

EC DIRECTIVE 2011/92/EU (as amended)

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

RECORD OF DETERMINATION

Name of Project:

M74 Northbound & Southbound Junction 3-3a

Location:

The scheme is located on the M74 carriageway within Glasgow City, and has the following National Grid References:

- Southbound;
 - Scheme Start: NS 65733 62271
 - Scheme End: NS 67190 62307
- Northbound;
 - Scheme Start: NS 67184 62285
 - Scheme End: NS 66292 62187

The length of the scheme is approximately 1.47km, with a total works area of approximately 26,000m² (2.6ha) across both carriageways.

Description of Project:

The works are required to maintain the safety and integrity of the M74 carriageway, which is showing vertical movement in the pavement between junctions 3 and 3a, on both northbound (NB) and southbound (SB) carriageways. There is a notable depression within the scheme extents, which appears to be a result of the ground settlement and has resulted in a temporary 40mph speed limit being deployed following concerns for vehicle stability. There are historical issues with differential settlement in the sub formation which has caused development of poor profile at surface course level. As such, the carriageway is experiencing significant surface course deterioration, with evidence of several potholes and permanent hand patching undertaken previously over several metres.

Works are required to address the surface course issues, and prevent accelerating pavement deterioration. Works will involve carriageway surface reconstruction treatment utilising TS2010 and aggregate class 1 to depths of between 30mm and 100mm across the full scheme. AC20 binder will be utilised in areas of deeper treatment.

Construction activities will likely involve the following:

- Milling of existing bituminous material by road planer;
- Additional bituminous material removed by jack hammer where not accessible by planer;
- Loader/excavator used to collect and move excess material;

- Binder material laid and compressed (where required);
- Tack/bond coat laid;
- 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;
- Road markings replaced.

The works are currently scheduled to commence on 22nd of February, until 6th of March. Working hours will be between 20:00 and 06:00. No works will be undertaken on the weekend of the 27th & 28th February.

Traffic management (TM) for the works will involve the following:

- Five overnight carriageway closures (weekday) for SB carriageway followed by five overnight carriageway closures (weekday) for NB carriageway, with signed diversion route.
- A lane 3 closure will be in operation during weekdays in between works, utilising hard shoulder running to maintain capacity.

Glasgow City Council Environmental Health Team has been informed of the required night works. 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 works area is located along a semi-rural stretch of the M74 carriageway. Daldowie wastewater treatment works (WWTW) is located to the south, and a landfill site is located to the north. Patches of trees, areas of grassland and the River Clyde are present in the wider surroundings.

The vehicle count in 2020 per day was 35,265 NB and 34,061 SB, with heavy goods vehicles (HGVs) averages of 20% and 14% respectively. Baseline noise level is likely to be primarily influenced by vehicle traffic from the carriageway, with secondary sources including activity from nearby industrial activities.

No residential properties exist within 300m of the scheme. Due to the motorway status of the carriageway, no non-motorised provisions exist within the scheme extents.

The scheme does not fall within a Candidate Noise Management Area (CNMA)¹ as defined by the Transportation Noise Action Plan, Road Maps.

¹ <https://consult.gov.scot/transport-scotland/transportation-noise-action-plan-2019-2023/> (Accessed 14/01/2021)

Description of Local Environment:

2. Biodiversity

The scheme is located along the M74 carriageway within a semi-rural area of Glasgow City, surrounded by thin wooded strips and grassland. The River Clyde flows south of the scheme extent next to the Daldowie WWTW.

A desktop study using Nature Scot Sitelink Online Interactive Map² has not highlighted any national or European designated sites within proximity of the scheme location.

The Amey Animal Roadkill Database (2000 – 2020) has not identified any protected species roadkill within the scheme extents.

Amey's Invasive Non-native Species Database (INNS) has highlighted Japanese knotweed growth on the northbound verge area, approx. 30m from the western scheme extents (NGR NS 65745 62226). Please see the INNS Location Map in Appendix 3.

Field Survey

Due to minimal vegetative cover within close proximity to the scheme, the area has been deemed unsuitable for protected species shelter. As such, a desktop assessment has been deemed sufficient, and a site survey has not been deemed necessary for these works.

3. Land

The trunk road footprint consists of three northbound and three southbound lanes. Road verges are vegetated with low lying grass and thin intermittent strips of scrub/trees.

4. Soil

The scheme is not located within, or within proximity to, any Local Geodiversity Sites (formerly known as RIGS)³ or geologically designated SSSIs⁴.

