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Environmental Impact Assessment Record of Determination

M74 Junction 11-12 Southbound

Contents

Project Details

Description

The works are required to maintain the safety and integrity on a stretch of the M74 carriageway southbound from junction 11-12. It is currently exhibiting various areas of cracking, crazing and potholes observed throughout the carriageway.

The construction work will involve replacement of old and deteriorating surface course of the southbound carriageway between junction 11-12 of the M74. The scheme covers an approximate area of 21,157$m^{2.}$ The scheme has been broken into three sections, Sections 1 and 3 will involve standard resurfacing works, Section 2 will involve crack and seat repair works.

The treatment will consist of a surface course replacement using TS2010 material with isolated deeper inlays being utilised, should any structural defects be identified. The requirement for high friction surfacing (HFS) will be examined, and re-applied where necessary.

The proposed works will entail the following general construction activities:

- Implementation of Traffic Management (TM);
- Milling of existing bituminous material by road planer;
- Additional bituminous material removed by jack hammer/excavator, where not accessible by planer;
- Road sweeper to collect any loose material;
- HGV for removal and replacement of material;
- Tack/bond coat applied;
- New bituminous material laid by a paver;
- Material compacted using a heavy roller;
- New road markings/HFS applied where needed;
- Road studs replaced where necessary; and
- Removal of TM.

A programme of works is still to be confirmed; however, works are likely to begin in August 2023 and will likely consist of daytime and overnight working.

TM will likely consist of a contraflow system on both SB and NB carriageways.

Location

The works are located on the M74 motorway between junction 11-12 of the southbound (SB) carriageway, within the rural setting of South Lanarkshire. The scheme has the following National Grid References (NGR):

