

Environmental Impact Assessment Record of Determination

A701 Locharbriggs to Amisfield

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Project Details

Description

The scheme is required to remove the defects identified in the visual condition survey and coring investigation. These predominately consist of fretting and crazing throughout the scheme with sacrificial patching and longitudinal cracking present. By removing the defects and providing this section of the A701 with another life cycle, the ride quality of the carriageway will be significantly improved which will result in safer conditions for road users.

The scheme will require the following construction activities:

- Set up traffic management (TM) and mark out site;
- Milling of existing bituminous material by road planer;
- Jackhammer and compressor for breaking up surfaces not accessible by planer (e.g. around gullies);
- Loader/excavator used to collect and move excess material;
- Sweeper to collect loose material and provide clean laying surface;
- Milled out/excavated materials all taken off site;
- Tack/bond coat laid;
- Binder material laid and compressed by paver (where required);
- Material compacted using a heavy roller;
- New bituminous surface course material laid by paver;
- Material compacted using a heavy roller;
- Mechanical sweeper to collect loose material;
- Heavy Goods Vehicle (HGV) for removal and replacement of material;
- Road markings and studs applied where necessary (in accordance with Chapter 5);
- Remove TM and open road.

The total approximate works area is 1.4 hectares.

The works are currently expected to take place in March 2023 with an exact date yet to be confirmed. The works will take place over seven nights.

Traffic management (TM) will be required during the entirety of the construction activities. TM will consist of a full road closure with a diversion in place over seven nights. The diversion route is yet to be confirmed.

Location

The scheme is located in a rural area of Dumfries and Galloway to the north of Dumfries between Locharbriggs and Amisfield. The start/end co-ordinates are detailed below.

Start: 299357,580627

End: 300076,582372



Figure 1 - Scheme Location

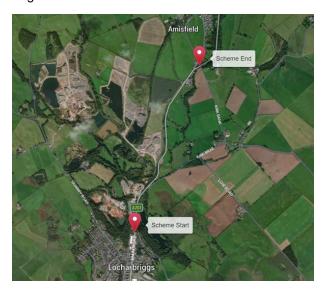


Figure 2 - Scheme Extents

Description of local environment

Air quality

The scheme lies in a rural location along the A701 to the north of Dumfries, between Locharbriggs and Amisfield. This stretch of the carriageway is predominately surrounded by agricultural fields. Over thirty residential properties- are located within 200m of the scheme extents, the majority of which are located within Locharbriggs to the south and Amisfield to the north. The closest properties lie immediately on the roadside of the A701.

The Average Annual Daily Flow (AADF) in 2020 for the A701 carriageway south of the site is 4391 vehicles, with 12.1% heavy goods vehicles (HGVs).

The scheme location does not fall within an <u>Air Quality Management Area</u> (AQMAs) declared by Dumfries and Galloway Council.

Cultural heritage

A desktop study using <u>Pastmap</u> has identified the following features of cultural heritage within 300m of the works:

- Tinwald Old Manse and Flanking Wings (Listed Building, Category C, Ref: LB17243, approx. 300m to the east); and
- Tinwald Parish Manse (Listed Building, Category B, Ref LB17242, approx. 200m to the east).

The works will be restricted to the existing A701 carriageway and will have no impact to these nearby features. All works will be located within the existing carriageway boundary and will not impact any areas of land that have not previously been subjected to engineering activity.

As such, impact has been assessed as being 'no change' and has been scoped out of requiring further assessment.

Landscape and visual effects

A desktop study using <u>NatureScot Sitelink</u> and <u>Pastmap</u> online interactive map has not highlighted any areas designated for landscape character within 300m of the works.

Historic Environment Scotland's <u>HLAMap</u> has highlighted the surrounding landscape to consist of a combination of fields, farmland, urban areas and managed woodland.

Works will be restricted to the existing carriageway boundary and will not impact upon the surrounding landscape. 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.

As such, impact to local landscape has been assessed as being 'no change' and has been scoped out of requiring further assessment.

Biodiversity

The scheme is located in a rural area of Dumfries and Galloway. The surrounding area is primarily made up of agricultural land and woodland.