The National Soil Map of Scotland has highlighted the surrounding local soils to consist of brown earths.

A desktop study using the British Geological Survey Map⁵ identifies local geology type 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: Glaciofluvial Deposits, Devensian - Sand and Gravel. Superficial Deposits formed up to 2 million years ago in the Quaternary Period. Local environment previously dominated by ice age conditions (UGF).

² <https://sitelink.nature.scot/home> (Accessed 14/01/2021)

³ <https://www.google.com/maps/d/viewer?mid=1HfclRWclTRxXUZWNARManI-PUhE&ll=57.74680670722851%2C-5.313263556249922&z=6> (Accessed 14/01/2021)

⁴ <https://sitelink.nature.scot/home> (Accessed 14/01/2021)

⁵ <http://mapapps.bgs.ac.uk/geologyofbritain/home.html> (Accessed 14/01/2021)

Description of Local Environment:

5. Water

A desktop study using SEPA's River Basin Management Plan Interactive Map⁶ has identified River Clyde, which flows adjacent to the M74 northbound carriageway at a distance of approx. 120m south. SEPA has given this watercourse an overall status classification of 'Moderate' ecological potential, comprising an overall ecology status of 'Moderate', and a chemistry status of 'Pass'.

Settling ponds associated with nearby industrial properties exist approx. 50m south and several field drains flow within proximity of the M74 carriageway throughout the scheme extents.

The Indicative River & Coastal Flood Map⁷ by SEPA does not identify the scheme to be located in an area at risk of flooding.

Road drainage is provided by a combination of side and top entry gullies throughout the scheme.

6. Air

The scheme is located along a semi-rural stretch of the M74 carriageway, west of Uddingston. Areas of industrial property are located north and south, with large areas of residential properties present in the wider environment.

This section of the M74 is the main route connecting Glasgow to North and South Lanarkshire. The vehicle counts in 2020 per day were 35,265 NB and 34,061 SB, with heavy goods vehicles (HGVs) averages of 20% and 14% respectively.

As such, local air quality is likely affected by the high daily use of the carriageway by road vehicle users, with secondary sources from nearby industrial activities.

The scheme is not located in proximity to any Air Quality Management Areas (AQMA) declared by Glasgow City Council⁸.

7. 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 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.

8. Material Assets and Waste

Key Materials Required for Activities

Activity	Material Required	Origin/ Content
Site Construction	<ul style="list-style-type: none"> TS2010 Surface Course (bitumen and aggregate) AC20 Binder 	A proportion of reclaimed asphalt pavement (RAP) is used in asphalt

⁶ <https://www.sepa.org.uk/data-visualisation/water-classification-hub/> (Accessed 14/01/2021)

⁷ <http://map.sepa.org.uk/floodmap/map.htm> (Accessed 14/01/2021)

⁸ <http://www.scottishairquality.scot/laqm/aqma?id=378> (Accessed 14/01/2021)

Description of Local Environment:		
	<ul style="list-style-type: none"> • Road paint • Road studs 	<p>production. Typical RAP values for base and binder are 10% -15%.</p> <p>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 sources⁹.</p>
<u>Key Waste Arising from Activities</u>		
Key Waste Arising from Activities		
Activity	Waste Arising	Disposal/ Regulation
Site Construction	<ul style="list-style-type: none"> • Road planings 	<p>No tar bound macadam has been identified within the scheme extents during the investigation stage.</p> <p>As such, all road planings generated as a result of the works may be recovered in accordance with the criteria stipulated within SEPA document 'Guidance on the Production of Fully Recoverable Asphalt Road Planings'.</p>
<p>9. Cultural Heritage</p> <p>A desktop study using PastMap¹⁰ has not highlighted any features of cultural heritage within proximity of the works.</p>		
<p>10. Landscape</p> <p>The works are located within a semi-rural area of the M74, with the surrounding environment consisting of grassed verges, scattered woodland and industrial properties. The M74 within the scheme extents does not fall within any designation for landscape quality or character.</p>		
<p>11. Vulnerability of the Project to Risks</p> <p>The Indicative River & Coastal Flood Map¹¹ by SEPA does not identify the scheme to be located in an area at risk of flooding.</p> <p>No other existing vulnerabilities exist at the scheme location.</p>		

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

¹⁰ <https://pastmap.org.uk/> (Accessed 14/01/2021)

¹¹ <http://map.sepa.org.uk/floodmap/map.htm> (Accessed 14/01/2021)

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

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

1. Population and Human Health

1.1 Impacts

- Traffic management (TM) for the works will involve a combination of full carriageway and single lane closures;
 - TM may impact on journey time for those travelling via this stretch of the carriageway, with potential for delays and increased journey times.
 - TM arrangements may cause slight levels of temporary disruption to road users (i.e. increased traffic levels, congestion and nuisance to surrounding road networks).
- This section of carriageway will benefit from 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.
- Works will result in a smoother ride quality of the M74 carriageway at this location, due to correction of carriageway depression.

