EC DIRECTIVE 2011/92/EU (as amended)

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

RECORD OF DETERMINATION

Name of Project:

M77 J3 to Rail Bridge NB

Location:

The scheme is situated at Darnley Mains, M77, Junction 3 Glasgow. The works have the following XY Coordinates

- Scheme Start: 253647, 658921

  Scheme End: 253908, 6601394

The scheme length is approx. 1.3km with a total area of approx. 1 hectare.

See Appendix 1 for scheme location and extents.

Description of Project:

The works are required to replace worn road surfacing on a section of the M77.

TS2010 surface course replacement is expected throughout the scheme extents with localised deeper inlays (comprising AC20 binder and AC32 base) where appropriate, which will be determined at SOI (SA) stage.

Anticipated plant required: Roller wagons and paver planer.

The works are programmed to take place in March 2021 and last approximately 10 to 14 nights

Traffic management will consist of either contraflow crossover points or overnight closures.

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 section of the M77 motorway falls within an Urban setting just east of Darnley, Glasgow. M77 is a 2-lane motorway with hard shoulder that connects Kilmarnock to Glasgow. This scheme consists of a right hand then left-hand sweeping bend. The section is kerbed on both sides and consists of a positive drainage system using top entry gullies. There are overbridges and gantries within the scheme extents as well as VRS on the nearside and centre reservation throughout. End of scheme has a bridge deck. This totals to x5 structures within the scheme extents. The scheme does not fall within a Candidate Noise Management Area (CNMA) as defined by the Transportation Noise Action Plan, Road Maps. There are no Core Paths, footways, cycleways or bridleways within the scheme extents. Nor is there any access off of the scheme. Baseline noise is likely to be influenced by vehicle traffic from the carriageway and rail line. The scheme extents lie within a mixed residential / commercial area. The closest residential properties lie within 50m of the carriageway. St Angela's Primary School and Darnley Primary School lie approximately 200m west of the scheme extents. Ashpark Primary School lies approximately 100m east of the scheme extents. There may the potential for noise and air quality impacts on these receptors during the day.
2. Biodiversity The surrounding habitat is predominantly parkland with some agricultural use and belts of trees either side of the motorway. NatureScot Sitelink Interactive Map[1] has not identified any Nature 2000 or locally designated sites within proximity or connected to the works location. Amey's Invasive Non-native Species Database does not hold any record of INNS within proximity to the works. Given the suboptimal surrounding habitat, a field survey has not been deemed necessary for these works.
3. Land The M77 motorway at Darnley consists of two northbound and southbound lanes with a central reservation approximate 4m wide. Road verges are vegetated with low lying grass and thin strips of scrub/trees. A mixture of parkland, an industrial plant and residential properties are present beyond the M77.

[1] https://sitelink.nature.scot/map (accessed on 18/02/2021)

Description of Local Environment:
4. Soil The National Soil Map of Scotland[2] identifies the local soil type to consists partially of built up land and mineral gleys.
5. Water SEPA's Water Classification Hub Map[3] has identified the Brock Burn (SEPA ID: 10920) approximate 100m west of the scheme extents.. This has been classified an overall status of 'moderate', an ecological status of 'moderate' and a chemical status of 'pass'. SEPA Flood Risk Maps[4] has identified a high risk of surface water flooding within the scheme extents. Road drainage consists of a positive system using top entry gullies.
6. Air The works are located along a predominantly urban area just east of Darnley, Glasgow. A number of residential developments are located within proximity to the scheme, with the closest residential properties situated approximately 50m from the carriageway. Background concentrations of air pollutants for the extent of the scheme can be modelled using the air pollutant data from DEFRA. The modelled background concentrations for 2020 are as follows: • Nitrogen dioxide (NO_2): 11.84 µg/m^3, • Nitrogen oxide (NOx): 15.61 µg/m^3, • Particulate Matter (PM_{10}): 9.93 µg/m^3. These values are all within the legal limits set out in the policy objectives outlined in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007. The day and night modelled noise level (Lden) for the carriageway along the route of the scheme ranges from 75dB to >=80dB whereas the night only modelled noise level (Lnight) ranges between 65 to <75dB. The annual average daily traffic for within the scheme extents at the Traffic Count Point 74429 is 70,445 for all motor vehicles. This can be further broken down into: • 5,252 Heavy Goods Vehicles (HGVs), • 9,573 Light Goods Vehicles (LGVs), • 592 Buses and Coaches, • 63,830 Cars and Taxis, and • 199 Motorbikes.