- Scheme Start: NS 84676 34709
- Scheme End: NS 85752 32819

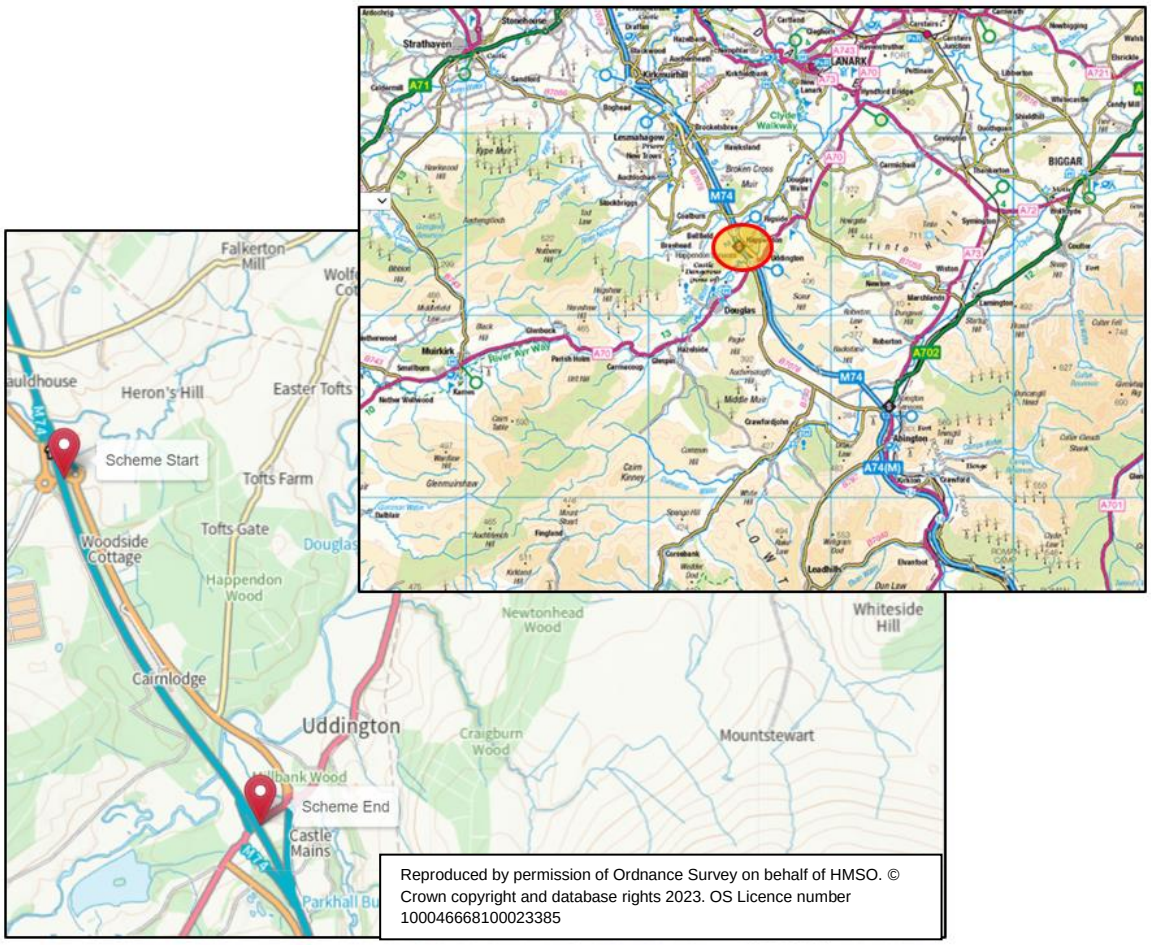

Figure 1: Scheme Location

Description of local environment

Air quality

The M74 is one of the busiest motorways in Scotland and as such, the air quality at this location is likely primarily affected due to the high daily use of the carriageway by road vehicle users.

In 2021, the Annual Average Daily Flow (AADF) for all vehicles on the M74 where works are to be undertaken (manual count point 80203) was 25,571 with 6,629 of those being HGVs.

South Lanarkshire Council have declared three Air Quality Management Areas (AQMA) including:

- Whirlies Roundabout AQMA;
- Lanark AQMA; and,

- Rutherglen AQMA.

However, the scheme is not located within any of the declared AQMAs.

Cultural heritage

A desktop study using PastMap has not identified any features of cultural heritage within 300m of the scheme.

All works will be located within the existing M74 carriageway boundary and will have no impact on any known or potential features of undiscovered cultural or archaeological heritage.

Landscape and visual effects

A desktop study using PastMap and NatureScot Sitelink online interactive map has not highlighted any areas designated for landscape character within or in close proximity to the works location.

The 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.

Works will be restricted to the existing carriageway boundary and will not impact upon the surrounding landscape. As such, impact to local landscape has been assessed as being 'no change' and has been scoped out of requiring further assessment.

Biodiversity

The works are located in a rural setting within South Lanarkshire, surrounded by agricultural land, small areas of woodland and residential, commercial and industrial properties.

Transport Scotland's Asset Management Performance System (AMPS) has not identified any Invasive Non-Native Species (INNS) within 500m of the scheme extents.

Amey's South West Environmental Database has not identified any INNS within 500m of the scheme extent.

A desktop study using NatureScot SiteLink has identified Coalburn Moss Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) which is designated for its raised bogs, approximately 1.8km north west from the northern scheme extent.

Geology and soils

All works will be limited to the existing carriageway surface and will not impact on surrounding local soils and therefore has been scoped out for further assessment.

There are no designated geological features within 500m of the scheme.

Material assets and waste

Table 1: Key Materials Required for Activities

Activity	Material Required	Origin/ Content
Site Construction	• Road surfacing (aggregate and binder) • Bitumen • Road paint • Lubricant • Vehicle fuel • Oil	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.

Table 2: Key Waste Arising from Activities

Activity	Waste Arising	Disposal/ Regulation
Site Construction	• Asphalt planings • Road Studs	On-site investigations of the carriageway (including coring and testing) have been undertaken and did not highlight the presence of any coal tar. Road planings generated as a result of the works will be recovered in accordance with the criteria stipulated within SEPA document 'Guidance on the Production of Fully Recoverable Asphalt Road Planings'. Road studs will be recycled and reused where possible.

