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# **Environmental Impact Assessment Record of Determination**

## **A78 Manson Road to Warrix Southbound**

## Contents

<b>Project Details .....</b>	<b>4</b>
Description.....	4
Location .....	4
<b>Description of local environment.....</b>	<b>6</b>
Air quality .....	6
Cultural heritage .....	6
Landscape and visual effects .....	6
Biodiversity .....	7
Geology and soils .....	7
Material assets and waste .....	8
Key materials required for activities .....	8
Waste arising from activities.....	9
Noise and vibration .....	9
Population and human health .....	9
Road drainage and the water environment.....	10
Climate .....	10
<b>Description of main environmental impacts and proposed mitigation .....</b>	<b>11</b>
Air quality .....	11
Impacts.....	11
Mitigation.....	11
Biodiversity .....	12
Impacts.....	12
Mitigation.....	12
Material assets and waste .....	12
Impacts.....	12
Mitigation.....	12
Noise and vibration .....	13
Impacts.....	13
Mitigation.....	13
Road drainage and the water environment.....	14
Impacts.....	14
Mitigation.....	14
Climate .....	14

Impacts.....	14
Mitigation.....	14
Vulnerability of the project to risks .....	15
Assessment cumulative effects.....	15
<b>Assessments of the environmental effects .....</b>	<b>15</b>
<b>Statement of case in support of a Determination that a statutory EIA is not required.....</b>	<b>16</b>
<b>Annex A.....</b>	<b>18</b>

## Project Details

### Description

The works are required to maintain the safety and integrity of the A78 carriageway within the scheme extents. The main driver for this scheme comes from the multiple cracks, both longitudinal and transverse, extensive fretting, crazing and several potholes.

Works will involve carriageway surface reconstruction utilising TS2010 treatment with exact depths yet to be fully determined. The total area of the works is approximately 20,000m<sup>2</sup>.

Construction activities will likely include:

- 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;
- HGV for removal and replacement of material; and,
- Road markings replaced.

Works have been programmed for June 2022 and will likely take place over 24 hour work shifts for one week.

Traffic management has yet to be fully determined, however road closures are anticipated.

North Ayrshire Council (NAC) has been consulted on the 1<sup>st</sup> February 2022.

### Location

The works are located on the A78 carriageway within Irvine, North Ayrshire. The works have the following National Grid References:

- Scheme Start: NS 32948 40337

- Scheme End: NS 33256 37858

Figure 1-Scheme Location

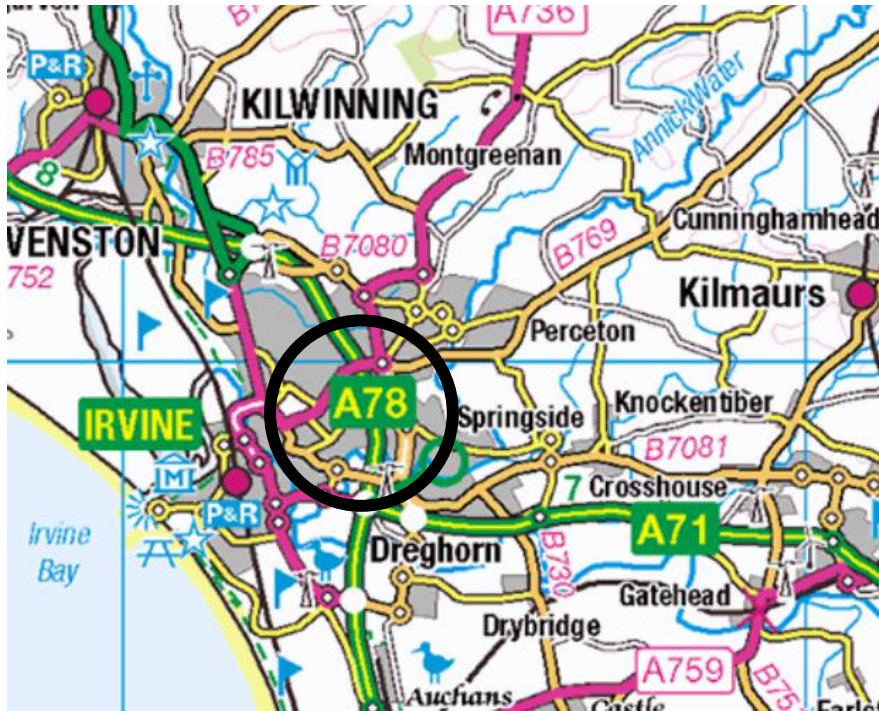
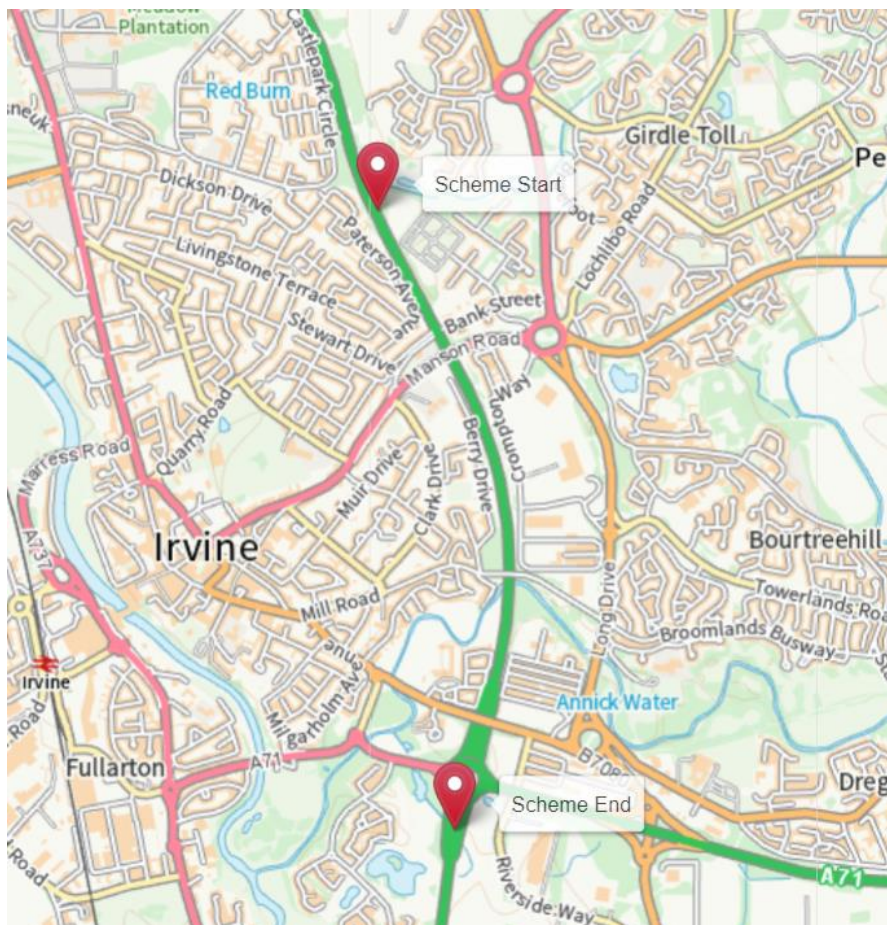


Figure 2-Scheme Extents



## Description of local environment

### Air quality

The works are located on an urbanised stretch of the A78 carriageway that passes through the town of Irvine. Large areas of residential properties are located within proximity in the local area.

The Annual Average Daily Traffic Flows (AADT, 2020) at this location is 12,040 approximately 5.8% of which consists of Heavy Goods Vehicles (HGVs).

No [Air Quality Management Areas](#) (AQMA) have been declared by East Ayrshire Council.

The works are of a temporary nature and will not result in any permanent local changes to air quality levels.

### Cultural heritage

[PastMap](#) has not identified any designated features of cultural heritage within 100m of the works.

The works will be limited to the existing man-made carriageway structure.

It has been determined that the proposed project will not have direct or indirect significant effects to cultural heritage and has been scoped out of further assessment.

### Landscape and visual effects

[NatureScot Sitelink](#) and [PastMap](#) have not identified any designated landscape features within proximity to the works.

Works will be like for like in nature and will not have any lasting visual change. Views of and from the road will be impacted by the presence of traffic management, plant and vehicles during construction. This is predicted to be a slight temporary impact locally, with no permanent change to views following the completion of works.

It has been determined that the proposed project will not have direct or indirect significant effects to landscape or visual effects and has been scoped out of further assessment.

