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Environmental Impact Assessment Record of Determination

A77 Dowhill to Chapleton Burn

Contents

Project Details

Description

The main driver for the scheme is to treat the high incidence of alligator cracking seen in the visual condition survey on the A77. Sections of the carriageway surface which are outdated and worn will also be replaced.

The works will involve carriageway surface reconstruction, likely utilising TS2010. Exact treatment depths have yet to be confirmed. The construction activities for this scheme will involve:

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

South Ayrshire Council's Environmental Health team were contacted via email on 25/08/2021 to inform them of these works.

The works are programmed to take place in February 2022. The exact work dates and duration is not yet known, however it is likely work will be carried out during nightshifts.

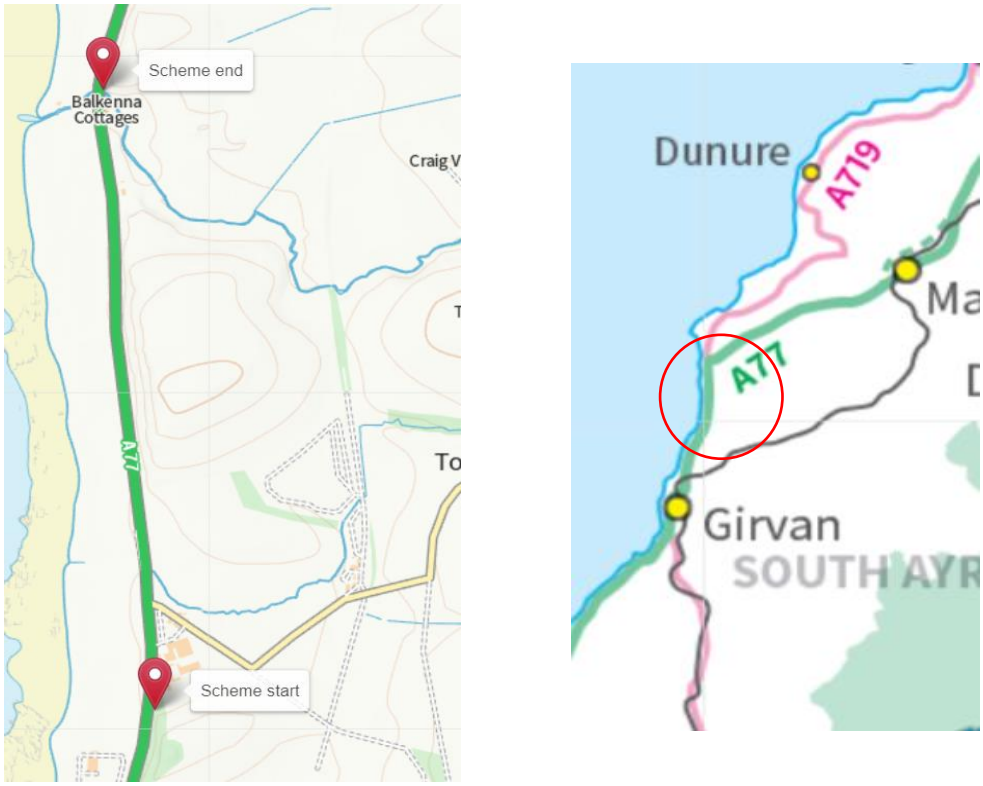
Traffic Management (TM) for this scheme is yet to be confirmed but will involve either total carriageway or lane closures.

Location

The scheme is situated on a rural section of the A77 carriageway, South Ayrshire. The National Grid Reference is:

- Scheme start – NS 20242 03058
- Scheme end - NS 20110 04709.

Image 1 – Site location



Description of Local Environment

Population and Human Health

The Annual Average Daily Flow (AADF) of traffic on this section of carriageway in 2020 was recorded as 6,788 with 1,035 of these being Heavy Goods Vehicles (HGVs) as reported by the Department of Transport.

There is one footpath located partially along the southbound carriageway towards the scheme end.

There are a number of accesses within the scheme extents which lead to a mixture of residential properties, the local road network and agricultural land.

There is one bus stop located towards the scheme start (southbound carriageway).

There are a number of residential properties within close proximity to the scheme. There are three clusters of residential properties at the start middle and end of the scheme, all are adjacent to the carriageway on the eastern side of the road.

The scheme does not fall within a Candidate Noise Management Area (CNMA).

There are no Core Paths, cycle paths or bridleways within the scheme extents.

Biodiversity

Turnberry Dunes Site of Special Scientific Interest (SSSI) is located approximately 220m north of the scheme start.

Amey's Roadkill (2000-2021) and Invasive Non-Native Species (INNS) databases show no records within the scheme extents.

Field Survey

Due to there being no favourable habitat for protected species shelter in close proximity to the carriageway, a field survey has been deemed not required.

Land

These works will take place on both carriageways. The scheme is flanked on both sides by agricultural land with a small pocket of woodland adjacent to the southbound carriageway.

The works will be limited to the existing man-made carriageway structure and will not require access to third party land.

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

Soil

The soil type in this area has been identified by Scotland's Soil Map as both brown earth and non-calcareous gleys.

The scheme does not fall within an area for Geological Conservation Review according to Sitelink.

The works will be limited to the existing man-made carriageway structure. No soil works are required.

