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Record of Determination

A78 Eglinton Off-slip and Mainline North Bound

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Project Details

Description

The works are required to repair a section of damaged carriageway along the A78 Eglinton northbound carriageway, including the off-slip. The main driver for this scheme is due to severe crazing, fretting with some areas of transverse cracking which suggests structural failure of the carriageway. This also indicates the surface course is approaching the end of its serviceable life.

The works will consist of an inlay treatment of TS2010 road surfacing throughout the length of the scheme; AC20 binder and AC32 base will be utilised in areas of deeper treatment, to repair the defective road surface.

The package of works is set to take place in July 2021 for the duration of one full weekend. Working hours will likely consist of day and night-time working. North Ayrshire Council's Environmental Health Team were contacted in April 2021 regarding the required works and provided no comment.

Traffic management will involve a full weekend closure facilitated with diversion via the A737 carriageway.

Location

The scheme is located between Kilwinning and Irvine, falling within the region of North Ayrshire. The scheme has the following National Grid References:

- Scheme Start: NS 32472 41374
- Scheme End: NS 31144 41818

The length of the scheme is approximately 1.4km with an area of approximately 13,122m².

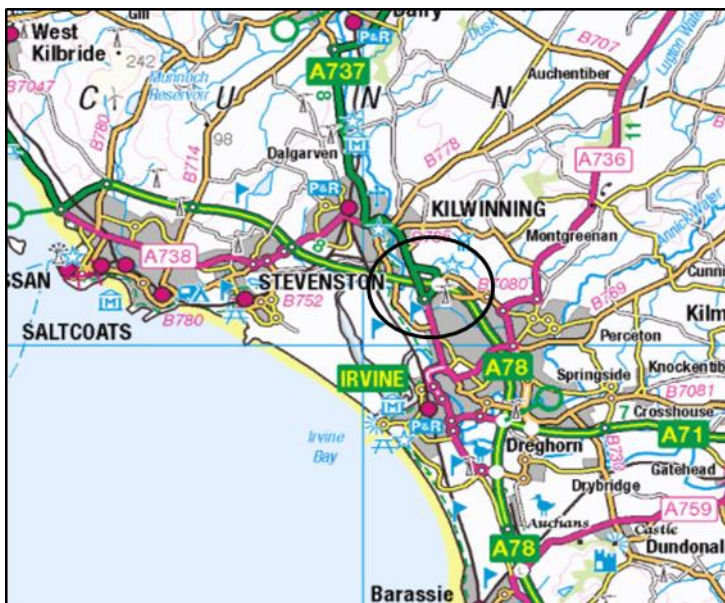


Figure 1 - Scheme Location

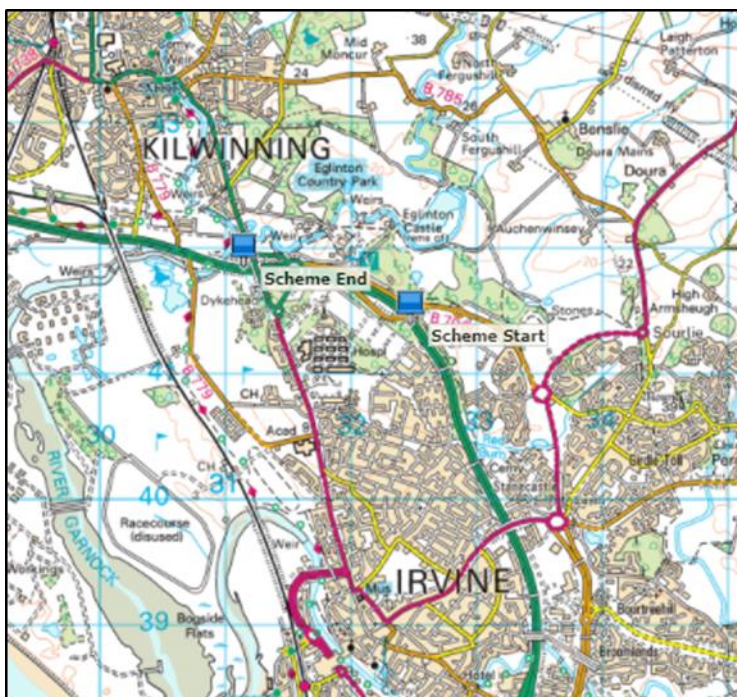


Figure 2 - Scheme Extents

Description of Local Environment

Population and Human Health

The scheme is located between Kilwinning and Irvine, falling within the region of North Ayrshire. Areas of woodland and industrial land encompasses the stretch of the carriageway.