Noise and vibration

There are two residential properties within 300m of the scheme, Castle Mains is located approximately 270m southeast of the southern scheme extent and Thorniehall Farm located approximately 210m northeast of the northern scheme

extent; there are large areas of trees and woodland screening the properties from the road.

Scotland's Noise Map notes that noise levels along the M74 where works are to be undertaken range between 70-<80dB during daytime hours and range between 65-<75dB during night-time hours.

The works do not fall within a Candidate Noise Management Areas (CNMA).

The key noise source within the area is the M74 itself and noise associated with vehicles.

Population and human health

The works are located in a rural setting within South Lanarkshire, surrounded mostly by agricultural land, small areas of woodland and residential, commercial and industrial properties.

Cairn Lodge Services are located approximately 40m east of the southbound carriageway.

A number of core paths exist within proximity to the scheme but are not linked to the M74 carriageway.

National cycle route 74 runs adjacent to the M74 carriageway for the full scheme extent but is not within the carriageway.

Road drainage and the water environment

Scottish Environment Protection Agency (SEPA) Water Classification Map has identified Douglas Water a river (ID: 10094), which flows beneath the M74 carriageway and has been classified as being in 'good' condition. The SEPA Flood Risk Map notes that Douglas Water has a 'high-risk' of river flooding which encroaches onto the M74 where works are to be undertaken. High-risk river flooding is defined as the area having a 10% chance of flooding each year.

SEPA Water Classification Map has identified Poniel Water, a river (ID: 10097) which flows beneath the M74 carriageway approximately 330m north of the northern scheme extent and has been classified as being in 'moderate' condition. Poniel Water has a 'high-risk' of river flooding.

Climate

Carbon Goals

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).

The Scottish Government has since published its indicative Nationally Determined Contribution (NDC) to set out how it will instead reach net-zero by 2045, working to reduce emissions of all major greenhouse gases by at least 75% by 2030. By 2040, the Scottish Government is committed to reduce emissions by 90%, with the aim of reaching net-zero by 2045 at the latest.

Transport Scotland is committed to reducing carbon across Scotland's transport network, this commitment is being enacted through the Mission Zero for Transport. Transport is the largest contributor to harmful climate emissions in Scotland. In response to the climate emergency, TS are committed to reducing their emissions by 75% by 2030 and to a legally binding target of net-zero by 2045.

Amey's Company Wide Carbon Goal is to achieve Scope 1 and 2 net-zero carbon emissions, with a minimum of 80% absolute reduction on our emissions by 2035. Amey is aiming to be fully net-zero, including Scope 3 emissions, by 2040.

Amey are working towards a contractual commitment to have carbon neutral depots on the SW NMC network by 2028. Amey have set carbon goals for the SW NMC contract as a whole to be net-zero carbon by 2032.

Monitoring, Management and Opportunities

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.

Further information identifying how Amey will obtain the above Carbon Goals can be viewed within the Carbon Management and Sustainability Plan Roadmap to net-zero: STRNMC – South West.

Description of main environmental impacts and proposed mitigation

Air quality

Impacts

- Traffic management may increase congestion and emissions for the surrounding local environments.
- On site construction activities carry a potential to produce airborne particulate matter and emissions that may have a slight impact on local air quality levels.

Mitigation

The following best practice as outlined in the Guidance on the assessment of dust from demolition and construction (2014) published by the Institute of Air Quality Management (IAQM), which includes the following mitigation relevant to this scheme will be followed:

- All vehicles will switch off engines when stationary; there will be no idling vehicles.
- All plant and fuel-requiring equipment utilised during construction will be well maintained in order to minimise emissions.
- Planing operations will be wetted to reduce dust arising.
- Drop heights to haulage vehicles and onto conveyors will be minimised where practicable.
- Lorries will be sheeted when carrying dry materials.
- Surfaces will be swept where loose material remains following planing.

The residual significance of effects is considered not significant and does not warrant any further assessment in accordance with DMRB Guidance document LA 105: Air Quality.