## Biodiversity

The works are located on an urbanised stretch of the A78 carriageway, primarily surrounded by residential, commercial and industrial areas. Minor areas and strips of woodland can be found directly adjacent to the carriageway and the slip roads of Warrix. Annick Water is channelled directly under the carriageway.

[NatureScot Sitelink](#) has not identified any European designated sites within 2km of the works. No locally designated sites are within 300m of the works.

Amey's Animal Roadkill Database (2000 – 2021) has not highlighted any protected species roadkill within the scheme extent

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

Previous surveys carried out by Amey in November 2021 have been carried out in the woodland, grassland and Annick Water. It has been noted that the wood and grassland areas are predominately flat, with wet ground, making burrowing conditions unfavourable for badger. No field signs of badger were identified on these past surveys.

Annick Water has also been surveyed for the presence of otter in July 2021. Whilst vegetation is present near the banks, the river at this location is deep, and thus there is a lack of area of root overhang or rocky banks suitable for holts and resting places. The pedestrian footpath is also regularly used by pedestrians and dog walkers, and thus will likely act as a deterrent.

Given these previous surveys, coupled with the lack of any recent protected species roadkill. Further surveys were deemed unnecessary for the works.

## Geology and soils

The [National Soil Map of Scotland](#) has identified the surrounding local soils to consist of brown earths.

A desktop study using the [British Geological Survey Map](#) has identified major local geology type as the following:

### Bedrock

Scottish Coal Measures Group - Mudstone, siltstone, sandstone, coal, ironstone and ferricrete. Sedimentary bedrock formed approximately 309 to 313 million years ago

in the Carboniferous Period. Local environment previously dominated by swamps, estuaries and deltas.

### Superficial

Raised Marine Deposits - Sand and gravel. Superficial deposits formed up to 3 million years ago in the Quaternary Period. Local environment previously dominated by shorelines.

The works will be limited to the existing man-made carriageway structure, and thus will not impact on surrounding local soils.

## **Material assets and waste**

### **Key materials required for activities**

#### **Materials**

The following materials will be required for the works:

- TS2010 surface course
- AC32 base
- AC20 binder
- Bitumen
- Road paint
- Road studs

#### **Origin / Content**

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.



## Waste arising from activities

### Waste arising

Waste road planings and road studs will be produced as a result of the works.

### Disposal / Regulation

Further on-site investigations are required to determine the presence of tar with the carriageway. If tar is found, and will be disturbed by the works, the waste will be disposed of as special waste to an appropriately licenced facility.

Uncontaminated 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'.

## Noise and vibration

The works are located on an urbanised stretch of the A78 carriageway that passes through the town of Irvine. Large areas of residential properties are located within proximity, with the closest properties situated approximately 40m west of the carriageway.

Baseline noise levels are likely primarily influenced by vehicle traffic from the carriageway, with secondary sources from local urban activity.

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

The Annual Average Daily Traffic Flows (AADT, 2020) at this location is 12,040 approximately 5.8% of which consists of Heavy Goods Vehicles (HGVs).

Exact timings have yet to be fully determined, however night work is anticipated.

## Population and human health

No non-motorised provisions or community facilities exist within the scheme extents.

A pedestrian footpath runs along the bank of Annick Water, located directly below the elevated A78 carriageway. The works will not impact upon this path.

It has been determined that the proposed project will not have direct or indirect significant effects to population and human health and has therefore been scoped out for further assessment.

## Road drainage and the water environment

The Scottish Environmental Protection Agency's (SEPA) [Water Classification Hub](#) has identified Annick Water [ID: 10394] channelled directly below the carriageway within the scheme extents. SEPA has classified this waterbody as having an overall status of poor ecological potential and a chemical status of pass.

The [Indicative River & Coastal Flood Map](#) by SEPA has highlighted areas of surface water flood risk present throughout the scheme extents. River flooding has been associated with Annick Water, however, as the works will be limited to the elevated carriageway structure, river flooding will not impact the works.

Filter drains are utilised throughout the scheme

## Climate

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 CO<sub>2</sub> emissions by 80% before 2050 (from the baseline year 1990).

Scotland is working to reduce emissions of all major greenhouse gases by at least 75% by 2030, with the aim of reaching net zero by 2045.

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

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

## Description of main environmental impacts and proposed mitigation

### Air quality

#### Impacts

- The use of vehicles, plant and generators emitting carbon emissions may temporarily affect air quality and will require the use of finite resources.
- On site construction activities carry a potential to produce airborne particulate matter that may have a slight impact on local air quality levels.