[2] http://map.environment.gov.scot/Soil_maps/?layer=1 (accessed 18/02/2021)
[3] https://www.sepa.org.uk/data-visualisation/water-classification-hub/ (Accessed on 12/01/2021)
[4] https://map.sepa.org.uk/floodmap/map.htm (Accessed on 12/01/2021)

Description of Local Environment:
The closest Air Quality Management Area (AQMA) (Glasgow City Centre), which was declared for Nitrogen Dioxide (NO2) and Particulate Matter < 10 µm, is located approximately 6km north east of the scheme.
7. Climate To support our journey towards carbon neutral and zero waste we include potential opportunities for enhancement utilising circular economy principals within assessment of material assets. Amey (working on behalf of Transport Scotland) undertake carbon monitoring. Emissions from our activities are recorded using Transport Scotland's Carbon Management System.

8. Material Assets and Waste

Activity	Material Required	Origin/ Content
Site Construction	• TS2010 Surface (bitumen and aggregate) • AC20 Binder • 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 [5].

Key Waste Arising from Activities

Activity	Waste Arising	Disposal/ Regulation
Site Construction	• Road Planings	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.'[6] A core report was submitted with no samples showing signs of coal tar, therefore, special waste disposal is not required.

[5] Transport Scotland TS2010 Surface Course Specification and Guidance Issue 04, 2018 (as amended)
[6] SEPA Guidance on the Production of Fully Recovered Asphalt Road Planings

Description of Local Environment:
9. Cultural Heritage PastMap[7] was used to check for cultural heritage sites within 2km of the scheme extents. The Pollok Park Conservation Area and Garden & Designated landscape is approximately 100m from the northern extents of the scheme.
10. Landscape The works do not fall within any areas designated for their landscape quality. 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 minor and operating on a like-for-like basis, no permanent changes to landscape features are predicted. Works will be restricted to the existing carriageway boundary and will not impact upon the surrounding landscape.

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.
11. Population and Human Health 11.1 Impacts • Given the nearby proximity of residential properties to the works location, it is anticipated that residents may experience a degree of disturbance with regards to construction noise, particularly during night time hours when there is a potential for sleep to be impacted. • TS2010 road surfacing is shown to have superior durability and noise reducing features compared to standard road surfacing mixes. Vehicle travellers and nearby residential properties will benefit from improved road surfacing as a result of the scheme. 11.2 Mitigation • 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. • Operatives will avoid extraneous noise on site (i.e. shouting, music, slamming of doors etc.) • The noisiest works should be scheduled for before 23:00, where practicable. • Glasgow City Council's Environmental Health Department has been contacted in the event of night-time working. No response from GCC has been received to date.

[7] https://pastmap.org.uk/map (accessed on 18/02/2021)

Description of the main environmental impacts of the project and proposed mitigation:
• Operatives will be briefed with the Noise and Vibration toolbox talk before starting works. • A letter drop should take place to inform all residents within 300m of the work of the scheme. This will include the work start date, expected duration and outline any access restrictions. With best practice mitigation measures in place the residual impact to population and human health is considered slight adverse during construction.
12. Biodiversity 12.1 Impacts • Misdirected site lighting could cause disturbance to any surrounding nocturnal species. • There will be temporary increases in noise levels in the area resulting from the works. This may cause disturbance to local wildlife. However, any increases in noise levels will be intermittent and will last only for the duration of the works. • Potential for protected species to be active in the surrounding area. 12.2 Mitigation • All temporary lighting should be directional and pointed away from sensitive ecological receptors. • In the event of observing a protected species on the live working site, all works must temporarily stop until the mammal animal has moved on. The control room should be contacted for environmental record. No significant residual impacts have been deemed to affect local biodiversity as a result of the works.
13. Land The works will be kept to the existing M77 carriageway boundary and will not require access to private or community land. Plant, materials and any temporary storage will be kept to the made carriageway surface only. The works will be kept to the existing carriageway and will have no impact on local land or soils. It has been determined that the proposed project will not have direct or indirect significant effects to land.
14. Soil The works will be kept to the existing carriageway and soils will not be impacted. It has been determined that the proposed project will not have direct or indirect significant effects to soil.
15. Water 15.1 Impacts • Potential for fuel/chemical spillages to enter the drainage system or local water environment. • 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.

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

- Should flooding occur, this may delay the scheduled works.