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

Water

Chapleton Burn (Unclassified by the Scottish Environment Protection Agency (SEPA)) flows below the carriageway at the scheme end. An unknown issue also flows below the carriageway at the scheme start.

SEPA Flood Risk Map has identified there is a risk of flooding from Chapleton Burn.

Air

South Ayrshire Council have not declared any Air Quality Management Areas (AQMAs).

There are no air quality monitoring stations located in proximity to the scheme location.

The local background air pollution will primarily come from agricultural activities.

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

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

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 CO_2 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.

Material Assets

Table 1 – Site construction materials

Key Materials Required for Activities		
Activity	**Material Required**	**Origin/ Content**
Site Construction	• Road paint • TS2010 Road surfacing • Binder	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.

Waste

Table 2- Site construction waste materials

Key Waste Arising from Activities		
Activity	**Waste Arising**	**Disposal/ Regulation**
Site Construction	• Road planings • Road paint/studs	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. Further on-site investigations of the carriageway condition are required, including Coring and Testing. Due to this, condition of surfacing could not be fully determined, including presence of coal tar. As such, presence of tar is not currently known for this scheme. Presence of tar should be confirmed prior to the commencement of the works. If evidence of tar is identified during further site investigations, any tar-contaminated planings will require removal off site for treatment/disposal at a licenced waste facility.

Cultural Heritage

According to PastMap,Dowhill Mount, Dun and Earthwork sits approximately 180m south east of the scheme start (out with the scheme extents).

Description of Main Environmental Impacts and Proposed Mitigation

Population and Human Health

Impacts

- Residential properties within proximity may experience a level of disturbance during night works.
- The works have the potential to block the footpath temporarily.
- Accesses and the bus stop may be blocked while works take place.
- Traffic management may result in delays to vehicular users.

Design Mitigation and Regulatory Requirements

South Ayrshire Council's Environmental Health team were contacted via email on 25/08/2021. No comment has been made.

Site Specific Control Measures

- Advanced signage will be put in place to notify drivers of the upcoming closures and diversion route.
- If footpaths are blocked then alternative, safe passage should be put in place for pedestrians of all ability.
- A temporary bus stop should be put in place if the original is blocked.
- Site operatives should grant local access if it is blocked.
- A letter drop should be delivered to properties highlighted on the notification map, this should detail work timings and activities.
- No plant/vehicles/machinery will be left idling when not in use.
- All plant/vehicles/machinery will be fitted with mufflers/silencers.
- Site operatives will keep their voices down.

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

Biodiversity

Impacts

- Due to the distance from the works and the designated features, there is no predicted impact on the SSSI.
- There is potential for protected species to be active in the area.
- Additional on-site lighting may cause disruption to nocturnal species in the area.
- There is potential for roadside verges to be damaged if plant/vehicles/materials are stored on it.

Site Specific Control Measures

- Site operatives must remain vigilant for protected species on the site. If any protected species approach the site then all works must stop immediately until it has passed through. The control room and E&S team should be notified.
- Artificial site lighting should be kept directional to the works area and switched off when not in use.
- All plant/machinery/vehicles must be stored on the existing carriageway at all times.

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

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 fuel/chemical spillages through the use of various plant and vehicles, which may adversely impact the water environmental.
- As Chapleton Burn flows below the carriageway there is no risk of flood waters reaching the carriageway.

Site Specific Control Measures

- Appropriate measures, as detailed in the Guidance for Pollution Prevention (GPP) 1 and 5 issued by NetRegs, should be implemented to prevent pollution to the natural water environment (e.g. debris, dust sand and hazardous substances) via entering nearby drains.

- 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 the drainage system. This can be via the use of drain covers or similar.
- Weather reports should be monitored prior to and during the works with all construction activities temporarily halting in the event of adverse weather/flooding event. The works should only continue when it is deemed safe to do so and run-off/drainage can be adequately controlled to prevent pollution.

Provided mitigation is followed the residual impact of works on the water environment is deemed neutral.

Air

Impacts

- The use of vehicles, plants 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.
- The diversion route is likely to increase traffic levels and associated emissions within local road networks.

Site Specific Control Measures

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 vehicle 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.

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

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.
- Further actions and considerations for this scheme are detailed in Material Assets (Table 1).

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

Material Assets

Impacts

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

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 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.

Waste

- Transportation and recovery of planings will require energy deriving from fossil fuel,
- Limited quantity of waste from sweeping will arise requiring disposal.
- Special waste may be produced if coal tar is present.

Mitigation

- 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'.
- If coal tar is present, then this will be treated as special waste and a SEPA consignment note is required, and the waste will be disposed of at an appropriate and licenced facility.

Cultural Heritage

It has been determined that the proposed project will not have direct or indirect significant effects to Cultural Heritage due to the distance between the works and features.

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 that would impacts on the environment.

Cumulative Effects

There are no schemes in close proximity to this one which will add to effects to the local environment.

Assessments of the Environmental Effects

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

South Ayrshire Council's Environmental Health team were contacted via email on 25/08/2021 to inform them of these works.

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

This is a relevant project in terms 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 14,860m^2 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).
- Turnberry Dunes Site of Special Scientific Interest (SSSI) is located approximately 220m north of the scheme start which has been designated for

beetle assemblage. However given the distancing, and that works will be strictly limited to the like-for-like replacement of the existing carriageway surface, no impact is predicted.

Characteristics of potential impacts of the scheme:

- 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 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.

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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