Northbound carriageway verge, National Grid Reference: NS 36383 21867.

Scotland TransServ's Animal Road Kill Database (2000-2019) has not identified any records of protected species roadkill within the study area.

The desktop study has determined that the study area is unlikely to harbour protected species shelters (e.g. badger, otter). A recent ecological survey undertaken by Scotland Transserv (January 2020) in the local area found no evidence of protected species activity or shelter.

**3. Land**

The works will be kept to the existing carriageway and will not require any access to private land out with the existing trunk road boundary. This factor has been scoped out of the assessment.

<sup>1</sup> <https://www.south-ayrshire.gov.uk/outdooraccess/corepaths.aspx> (Accessed 25/03/2020)

<sup>2</sup> <https://osmaps.ordnancesurvey.co.uk/55.47280,-4.58548,16> (Accessed 25/03/2020)

<sup>3</sup> <https://gateway.snh.gov.uk/sitelink/searchmap.jsp> (Accessed 25/03/2020)

Description of Local Environment:
<p>4. Soil</p> <p>Scotland's soil map identifies noncalcareous gleys and brown earth soils within the scheme extent.<sup>4</sup></p> <p>The works will be kept to the existing carriageway and will have no impact on local land or soils.</p> <p>This factor has been scoped out of the assessment.</p>
<p>5. Water</p> <p>A desktop study using SEPA's Water Environment Hub<sup>5</sup> has identified the following water bodies:</p> <ul style="list-style-type: none"> <li>• An issues (unclassified by SEPA) flows adjacent to and beneath the carriageway within the scheme extent</li> <li>• River Ayr located approximately 30m south of the works at its closest point <ul style="list-style-type: none"> <li>■ Overall status (indication of the level of modification of the watercourse, how much the condition of the watercourse differs from near natural conditions): Good <ul style="list-style-type: none"> <li>– Ecological Status (composition and abundance of aquatic flora and fauna): Good</li> <li>– Chemical Status (classification based on biological and chemical key indicators of pollution): Pass<sup>6</sup></li> </ul> </li> </ul> </li> </ul> <p>The Indicative River &amp; Coastal Flood Map<sup>7</sup> by SEPA has identified<sup>8</sup> areas at risk of surface water flooding on the carriageway within the scheme extents as well as well as a high risk of the River Ayr flooding.</p> <p>Drainage gullies are present intermittently along the side of the carriageway at the location of the works.</p>
<p>6. Air</p> <p>The A77 is a strategic route connecting towns in Ayrshire from Kilmarnock to Stranraer. As such, local air quality is affected by the daily use of the carriageway by road vehicle users.</p> <p>South Ayrshire Council has not declared any Air Quality Management Areas (AQMAs).</p>
<p>7. Climate</p> <p>Scotland TranServ, working on behalf of Transport Scotland, undertake carbon monitoring. Emissions from our activities are recorded using Transport Scotland's Carbon Management System.</p> <p>In addition, Scotland TranServ undertakes resource efficiency activities to manage and reduce emissions contributing to climate change. Actions and considerations for this scheme are detailed in 8 Material Assets below.</p>

<sup>4</sup> [http://map.environment.gov.scot/Soil\\_maps/?layer=1](http://map.environment.gov.scot/Soil_maps/?layer=1) (Accessed 25/03/2020)

<sup>5</sup> <https://www.sepa.org.uk/data-visualisation/water-environment-hub/> (Accessed on 14/06/2019)

<sup>6</sup> <https://www2.sepa.org.uk/waterbodydatasheets/> (Accessed 26/03/2020)

<sup>7</sup> <http://map.sepa.org.uk/floodmap/map.htm> (Accessed on 14/06/2019)

<sup>8</sup> [http://www.sepa.org.uk/flooding/flood\\_maps.aspx](http://www.sepa.org.uk/flooding/flood_maps.aspx) (Accessed 25/03/2020)

**Description of Local Environment:**

8. Material Assets

Activity	Material Required	Origin/ Content
Site construction	TS2010 Surface AC32 base/binder Bitumen Road Paint / studs	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 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 <sup>9</sup> .