Biodiversity

Impacts

- There is potential for protected species to be active in proximity to the construction works.
- Increase in night-time noise may result in temporary disturbance/nuisance for nocturnal species if active in proximity.

- Any additional lighting used may affect the foraging or commuting habits of nocturnal species in proximity to the works.
- An Initial Stage 1 HRA Pre-Screening was undertaken and no likely significant effects (LSE) were expected to occur on the SAC and SSSI as a result of the works.

Mitigation

- In the event of night-time programming where lighting is required, hoods will be used and lights directed at works and away from ecological receptors including any watercourses, to minimise disturbance to nocturnal species.
- In the event that protected species is noticed on site, works will temporarily be suspended until the animal has moved on. Any sightings will be reported to the E&S Team.
- Vehicles and materials will not be stored or parked on grass verges where possible. Where damage occurs, the reinstatement of the grass verge will be carried out.
- In the event that an INNS is identified on site, all works must temporarily stop and the environment team contacted.

On the condition that the above mitigation measures and best practice are adhered to, the residual effect on local biodiversity is considered not significant.

Therefore, in accordance with DMRB Guidance document LA 108: Biodiversity, no further assessment is required.

Material assets and waste

Impacts

- 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.
- The works will result in contribution to resource depletion through use of virgin materials.
- Transportation and recovery of materials/waste will require energy deriving from fossil fuel, a non-renewable source.

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 and associated emissions.

- The contractor will adhere to waste management legislation and ensure they comply with waste management Duty of Care.
- Uncontaminated road planings arising from the works will be fully recycled under a SEPA Paragraph 13(a) Waste exemption in accordance with guidance on the Production for Fully Recovered Asphalt Road Planings.
- All waste leaving the site must be removed from site by a licence waste carrier. All waste documentation must be provided when requested.
- Use of TS2010 will reduce the usage of imported aggregates and increase the use of a wider range of sustainable aggregate sources thus reducing Green House Gas (GHG) emissions.
- Where possible, materials will be obtained locally, and operatives deployed from the local depot to reduce haulage and scheme associated journeys, reducing impact of associated GHG emissions.
- Where possible all materials will be reused throughout the network, if not possible they will be recycled locally. Not all materials will be able to be reused/recycled and will require landfilling.
- The use of TS2010 Surface Course will prolong the period before future resurfacing is required, compared to other types of road surface. Future repairs can be able to be carried out easily via inlay.

With best practice mitigation measures in place, the residual significance of effect on material assets and waste is considered to be neutral. Therefore, in accordance with DMRB Guidance document LA 110: Material Assets and Waste, no further assessment is required.

Noise and vibration

Impacts

- Works are likely to result in increased noise compared to baseline levels during construction works. There is potential for residential properties in proximity to experience a level of disturbance (including sleep disturbance) due to increased noise during night-time works.

Mitigation

- Effects from noise will be kept to a minimum through the use of appropriate mufflers and silencers fitted to machinery. All exhaust silencers will be checked at regular intervals to ensure efficiency.
- The noisiest works will be scheduled for before 11:00pm if feasible.
- Operatives will avoid extraneous noise whilst on site and will be briefed using the Amey Noise and Vibration Briefing.

- South Lanarkshire Council Environmental Health team were notified due to night-time programming.

With best practice mitigation measures in place, the residual construction effects associated with Noise and Vibration is considered not significant.

Therefore, in accordance with DMRB Guidance document LA 111: Noise and Vibration no further assessment is required.

Population and human health

Impacts

- TM has potential to cause slight levels of disruption to road users (i.e., increased travel times).
- Access or use of Core paths or the National cycle route 74 are not likely to be restricted.

Mitigation

- Advance signage will be put in place to notify drivers of the upcoming TM arrangements/ restrictions.
- TM restrictions/arrangements and any expected travel delays will be publicised within the local and wider area, in an effort to minimise disturbance to vehicular travellers.

With best practice mitigation measures in place, the residual construction effects associated with Population and Human Health is considered not significant.

Therefore, in accordance with DMRB Guidance document LA 112: Population and Human Health no further assessment is required.

