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# **Record of Determination**

## **M77 Junction 3 Mainline and On- slip Southbound**

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## Project Details

### Description

The proposed works are required to maintain the safety and integrity of the M77 carriageway within the scheme extents. The main driver for the scheme is the ageing surface course, laid in 1996 which is showing chip loss indicating that it has reached the end of its serviceable life. There are also localised lengths of longitudinal cracking.

The works will involve carriageway surface reconstruction utilising TS2010 treatment with exact depths yet to be fully determined. The total area of the works is approximately 14,082m<sup>2</sup>.

- Construction activities will likely include:
- Milling of existing bituminous material by road planer;
- Hand-held jackhammer and compressor for breaking up surfaces not accessible by planer;
- Loader/excavator used to collect and move excess material;
- Base/binder material laid and compressed (where required);
- New bituminous material laid by a paver;
- Material compacted using a heavy roller;
- Mechanical sweeper to collect loose material;
- HGV for removal and replacement of material; and,
- Road markings replaced.

Works have been programmed for January 2022 and will take place over several nightshifts. The type of traffic management (TM) has yet to be fully determined, however road closures are anticipated.

Glasgow City Council were notified of the upcoming works on the 6<sup>th</sup> of September 2021.

### Location

The works are located on the M77 southbound carriageway at junction 3, within Glasgow City. The works have the following National Grid References:

Scheme Start: NS 53671 59399

Scheme End: NS 53456 58230

Figure 1 - Scheme Location

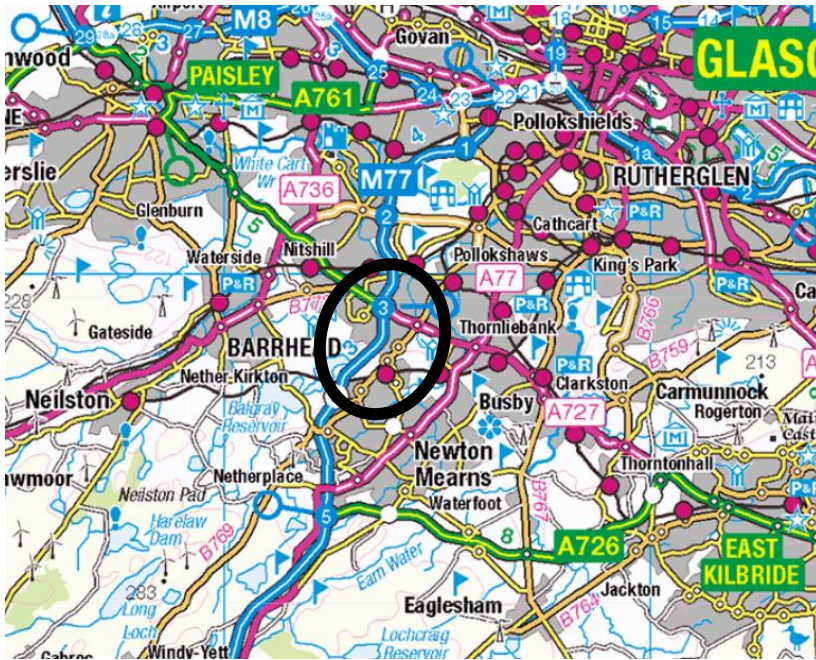
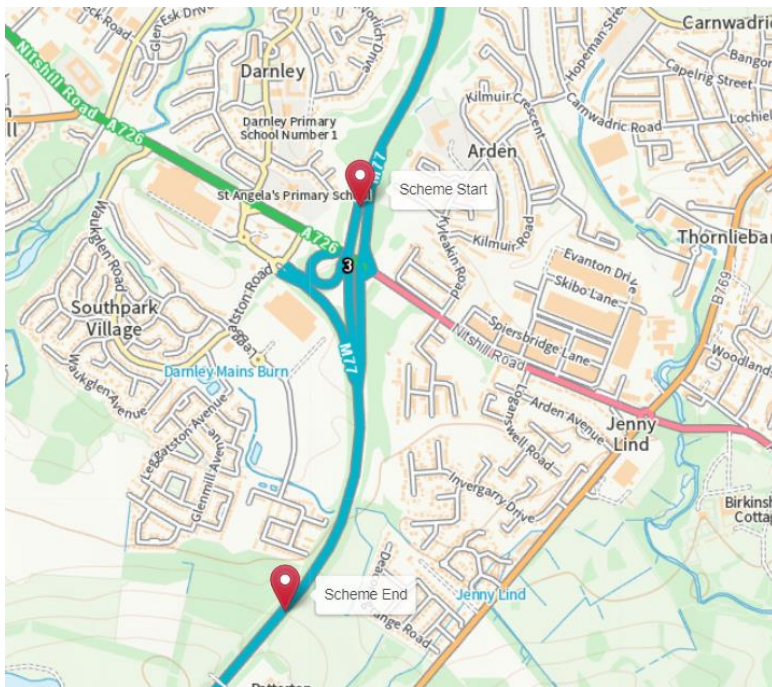


Figure 2 - Scheme Extents



## Description of Local Environment

### Population and Human Health

This section of the M77 is an urban motorway, with surrounding residential and industrial areas. Residential properties in the area Jenny Lind are located within proximity to the works, with the closest properties situated at a distance of approximately 85m from the carriageway.