Note: All materials will be procured in accordance with Balfour Beatty Sustainable Procurement Policy.

*Key Waste Arising from Activities*

Activity	Waste Arising	Disposal/ Regulation
Site construction	Road planings Road studs Broken kerbs Broken ironwork	Road planings generated as a result of the required works will be fully recycled in accordance with the criteria stipulated within SEPA document 'Guidance on the Production of Fully Recoverable Asphalt Road Planings.' <sup>10</sup>  All further wastes will be recovered as far as practicable at appropriately licenced waste management facilities.

9. Cultural Heritage

PastMap has not highlighted any features of cultural heritage within the study area. The works will be kept to the existing carriageway and are therefore unlikely to impact any features of undiscovered cultural heritage.<sup>11</sup>

10. Landscape

The A77 within the scheme extents does not fall within any designation for landscape quality or character. A golf course is situated to the west of the scheme and farmland to the east.<sup>1213</sup>

<sup>9</sup> Transport Scotland TS2010 Surface Course Specification and Guidance Issue 04, 2018 (as amended)

<sup>10</sup> SEPA Guidance on the Production of Fully Recovered Asphalt Road Planings (Accessed 25/03/2020)

<sup>11</sup> <https://sitelink.nature.scot/map> (Accessed 25/03/2020)

<sup>12</sup> <http://portal.historicenvironment.scot/designation/GDL00149> (Accessed 25/03/2020)

<sup>13</sup> <http://gateway.snh.gov.uk/sitelink/searchmap.jsp> (Accessed 25/03/2020)

**Description of the main environmental impacts of the project and proposed mitigation:**

The following environmental impacts have been numbered to follow the appropriate DMRB chapters for environmental assessment and do not reflect a ranking of impact severity. Construction and operational impacts, including impact on Policies and Plans, are covered within each environmental topic heading where applicable.

1. Population and Human Health

1.1 Impacts

- Traffic management arrangements will cause slight levels of disruption to road users (i.e. increased traffic levels and nuisance to surrounding road networks);
- Residential properties may experience disturbance due to night time works;
- Access to layby and local road networks within the scheme extent will be prevented during working hours;
- TS2010 will afford benefits of a reduction in mid to high frequencies of traffic noise and a reduction in ground vibrations. As a result ambient noise levels may decrease post construction<sup>14</sup>;
- TS2010 road surfacing will be utilised, which should improve the skid resistance and reduce mid to high frequencies of traffic levels;
- Routine maintenance works and associated levels of disruptions, are expected to reduce, due to the durability characteristics of TS2010.

1.2 Mitigation

- South Ayrshire Council's Environmental Health Department have been notified in advance of the night time working (undertaken by Scotland TranServ's Environmental and Sustainability Team);
- Residential properties within proximity to the scheme will be pre notified of the works occurring;
- Access will be given to local traffic if access is temporarily restricted during the works;
- The road closures/restrictions will be widely publicised within the local and wider area, in an effort to minimise disturbance to vehicular travellers.
- Given the duration and combined daytime and overnight timing of the required road closures, disturbance is anticipated to be slight.

Works and associated traffic management will operate in accordance with relevant good practice. Given the duration and timing of the required road closures, disturbance is anticipated to be slight during construction. No residual impact to population and human health is anticipated as a result of the works.

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

<sup>14</sup> Transport Scotland TS2010 Specification and Guidance Issue 03, October 2015 (as amended)