There are no provisions for pedestrian, cyclists or community facilities within proximity of the scheme.

Residential properties exist within 300m of the scheme extents, of which the closest is found on Valleyfield Crescent at an estimated distance of 120m north.

Traffic count in 2019 accounted for 15,099 vehicles per day, with an average of 4.8% heavy goods vehicle.

The day and night modelled noise level (Lden) for the carriageway along the route of the scheme ranges from 65dB and 70dB whereas the night only modelled noise level (Lnight) ranges between 60dB and 65dB.

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

Baseline noise is likely to be influenced by vehicle traffic from the carriageway.

Biodiversity

The scheme is located between Kilwinning and Irvine, falling within the region of North Ayrshire. Areas of woodland and industrial land encompasses the stretch of the carriageway.

A desktop study using Nature Scot Sitelink Map does not identify any European designations within 2km of the scheme extents. Eglinton Country Park exists immediately north of the southbound carriageway.

Amey's Invasive Non-native Species (INNS) Database does not identify any INNS within 100m of the extents.

The works will fall within bird nesting season (March to August) and bat active season (April to September).

Field Survey

A field survey was undertaken on 06th April 2021 by the Environmental and Sustainability (E&S) Team to determine the requirement for protected mammal species licensing, under the Wildlife and Countryside Act 1981, the Nature Conservation (Scotland) Act 2004, the Conservation (Natural Habitats, &c.) Regulations 1994, Wildlife and Natural Environment (Scotland) Act 2011 and the Protection of Badgers Act 1992.

The area surveyed consisted of thorny, moss and grassy flooring, with various tree species scattered throughout the area such as silver birch *Betula pendula*.

It was determined that protected species were likely located in the wider (non-surveyed) woodland and are therefore unlikely to be affected by the works.

Land

The trunk road footprint consists of two northbound and southbound lanes, separated by a central reservation. A layby and on and off-slip roads exist within the scheme extents.

On site work activities will be confined within the A78 carriageway boundary and will not require access over any private or community land.

PastMap highlights Eglinton Castle recognised for its important value of Garden and Designed Landscape. This is located immediately adjacent the southbound carriageway.

Soil

The National Soil Map of Scotland identifies the local soils to consist of brown earths.

The scheme is not located within, or within proximity to, any Local Geodiversity Sites (formerly known as RIGS) or geologically designated SSSIs.

A desktop study using the British Geological Survey Map has identified local geology types as the following:

- **Bedrock Geology:** Scottish Middle Coal Measures Formation - Sedimentary Rock Cycles, Coal Measure Type. Sedimentary Bedrock formed approximately 315 to 318 million years ago in the Carboniferous Period. Local environment previously dominated by swamps, estuaries and deltas.

- Superficial Deposits: Raised Marine Deposits of Holocene Age - Clay, Silt, Sand And Gravel. Superficial Deposits formed up to 2 million years ago in the Quaternary Period. Local environment previously dominated by shallow seas (U).

Water

Drainage is provided by a drainage channel and filter located in the nearside verge, there are top entry gullies and filter drainage in the verge in the main line also.

Red Burn (unclassified) flows below the carriageway towards the western extents.

The Indicative River & Coastal Flood Map by the Scottish Environmental Protection Agency (SEPA) identifies sections of the scheme to be in a location at risk river flooding.

Air

North Ayrshire Council have not yet declared any Air Quality Management Areas. Residential properties exist within 300m of the scheme extents, the closest of which is found on Watercut Road at an estimated distance of 120m north.