15.2 Mitigation

- Appropriate measures should be implemented onsite to prevent any potential pollution to the natural water environment (e.g. debris, dust and hazardous substances). This should include spill kits being present onsite at all times, the use of funnels and drip trays when transferring fuel etc.
    - In the event of a spill or any pollution incident, emergency procedures would be initiated and reported to the control room immediately on 0800 042 0188 (24 hours, 7 days a week).
    - All people working on site should receive an induction that includes pollution risks and how to avoid them. Toolbox talks will be used to help reinforce the message. All operatives working on site know how and when to report a pollution incident.
    - Regular monitoring of weather reports and in the event of flooding events, works will be stopped until safe to do so to enable run-off to be adequately managed.
    - All works should operate in accordance with current best practice and SEPA Guidance for Pollution Prevention (GPPs), the residual impact for water is considered to be neutral.
- 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, containment boards or similar.

16. Air

16.1 Impacts

- On site construction activities carry a potential to produce airborne particulate matter and generate emissions that may have a temporary impact on local air quality levels.

16.2 Mitigation

- Best Practicable Means and Best Practice Guidelines of reducing dust and emissions should be followed 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:
    - Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods;
    - Ensure all vehicles switch off engines when stationary; there should be no idling vehicles;
    - All plant and fuel-requiring equipment utilised during construction should be well maintained.
- Regular monitoring (e.g. site walkover by engineer or Clerk of Works) must take place when dust generating activities are occurring. In the event that an unacceptable volume of dust is emanating from the site the operation must, where possible, be modified and rechecked to verify that the corrective action has been effective. Actions include:
    - Minimise cutting plant idling time and grinding onsite.

Description of the main environmental impacts of the project and proposed mitigation:
○ Reducing the operating hours. ○ Reposition equipment. ○ Change the method of working etc. • Best practicable means of noise control, as described within BS 5228-1 and -2:2009+A1:2014 'Code of Practice for Noise and Vibration Control on Construction and Open Site', should be implemented in order to minimise the risk of disturbance. The following measures are relevant to the scheme: ○ Avoid unnecessary revving of engines and switch off equipment when not in use; ○ Use rubber linings in, for example, chutes and dumpers to reduce impact noise; ○ Minimise drop height of materials; ○ Start-up plant and vehicles sequentially rather than all together • Unnecessary noise should be avoided when carrying out manual operations and when operating plant and equipment. Worker noise should also be minimised. • Percussive operations must be avoided, except where there is an overriding justification. • Reversing warning systems must be switched to the minimum setting required by Health and Safety Executive and, where possible, must utilise 'broadband white noise'. • Appropriate mufflers and silencers should be fitted to machinery. All exhaust silencers should be checked at regular intervals to ensure efficiency. • The Local Councils Environmental Health Departments have been contacted informing them of the works as they take place within 300m of residencies and at night. • A letter drop should take place to inform all residents within 300m of the work of the scheme. This will include the work start date, expected duration and outline any access restrictions. The contact details of the Project Manager (email and out of office contact number) will also be provided should a noise complaint wish to be made. It has been determined that the proposed project will not have direct or indirect significant effects to air quality.
17. Climate 17.1 Impacts • Greenhouse gas emissions will be emitted through the use of machinery, vehicles and materials used (containing recycled and virgin materials). 17.2 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.
18. Material Assets and waste 18.1 Impacts • Contribution to resource depletion through use of virgin materials. • Greenhouse gas emissions generated by material production and transporting to and from site.

Description of the main environmental impacts of the project and proposed mitigation:
• Transportation and recovery of planings will require energy deriving from fossil fuel. • Limited quantity of waste from sweeping will arise requiring disposal. 18.2 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. • Road sweeping waste will be treated at a licenced facility to separate useful materials such as stone/aggregate as far as reasonably practicable, recovering this waste and diverting it from landfill. <u>Circular Economy</u> 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.
19. Cultural Heritage Given the restriction of the works to the existing carriageway and the distance separating works from Pollok Park Conservation Area, no impact is predicted to the feature of cultural heritage. It has been determined that the proposed project will not have direct or indirect significant effects to Cultural Heritage.
20. Landscape 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.
21. 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.

Transport Scotland

Record of Determination M77 Junction 3 to Rail Bridge NB

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:

- Glasgow City Council

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

The works are considered to constitute a relevant project falling within Annex II as referred to in the Environmental Impact Assessment (Scotland) Regulations 1999 (as amended), as they 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). 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:

- Construction activities are restricted to the 1ha 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, 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.

APPENDIX 1 : SCHEME LOCATION AND EXTENTS