Description of the main environmental impacts of the project and proposed mitigation:	
2.	Biodiversity
2.1	Impacts
	<ul style="list-style-type: none"> <li>• INNS growths will not be disturbed due to position on opposite carriageway verge;</li> <li>• Lighting and extra noise from night works may cause disruption to the feeding and movement patterns of nocturnal species.</li> </ul>
2.2	Mitigation
	<ul style="list-style-type: none"> <li>• Although unlikely to be disturbed by the works, INNS may be present. Operatives will be made aware of INNS and location of known growth as part of spread prevention briefing.</li> <li>• Lighting brought to site will be managed to prevent unnecessary spread to local vegetation, reducing impact to local wildlife as far as practicable.</li> <li>• Any plant onsite must be turned off when not in use to ensure that noise on site is kept to a minimum.</li> <li>• Operatives will be briefed on protected species present in the wider area and stop works immediately if species are observed until the animal moves on.</li> </ul> <p>Works will be undertaken in accordance with current good practice, including guidance set out by Nature.Scot and SEPA's GPPs. The residual impact for biodiversity is considered neutral.</p> <p>It has been determined that the proposed project will not have direct or indirect significant effects to biodiversity.</p>
3.	Land
	<p>On site work activities will be confined within the existing A77 carriageway boundary, and will not require any access over private or community land.</p> <p>It has been determined that the proposed project will not have direct or indirect significant effects to land or land use.</p>
4.	Soil
	<p>The works are confined to the carriageway, and no areas of soil will be disturbed. As such, no impact to soils is predicted.</p> <p>It has been determined that the proposed project will not have direct or indirect significant effects to local soils.</p>
5.	Water
5.1	Impacts
	<ul style="list-style-type: none"> <li>• Given the works are restricted to the elevated carriageway surface, river flooding is unlikely to impact the works</li> <li>• There is potential for fuel/chemical spillages through the operation of resurfacing and use of various machinery and vehicles, which may affect the water environment if not effectively controlled. Spillages, leaks or seepages of fuel or oils from plant can be hazardous to the waterbodies in proximity to the scheme;</li> <li>• Construction works could give rise to fine sediments which may enter nearby drainage which, if allowed to enter into the watercourse unchecked, could cause pollution.</li> </ul>

**Description of the main environmental impacts of the project and proposed mitigation:**

5.2 Mitigation

- Spill kits will be replenished and readily available at all times during the construction activities, all site operatives are appropriately trained in the use of spill kits;
- Debris and dust generated through the works will be prevented from entering top entry gullies;
- Visual pollution inspections of the working site (particularly areas near drainage) will be conducted in frequency, especially during periods of heavy rain and/or wind;
- Weather reports will be monitored prior to and during the works with all activities temporarily halting in the event of adverse weather/flooding event. The works will only continue when it is deemed safe to do so and run-off/drainage can be adequately controlled to prevent pollution.

Control measures in accordance with good practice including SEPA's GPPs will be in place throughout works. The residual impact for water is considered neutral.

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

6. Air

6.1 Impacts

- The use of vehicles, plant and generators emitting carbon emissions may temporarily affect local air quality;
- On site construction activities carry a potential to produce airborne particulate matter that may have a slight impact on local air quality levels;
- Traffic management may increase congestion and night time noise to local environments.

6.2 Mitigation

Air pollution control measures in accordance with good practice including SEPA's GPPs will be in place throughout works. This will include and not be limited to ensuring plant and vehicle engines are not left idling and all fuel operated equipment is regularly serviced and is not generating excessive fumes.

The works are predicted to have no additional impact to local air quality during construction when compared with average daily vehicle use, with no permanent change predicted.

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

7. Climate

7.1 Impacts

- Greenhouse gas emissions will be emitted through the use of machinery, vehicles, transport and manufacture of materials used.

7.2 Mitigation

- Where possible, local suppliers will be used as far as reasonably practicable to reduce travel time and greenhouse gas emitted as part of the works;
- Materials containing recycled and virgin materials will be utilised as far as practicable to reduce the impacts associated with exploration and production from virgin resources.