#### Mitigation

- All works shall 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 shall 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 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

- Additional on-site lighting may cause disruption to nocturnal species in the area.
- Any protected species within the surrounding area may experience a slight degree of disturbance due to construction noise.

### Mitigation

- Artificial site lighting should be kept directional to the works area and switched off when not in use.
- Effects from noise should be kept to a minimum through the use of appropriate mufflers and silencers fitted to machinery. All exhaust silencers should be checked at regular intervals to ensure efficiency.

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

## Material assets and waste

### Impacts

- Contribution to resource depletion through use of virgin materials,
- Greenhouse gas emissions generated by material production and transporting to and from site,
- 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.

### 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.
- The chosen material 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 should reduce the usage of imported aggregates and increase the use of a wider range of sustainable aggregate sources.
- Operatives will be briefed with the Basic Waste Rules briefing.

- Further on-site investigations are required to determine the presence of tar with the carriageway. If tar is found, and will be disturbed by the works, then:
  - Special Waste will require disposal at a suitable waste facility.
  - A Scottish Environmental Protection Agency consignment note is required.
  - SEPA are to be informed at least three days prior to the movement of special waste.
  - Uncontaminated road planings generated will be recovered by a licenced contractor for reuse and / or recycling in accordance with the criteria stipulated within SEPA document 'Guidance on the Production of Fully Recoverable Asphalt Road Planings'.

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

## Noise and vibration

### Impacts

- Multiple residential properties within proximity may experience a level of disturbance during night works.
- Reduced reoccurring routine maintenance and associated levels of disruption due to TS2010 durability.
- TS2010 road surfacing will be utilised, which should improve the skid resistance and reduce mid to high frequencies of traffic levels.

### Mitigation

- North Ayrshire Council's Environmental Health Department has been notified of the works by the E&S Team.
- Residential properties in proximity should be notified in advance of the works, providing details of timings, nature, and duration of the works.
- Operatives must be briefed with the Amey Noise and Vibration toolbox talk before starting works.
- Effects from noise should be kept to a minimum through the use of appropriate mufflers and silencers fitted to machinery. All exhaust silencers should be checked at regular intervals to ensure efficiency.
- The noisiest works should be scheduled for before 11:00pm if feasible.

The residual impact throughout the duration of the works will be considered slight adverse throughout the works. The residual impact for population and human health is considered beneficial upon completion.

## Road drainage and the water environment

### Impacts

- If not adequately controlled, debris and run off from the works could be suspended in the surface water, in the event of a flooding incident, this debris may be mobilised and could enter the road drainage having a detrimental effect on the surrounding local water environment;
- Potential for spills, leaks or seepage of fuels and oils associated with plant to escape and reach drainage systems and watercourses, if not controlled; and,
- Flooding/adverse weather may impact the scheme extents, resulting in delays.

### Mitigation

- Spill kits will be readily available on site at all times;
- Visual pollution inspections of the working area will be conducted in frequency, especially during heavy rainfall and wind;
- Weather reports shall be monitored prior and during all construction activities. In the event of adverse weather / flooding events, all activities should temporarily stop, and only reconvene when deemed safe to do so, and run-off / drainage can be adequately controlled to prevent pollution.
- Best practice, as detailed by SEPA's Guidance for Pollution Prevention (GPPs), will always be adhered to onsite. The residual impact for the water environment is considered neutral.

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

## Climate

### Impacts

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

### Mitigation

- Where possible local suppliers will be used as far as 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.
- 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 pavement and associated road furniture, there is no change to the vulnerability of the road to the risk or severity of major accidents/disasters that would impacts 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.

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

This assessment has determined that the project will not have any direct or indirect significant effects with appropriate mitigation measures being in place before and during construction.

North Ayrshire Council (NAC) has been consulted on the 1<sup>st</sup> February 2022 on the proposed works which are anticipated to commence in June 2022. To date no comments from NAC have been received.

## 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 20,000m<sup>2</sup> (2ha) area of existing carriageway.
- North Ayrshire Council were contacted on the 1<sup>st</sup> of February 2022 regarding the night works. No comments have been made.
- 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 stone mastic asphalt (SMA).
- 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 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 areas” 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 carriageway pavement, filter stone and gullies, 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.

## 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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