1.2 Mitigation

- Advance traffic warning signs will be placed prior to road closures in order to inform road users of temporary 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.
- Diversion routes will be clearly signed to minimise disruption to carriageway users.
- Due to night-time works, Glasgow City Council's Environmental Health Department have been contacted in advance of the works.

The residual impact to population and human health is considered negligible. Upon completion, the works will have a slight beneficial impact for all road users.

It has been determined that the proposed project will not have direct or indirect significant effects to Population and Human Health.

2. Biodiversity

2.1 Impacts

- Japanese knotweed is present on the northbound carriageway verge, out with the works area. Although not likely, there is potential for INNS to have spread into works area;
 - Given the nature of the works and the proximity of the INNS, the potential to encounter and spread Japanese knotweed on site renders the impact to be minor adverse.
- The carriageway at this location features permanent lighting and any additional lighting required for the works is not considered to result in excessive levels of lighting, thus will be unlikely to impact on nearby foraging habits of bat species. In addition, the works are

Description of the main environmental impacts of the project and proposed mitigation:	
	<p>programmed to take place within bat hibernation period (November – May), and as such any impact to nearby bat species is considered to be negligible.</p>
2.2	<p>Mitigation</p> <ul style="list-style-type: none"> On site light sources will be kept to a minimum, and only used as required. Any artificial light shall be directed at the area of works as far as reasonably practicable, reducing any light spill into the wider surroundings, and potentially sensitive habitat (e.g. woodland). If a protected species is seen on or near the scheme, all works will be stopped until the animal passes by. The area of shall be isolated temporarily (if possible) until the animal has moved on; <ul style="list-style-type: none"> The E&S team will be contacted for any guidance if required, and the control room will be contacted for environmental record. Operatives will be advised of the INNS location (refer to the INNS map in Appendix 3). Although unlikely due to position on opposite carriageway verge, there is potential for INNS to have spread to within proximity to the works area; <ul style="list-style-type: none"> INNS plant species shall be left undisturbed and no operatives, plant, machinery or signage for the works will enter or be stored on the boundaries of the carriageway verge in proximity to the identified areas of Japanese knotweed. Rhizome fragments from Japanese knotweed may be present within 7m from the initial growth and therefore care shall be taken. <p>No residual impact is predicted to local biodiversity.</p> <p>It has been determined that the proposed project will not have direct or indirect significant effects to Biodiversity.</p>
3.	<p>Land</p> <p>The works will be kept to the existing M74 carriageway boundary and will not require to or prevent access to private or community land out with the works area. Plant, materials and any temporary storage will be kept to the made carriageway surface only.</p> <p>It has been determined that the proposed project will not have direct or indirect significant effects to land.</p>
4.	<p>Soil</p> <p>The works will be kept to the existing carriageway and soils shall not be impacted.</p> <p>It has been determined that the proposed project will not have direct or indirect significant effects to soil.</p>
5.	<p>Water</p>
5.1	<p>Impacts</p> <ul style="list-style-type: none"> Potential for fuel/chemical spillages through the operation of resurfacing and use of various machinery and vehicles, which may affect the water environment if not effectively controlled. If not appropriately controlled, debris and run off from the works has the potential to enter nearby watercourses and could detrimentally impact water quality.

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

5.2 Mitigation

- Appropriate measures will be implemented onsite to prevent any potential pollution to the natural water environment (e.g. debris, dust and hazardous substances). This shall include, but not be limited to, spill kits being present onsite at all times, the use of funnels and drip trays when transferring fuel, and utilisation of drain covers.
- Visual pollution inspections of the working area will be conducted in frequency, especially during heavy rainfall and wind.
- Debris and dust generated as a result of the works will be prevented from entering nearby watercourses and the road drainage system via the use of drain covers or similar preventative methods.
- All debris which has the potential to be suspended in surface water and wash into the local water environment shall be cleaned from the site following the works.
- 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 residual impact on the local water environment is considered to be neutral.