Description of the main environmental impacts of the project and proposed mitigation:
It has been determined that the proposed project will not have direct or indirect significant effects to climate.
<p>8. Material Assets</p> <p>8.1 Impacts</p> <ul style="list-style-type: none"> <li>Greenhouse gas emissions generated by material production and transporting to and from site;</li> </ul> <p>8.2 Mitigation</p> <ul style="list-style-type: none"> <li>Materials will be locally sourced and derived from recycled, secondary or re-used origin as far as practicable within the design specifications to reduce natural resource depletion.</li> <li>TS2010 SMA allows a wider array of aggregate sources to be considered when compared to typical SMA, resulting in reduced use of imported aggregates, and an increased use of a wider range of sustainable aggregate sources<sup>15</sup>.</li> <li>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.</li> <li>Waste will follow the hierarchy and be reduced, reused and recycled where possible.</li> <li>Road planings generated will be recovered by a licenced contractor for reuse and / or recycled in accordance with the criteria stipulated within SEPA document 'Guidance on the Production of Fully Recoverable Asphalt Road Planings'.</li> </ul> <p>The design life for the TS2010 SMA surfacing is considered to be around 20 years. This will reduce the requirements of maintenance to this section of road in future.</p> <p>It has been determined that the proposed project will not have direct or indirect significant effects to material asset sources.</p>
<p>9. Cultural Heritage</p> <p>PastMap has not highlighted any features of cultural heritage within proximity of the works. The works will be kept to the existing carriageway and will have no impact on any features of undiscovered cultural heritage.</p> <p>It has been determined that the proposed project will not have direct or indirect significant effects to features of cultural heritage.</p>
<p>10. Landscape</p> <p>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.</p> <p>It has been determined that the proposed project will not have direct or indirect significant effects to landscape.</p>

<sup>15</sup>[http://www.transport.gov.scot/system/files/uploaded\\_content/documents/tsc\\_basic\\_pages/Transport/TSIA%2035-15%20%2B%20TS2010%20Ver03%20%28Oct%202015%29.pdf](http://www.transport.gov.scot/system/files/uploaded_content/documents/tsc_basic_pages/Transport/TSIA%2035-15%20%2B%20TS2010%20Ver03%20%28Oct%202015%29.pdf) (Accessed 18/03/2020)



**Description of the main environmental impacts of the project and proposed mitigation:**

11. Vulnerability of the Project to Risks

As the works will be limited to the like-for-like replacement of the carriageway pavement, there is no change to the vulnerability of the road to the risk or severity of major accidents / disasters.

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.

**Extent of EIA work undertaken and details of consultation:**

The following environmental parameters have been considered within this Record of Determination:

- Population and Human Health
- Biodiversity
- Land
- Soil
- Water
- Air
- Climate
- Material Assets
- Cultural Heritage
- Landscape

The following statutory organisations have been consulted:

- South Ayrshire Council have been notified.

**Statement of case in support of a Determination that a formal EIA and Environmental Impact Assessment Report is not required:**

This is a relevant project falling within Annex II that:

The project covers an area of over 1 hectare.

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). Screening using Annex III criteria, reference to consultations undertaken and review of available information has identified there is no need for a full EIA.

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

*Characteristics of the scheme:*

- Scheme distance is approx. 1.1km, with a total works area of approx. 12,720m<sup>2</sup>.
- Construction activities will involve the milling and replacement of existing defective carriageway surface via an inlay to a depth of 185mm.
- Virgin materials will be required for the scheme construction, however the design chosen will minimise materials required and the levels of wastes generated. The use of TS2010

will reduce the use of imported aggregates and increase the use of a wider range of sustainable aggregate sources, as resurfacing material will contain a percentage of recycled material content where practicable.

- A proportion of reclaimed asphalt pavement (RAP) is used in asphalt production. Typical RAP values for base and binder are up to 10% in surface course.
- Road planings arising from the scheme will be recycled and reused as a material as far as practicable, reducing waste generated from construction works requiring landfill. The use of TS2010 will reduce the use of imported aggregates and increase the use of a wider range of sustainable aggregate sources.
- Contaminated planings will be disposed to an appropriately licenced facility.
- The design option (replacing the defective surfacing) conveys sustainability benefits by significantly reducing the quantity of maintenance interventions required at the location over approximately 20 years.

*Location of the scheme:*

- The scheme is located in a semi-urban environment, near to the town of Ayr in Ayrshire, south Scotland.
- There are no designated or legally protected features within the study area.

*Characteristics of potential impacts of the scheme:*

- As the works will be limited to the like-for-like replacement of the carriageway surface, there is no change to the vulnerability of the road to the risk or severity of major accidents or disasters that would impact on the environment.
- No significant residual impacts are predicted. Disruption due to construction activities is 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 road users.
- The use of TS2010 road surfacing will afford 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 may decrease post construction.

## APPENDIX 1 : SCHEME LOCATION AND EXTENTS