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

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

The Annual Average Daily Traffic Flows (AADT, 2019) at this location is 29,395 approximately 15% of which consists of Heavy Goods Vehicles (HGVs).

No non-motorised provisions exist within the scheme extents.

## Biodiversity

The works are located on an urban stretch of the M77, with the surrounding environment being primarily made up of residential and industrial area. A small area of woodland can be found adjacent to the southbound (SB) carriageway at the northern point of the scheme, which runs south and opens into a small maintained area of grassland. A second small area of woodland can be found adjacent to the opposite side of the carriageway.

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

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

Given the lack of suitable habitat in close proximity to the scheme, coupled with the highly urbanised surrounding area and lack of recent roadkill records, a site survey was deemed unnecessary for the works.

## Land

This section of the M77 is an urban motorway consisting of 2 and 3 lanes, each estimated 3.8m wide with hard shoulder.

On site work activities will be confined within the M77 carriageway boundary and will not require access over any private or community land.

Historic Environment Scotland's [HLAMap](#) has highlighted the following surrounding landscapes:

- Motorway and Major Roads;
- Rectilinear Fields and Farm;
- Recreation Area;
- Industrial or Commercial Area;
- Urban Area; and,
- Managed Woodland.

The M77 runs through the boundary of the Dams to Darnley Country Park at this location.



The works benefit from permitted development status under Class 31 of the Town and Country Planning (General Permitted Development) (Scotland) Order 1992 as amended. As a result, no formal planning requirements are necessary.

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

## Soil

The [National Soil Map of Scotland](#) has identified the surrounding local soils to consist of non-calcareous mineral gleys.

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

### Bedrock

Upper Limestone Formation - Sedimentary Rock Cycles, Clackmannan Group Type. Sedimentary Bedrock formed approximately 324 to 329 million years ago in the Carboniferous Period. Local environment previously dominated by swamps, estuaries and deltas.

### Superficial

Till, Devensian - Diamicton. Superficial Deposits formed up to 2 million years ago in the Quaternary Period. Local environment previously dominated by ice age conditions.

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

## Water

The [Scottish Environment Protection Agency's Water Classification](#) Hub has not identified any major waterbodies within close proximity to the works.

The [Indicative River & Coastal Flood Map](#) by SEPA has highlighted areas of surface water flood risk within the scheme extents.

Drainage is provided by top entry gullies in the hard shoulder with filter drain throughout the mainline and slip road.

## Air

The works are located on an urbanised stretch of the M77 carriageway surrounded primarily by residential and industrial areas. The closest residential properties are situated approximately 85m from the carriageway.

The Annual Average Daily Traffic Flows (AADT, 2019) at this location is 29,395 approximately 15% of which consists of Heavy Goods Vehicles (HGVs).

The works are not located within an [Air Quality Management Areas](#) declared by Glasgow City Council.

## 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<sub>2</sub> 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

Table 1 – Key Materials Required for Activities

Activity	Material Required	Origin/ Content
Site Construction	<ul style="list-style-type: none"> <li>• TS2010 surface course</li> <li>• AC32 Base</li> <li>• AC20 Binder</li> <li>• Bitumen</li> <li>• Road paint</li> <li>• Road studs</li> </ul>	<p>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.</p> <p>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.</p>



## Waste

Table 2 – Key Waste Arising from Activities

Activity	Waste Arising	Disposal/ Regulation
Site Construction	<ul style="list-style-type: none"> <li>• Road planings</li> <li>• Old studs</li> </ul>	<p>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.</p> <p>Presence of tar should be confirmed prior to the commencement of the works.</p> <p>If testing does not identify any coal tar within the scheme extents, 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>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.</p>

## Cultural Heritage

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

## Vulnerability of the Project to Risks

The works will take place on the existing man-made carriageway structure. Works will involve like-for-like resurfacing, with no major changes to the structure.

Currently, the M77 at this location is not vulnerable to any major specific risk.

SEPA's Flood Maps has identified areas of surface water flood risk.

## 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.
- Traffic management may result in local delays.
- 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 noise levels.