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

6. Air

6.1 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.
- A temporary 40mph speed limit is in place at the area of depression. Following improvement works, vehicles will no longer be required to increase/decrease speed to comply with current temporary speed reductions due to depression, marginally reducing exhaust particulates.

6.2 Mitigation

The following 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 should be followed:

- All plant and fuel-requiring equipment utilised during construction should be well maintained in order to minimise emissions, as per manufacturing and legal requirements.
- Best practice measures will to be adopted for the duration of the scheme. Best practice measures will include but not be limited to:
 - All plant and fuel-requiring equipment utilised during construction will be well maintained in order to minimise emissions, as per manufacturing and legal requirements;
 - Green driving techniques will be adopted;
 - Route preparation and planning will be undertaken prior to works;
 - When not in use plant and vehicles will be switched off.

The residual impact on air quality is considered to be neutral.

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

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

7. Climate

7.1 Impacts

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

7.2 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 8 Material Assets.

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

8. Material Assets

8.1 Impacts

- Contribution to resource depletion through use of virgin materials.
- Greenhouse gas emissions generated by material production and transporting to and from site.
- Transportation and recovery of planings will require energy deriving from fossil fuel.
- Limited quantity of waste from sweeping will arise requiring disposal.

8.2 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.

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.

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

9. Cultural Heritage

The works will be kept to the existing footprint of the carriageway and will not impact upon any potential features of undiscovered cultural heritage.

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

10. Landscape

The M74 within the scheme extents does not fall within any designation for landscape quality or character.

Views of, and from, the road will be temporarily affected during construction due to the presence of works, traffic management and plant. As the works are operating on a like-for-like basis, no permanent changes to landscape features are predicted.

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

11. Vulnerability of the Project to Risks

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

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

Extent of EIA work undertaken and details of consultation:

The following statutory organisations have been consulted:

- Glasgow City 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 January 2021.

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), since 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 26,000² / 2.6 ha 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, due to smoother ride quality of the carriageway surface.
- 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.

File references of supporting documentation:

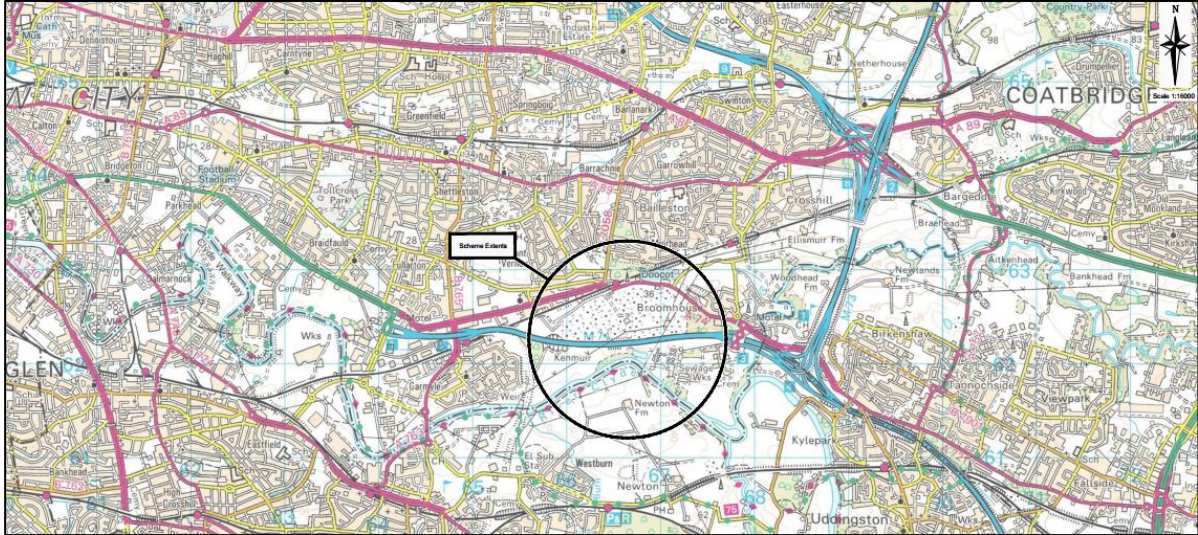
Appendix 1: Scheme location and extent

Appendix 2: Notification to Glasgow City Council Environmental Health Team

Appendix 3: INNS Location Map

APPENDIX 1: SCHEME LOCATION AND EXTENTS

Scheme Location



Scheme Extents