Traffic count in 2019 accounted for 15,099 vehicles per day, with an average of 4.8% heavy goods vehicle.

Climate Change

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).

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.

Material Assets

Activity	Material Required	Origin/ Content
Site Construction	TS2010 Surface (bitumen and aggregate) Road Paint / studs AC32 / AC20 Binder and Base Filter stones	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

Activity	Material Required	Origin/ Content
		should reduce the usage of imported aggregates and increase the use of a wider range of sustainable aggregate sources.

Waste

Activity	Waste Arising	Disposal/ Regulation
Site Construction	<p>Road Planings</p> <p>Old filter stones</p> <p>- Where possible old filter stones should be washed / cleaned for reuse.</p>	<p>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.</p> <p>A core report has yet to be received.</p> <p>Coal Tar contain high levels of Benzo (a) pyrene.</p> <p>Any waste containing coal tar will be classed as special waste. This will require landfill disposal to a site capable of accepting coal tar contaminated waste.</p> <p>The disposal of special waste is also subject to obtaining a SEPA consignment note and providing advance notice of at least three days prior to any waste movement.</p>

Cultural Heritage

PastMap highlights Eglinton Castle recognised for its important value of Garden and Designed Landscape. This is located immediately adjacent the southbound carriageway.

Vulnerability of the Project to Risks

As the works will be limited to the like-for-like replacement of the carriageway pavement and filter drain, 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.

The replacement of the filter drain will have environmental advantages in reducing the likelihood of seasonal flooding within the carriageway and surrounding neighbourhood.

Description of Main Environmental Impacts and Proposed Mitigation

Population and Human Health

Impacts

- Residential properties may experience a level of disturbance due to construction works and associated Traffic Management (TM) arrangements.
- Traffic management will involve a full weekend closure with diversion established via the A737. Potentially increasing congestion and noise to the A737 and to local roads.
- TS2010 road surfacing is shown to have superior durability and noise reducing features compared to standard road surfacing mixes; thus preventing the need for reoccurring routine maintenance and associated levels of disruption.
- Drainage improvements may contribute to reducing the likelihood of surface water flooding, thus, possibly resulting in reduced rates of accidents due to water build-up, especially in harsh weather.

Mitigation

- Properties within 200m of the works will be notified prior to the works starting; detailing the nature, timings and duration of works along with traffic management arrangements.
- The road closures/restrictions will be widely publicised within the local and wider area, in an effort to minimise disturbance to vehicular travellers.
- Operatives will be briefed with the Noise and Vibration toolbox talk before starting works.
- Effects 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.
- Where possible, the noisiest works will be scheduled for before 11:00pm.
- Artificial site lighting will be directional and pointed away from residential areas.
- Operatives will follow best practice such as switching off plant / machinery when not in use and avoid shouting.

It has been determined that the proposed project will have slight temporary impact to population and human health.

Biodiversity

Impacts

- Protected species are active within the surrounding environment.
- Works may require the cut back of vegetation (likely minor shrub and grass) to accommodate the replacement of filter drain.
- The first line of trees consists of young silver birch *Betula pendula*. Young silver birch bark is typically smooth, and it is therefore unlikely for these trees to harbour features favourable for bat roosts.
- Artificial site lighting may disturb foraging habits of local nocturnal species.

Mitigation

- Where drainage will be replaced, operatives may encounter trees harbouring bird's nest. Therefore, a bird nesting check should be carried out 24 to 48 hours before any cut back. This can be carried out by competent personnel, landscaper, or E&S Team. If an active bird's nest is observed it must not be removed or disturbed, until advice is sought. This may require obtaining a licence to remove and displace the bird / eggs.
- Works must temporarily stop upon the sighting of a protected species and should only recommence once the protected species has vacated the site. Further advice may be sought from the E&S Team.
- On site light sources will be kept to a minimum, and only used as required. When in use, any artificial light should be pointed down and directed at the area of works as far as reasonably practicable, reducing any light spill into the wider surroundings including to nearby sensitive areas.
- Any excavations which are left open and unattended overnight (including manholes), shall be benched or ramped to avoid entrapment and such excavations should be inspected each morning for the presence of trapped animals.
- The safe and secure storage of oil, fuels and other potential pollutants or poisonous materials will be adopted. These pollutants must not enter nearby drains or watercourses.
- It is an offence to damage, destroy or interfere with the nest of any bird while it is in use. Upon discovering an active nest, the E&S Team must be contacted. The