#### Mitigation

- Glasgow City Council's Environmental Health Department have been notified of the works by the E&S Team.
- Residential properties in proximity should be notified in advance of the works, providing details of timings, nature, and duration of the works, as well as any potential access restrictions.
- Advanced warning signs should be put in place to notify drivers of the upcoming closures and diversion route.
- Operatives must be briefed with the Noise and Vibration toolbox talk before starting works.
- Effects from noise should be kept to a minimum through the use of appropriate mufflers and silencers fitted to machinery. All exhaust silencers should be checked at regular intervals to ensure efficiency.
- The noisiest works should be scheduled for before 11:00pm if feasible.

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

It has been determined that the proposed project will not have direct or indirect significant effects to local population and human health.

### Biodiversity

#### Impacts

- Additional on-site lighting may impact nearby nocturnal species.

## Mitigation

- Artificial site lighting should be kept directional to the works area and switched off when not in use.

Providing all works adhere to best practice and mitigation measures, no impact is predicted to local biodiversity.

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

## 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; and,
- Flooding/adverse weather may impact the scheme extents, resulting in delays.

### Mitigation

- Spill kits will be readily available on site at all times;
- Visual pollution inspections of the working area will be conducted in frequency, especially during heavy rainfall and wind;
- Weather reports shall be monitored prior and during all construction activities. In the event of adverse weather / flooding events, all activities should temporarily stop, and only reconvene when deemed safe to do so, and run-off / drainage can be adequately controlled to prevent pollution.

Best practice, as detailed by SEPA's Guidance for Pollution Prevention (GPPs), will always be adhered to onsite. The residual impact for the water environment is considered neutral.

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

## 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.

- Diversion route, if required, is likely to increase traffic levels and associated emissions within local road networks.

## Mitigation

All works shall operate in accordance with current best practice as outlined in the Guidance on the assessment of dust from demolition and construction (2014) published by the IAQM, which includes the following mitigation relevant to this scheme:

- When not in use plant and 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.
- Drop heights to haulage vehicles and onto conveyors will be minimised.
- Lorries will be sheeted when carrying dry materials.
- Surfaces will be swept where loose material remains following planing.

Providing all works operate in accordance with current best practice, the residual impact for local air quality is considered neutral.

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

## Climate Change

### Impacts

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

### Mitigation

- Where possible local suppliers will be used as far as practicable to reduce travel time and greenhouse gas emitted as part of the works.
- Vehicles / plant shall not be left on when not in use to minimise and prevent unnecessary emissions being emitted.
- Further actions and considerations for this scheme are detailed in section 8 Material Assets and Waste.

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,
- The design life for the TS2010 surfacing proposed is estimated to be 20 years. This will reduce the requirement for maintenance to this section of road over the period.

### Mitigation

- Materials will be derived from recycled, secondary or re-used origin as far as practicable within the design specifications to reduce natural resource depletion.

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

## Waste

### Impacts

- Presence of tar should be confirmed prior to the commencement of the works.
- Contribution to resource depletion through use of virgin materials,
- Production of road planings that may contain coal tar.
- Greenhouse gas emissions generated by material production and transporting to and from site,
- The design life for the TS2010 surfacing proposed is estimated to be 20 years. This will reduce the requirement for maintenance to this section of road over the period.

### Mitigation

- 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.
  - A SEPA consignment note is required.
  - SEPA are to be informed at least three days prior to the movement of special waste.

- If testing does not identify any coal tar within the scheme extents, 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'.

## **Vulnerability of the Project to Risks**

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

It has been determined that the proposed project is not expected to alter the vulnerability of the existing trunk road infrastructure to risk of major accidents or disasters.

## **Cumulative Effects**

There are no other schemes close to this which will contribute to a cumulative impact on the environment.

## **Assessments of the Environmental Effects**

Glasgow City Council were notified of the upcoming works on the 6<sup>th</sup> of September 2021.

With mitigation measures in place, it has been determined that the project will not have direct or indirect significant effects to the assessed environmental factors.

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

This is a relevant project in terms of section 55A(16) of the Roads (Scotland) Act 1984 as it is a project for the improvement of a road and the completed works (together with any area occupied by apparatus, equipment, machinery, materials, plant, spoil heaps, or other such facilities or stores required during the period of construction exceed 1 hectare in area, however 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 14,082<sup>2</sup> (1.4ha) 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 stone mastic asphalt (SMA).
- Uncontaminated road planings will be fully recycled in accordance with Guidance on the Production for Fully Recovered Asphalt Road Planings.
- If required, special waste will be disposed of in line with guidance.
- 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).
- The works benefit from permitted development status under Class 31 of the Town and Country Planning (General Permitted Development) (Scotland) Order 1992 as amended. As a result, no formal planning requirements are necessary.

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.



## 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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