Road drainage and the water environment

Impacts

- There is potential for debris to enter drainage system if not effectively managed, which may affect the water environment and quality.
- There is potential for fuel/chemical spillages through use of various machinery and vehicles, which may enter the drainage system and affect the water environment if not effectively controlled.
- Adverse weather may result in unsuitable working conditions. In the event of flooding, works may be delayed.

Mitigation

- Weather reports will be monitored prior to and during the works with all construction activities temporarily halting in the event of adverse weather/flooding event. The works will only continue when it is deemed safe to do so and run-off/drainage can be adequately controlled to prevent pollution.
- Appropriate measures will be implemented onsite to prevent any potential pollution to the natural water environment (e.g., debris, dust and hazardous substances). This will include spill kits being present onsite at all times, the use of funnels and dip trays when transferring fuel.
- Debris and dust generated as a result of the works will be prevented from entering the drainage system (this can be via the use of drain covers or similar). Visual pollution inspections of the working area will be conducted in frequency, especially during heavy rainfall and wind.
- All debris which has the potential to be suspended in surface water and wash into the local water environment will be cleaned from the site following the works.
- Any plant/ equipment wash-out will be in a contained area away from surface water drains and channels to prevent pollution. Where possible, washout water will be stored and reused.

Providing all works operate in accordance with current best practice, as demonstrated by the Scottish Environmental Protection Agency's (SEPA's) GPPs, the residual effect on Road Drainage and the Water Environment is considered not significant.

Therefore, in accordance with DMRB Guidance document LA 111: Road drainage and the water environment no further assessment is required.

Climate

Impacts

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

Mitigation

- Local suppliers will be used as far as reasonably practicable to reduce travel time and GHG emitted as part of the works.
- Vehicles/plant will 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 the above Material assets and waste section.

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

Vulnerability of the project to risks

As the works will be limited to the like-for-like resurfacing of the carriageway, there will be no change in vulnerability of the road to risk, or in 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.

Assessment cumulative effects

The Scottish Road Works Commissioner's Interactive Map notes there are no ongoing works during the proposed timescale and location of the proposed works.

Amey's current programme of works has not highlighted any ongoing works during the proposed timescale and at the location of the proposed works.

South Lanarkshire Council's Planning Portal has not highlighted any ongoing works during the proposed timescale and at the location of the proposed works.

Any future schemes will be programmed to take into account already programmed works, and as such any effect (such as from TM arrangements and potential construction noise) will be limited.

Overall, it is unlikely the proposed works will have a significant cumulative effect with any other proposed works in the local area.

Assessments of the environmental effects

Following assessment as detailed within this Record of Determination, and provided that mitigation measures are in place and best practice is followed, the residual impact is deemed neutral and there will be no significant effects on the environment.

The following environmental surveys/reviews have been undertaken:

- An Initial Environmental Review of the scheme, undertaken by the Environment and Sustainability Team at Amey in June 2023.
- Initial Stage 1 HRA Pre-Screening undertaken by Amey Ecologists in June 2023.

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.

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 approximate 21,157m^2 area of existing carriageway.
- The works will be temporary, localised, and completed potentially during both daytime and night-time hours.
- Containment measures of the working area will be in place to prevent debris or pollutants from entering the surrounding water environment.
- No disturbance is anticipated to protected species within the wider area.
- At end of life, components can be recycled, reducing waste to landfill.

- Any uncontaminated road planings will be recycled in accordance with Guidance on the Production for Fully Recovered Asphalt Road Planings.
- 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.
- The design option conveys sustainability benefits by significantly reducing the quantity of maintenance interventions required at the location.

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 located within a sensitive area as defined in Annex A

Characteristics of potential impacts of the scheme:

- As the works will be limited to the like-for-like replacement of the structural components, there is no change to the vulnerability of the road to the risk or severity of major accidents/disasters that would impact on the environment.
- The successful completion of the scheme will afford benefits to carriageway users and residential properties in proximity, due to improved condition and ride quality of the carriageway surface.
- No impacts on the environment are expected during the operational phase as a result of works. 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 will 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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