nest must not be removed or disturbed, until advice is sought. This may require obtaining a licence to remove and displace the bird.

- Site operatives will be briefed with the Birds, Nesting Birds and Protected Species environmental toolbox talks.

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

Land

The works will be kept to the existing trunk road boundary and will not require or prevent access to private or community land out.

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

PastMap highlights Eglinton Castle recognised for its important value of Garden and Designed Landscape. This is located immediately adjacent the southbound carriageway. No impact is predicted to this feature as a result of or during construction, as works will be restricted to the northbound carriageway.

Soil

Minor excavation works will be required to replace the filter drain. Adverse impact is not predicted, as excavation will take place on already worked ground.

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

Water

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;
- Risk of flooding may impact the scheme extent delaying the works.

Mitigation

- Appropriate measures will be implemented onsite to prevent any potential pollution to the natural water (e.g. debris, dust, hazardous spills). Measures can include but not limited to:
 - Spill kits must always be present on site,
 - The use of funnels and drip trays when transferring fuel,
 - Use of dampening or tool extraction mechanisms to control dust,

- The use of covers to act as seal around drains,
- Any pollution incidents will be reported.
- Visual pollution inspections of the working area will be conducted in frequency, especially during heavy rainfall and wind.
- Weather reports will 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.
- Oil, fuels and other potential pollutants or poisonous materials will be stored safely on site to prevent spillages;
- Best practice, as detailed by SEPA's 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.
- The installation of the new sub-surface road drainage system will be connected to an existing drainage system, therefore, under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR regulations), the scheme does not require any form of registration or licence.

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

Air

Impacts

- The use of vehicles and plants 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

Best practice measures will to be adopted for the duration of the scheme. Best practice measures will include but not be limited to:

- Vehicle and plant servicing/checks as per manufacturing and legal requirements;
- Adoption of drive green techniques;
- Route preparation and planning;
- When not in use plant and vehicles will be switched off.

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

Climate Change

Impacts

- Greenhouse gas emissions will be emitted through the use of machinery, vehicles and materials used (containing recycled and virgin materials).

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 being emitted.
- Further actions and considerations for this scheme are detailed in section 18 Material Assets.

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

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,
- Special waste disposal may be required, if tar is present.

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.
- 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'.
- 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.

Circular Economy

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.

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

Cultural Heritage

It has been determined that the proposed project will not have direct or indirect significant effects to features of undiscovered cultural heritage

Assessments of the Environmental Effects

The following statutory organisations have been consulted:

- North Ayrshire Council's Environmental Health Team have been notified of the proposed works.

The following environmental surveys / reviews have been undertaken:

- A design Initial Environmental Review of the scheme, undertaken by the Environmental and Sustainability Team at Amey in April 2021.
- A field survey was undertaken by the Environmental and Sustainability Team at Amey on 6 April 2021.

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

This is/is not 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,

are not situated in whole or in part in a sensitive area within the meaning of regulation 2(1) of the Environmental Impact Assessment (Scotland) Regulations 1999.

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 13,122m² / 1.3ha area of existing carriageway.
- 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 will be fully recycled in accordance with Guidance on the Production for Fully Recovered Asphalt Road Planings.

- 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 and filter drain 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 road users.
- 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.
- Drainage improvements may contribute to reducing the likelihood of surface water flooding, thus, possibly resulting in reduced rates of accidents due to water build-up, especially in harsh weather. In addition, the overall improvement and upgrading of the A78 carriageway and slip roads will reinforce the safety of the wider network.

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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