A desktop study using <u>NatureScot Sitelink</u> indicates that there are no Natura 2000 sites located within 2km of the scheme extents. Locharbriggs Quarry Site of Special Scientific Interest (SSSI) lies approximately 275m to the west of the scheme. The site has been designated for geological reasons (fossilised windblown sand dunes of Permian Triassic age).

Amey's Invasive Non-native Species (INNS) Database has not identified any invasive plant growths within the scheme extent.

Geology and soils

The National Soil Map of Scotland has identified the local soil type as brown soils.

A desktop study using the <u>British Geological Survey Map</u> identifies the local geology types as the following:

Bedrock Geology

 Carghidown Formation - Wacke and mudstone. Sedimentary bedrock formed between 443.8 and 433.4 million years ago during the Silurian period.

Superficial Deposits

- Langholm Till Formation Diamicton. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period.
- Alluvium Sand, silt and clay. Sedimentary superficial deposit formed between 11.8 thousand years ago and the present during the Quaternary period.

- Langholm Till Formation Diamicton. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period.
- Kirkbean Sand and Gravel Formation Sand and gravel. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period.
- Gretna Till Formation Diamicton. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period.

As a result of the works taking place entirely within the existing man-made footprint, it has been determined that the proposed project does not carry the potential to cause direct or indirect impact to geology or soils. As such, impact has been assessed as being 'no change' and has been scoped out of requiring further assessment.

Material assets and waste

Table 1.1 Key materials required for scheme

Activity	Material Required	Origin/ Content
Site Construction	 TS2010 surface course AC32 Base AC20 Binder Bitumen Road paint Road 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.

Table 1.2 Key waste created by scheme

Activity	Waste Arising	Disposal/Regulation
Site Construction	• Road planings	On-site investigations did not highlight presence of any tar-containing material within any cores taken from within the scheme extents.
	StudsRoad kerbs	As such, all 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'.

Noise and vibration

The works are located on a rural stretch of the A701 carriageway north of Dumfries, between Locharbriggs and Amisfield. The works are surrounded primarily by agricultural land. A number of residential properties are located close to the A701 carriageway within Locharbriggs and Amisfield. The closest properties lie immediately on the roadside of the carriageway which contain little or no screening from the road.

Baseline noise level are likely primarily influenced by vehicle traffic from the carriageway, with secondary sources including activity from nearby urban and agricultural activities.

The AADF in 2020 for the A701 carriageway south of the site is 4391 vehicles, with 12.1% heavy goods vehicles (HGVs).

The works do not fall within a <u>Candidate Noise Management Areas (CNMA)</u> as defined by the Transportation Noise Action Plan, Road Maps.

Population and human health

The works are located to the north of Dumfries between Locharbriggs and Amisfield. The A701 carriageway is at this point is surrounded by Locharbriggs to the south, Amisfield to the north and agricultural land between the two settlements. A number of residential properties lie within Locharbriggs and Amisfield. A small number of properties also lie on the A701 roadside within the scheme extents.

The AADF in 2020 for the A701 carriageway north of the site is 4391 vehicles, with 12.1% HGVs.

The A701 carriageway is the main connecting route between Dumfries and the M74 motorway which links to the north and beyond.

There is one Walker, Cyclist or Horse Rider (WCH) route located within the scheme extents:

• Locharbriggs Quarry Jericho Loch Core Path; this path runs to the immediate east of the A701 within the scheme extents adjacent to Jericho Loch.

In addition to the core path, there are paved footways adjacent to both the northbound and southbound carriageways within Amisfield.

There are no bus stops located within the scheme extents, however one bus stop lies within Amisfield, directly to the north of the works.

Road drainage and the water environment

A desktop study using the Scottish Environment Protection Agency (SEPA) River Basin Management Plan Map has identified that the following watercourses flow within 300m of the scheme:

- Amisfield Burn (ID 10638): This watercourse flows immediately adjacent to the A701 for the majority of the scheme extents. The watercourse has been classified under the Water Framework Directive (WFD) has having an overall status of moderate ecological potential.
- Jericho Loch: This loch lies approximately 30m to the east of the A701 within the scheme extents. It has not been classified under the WFD.

The following groundwater bodies lie below the scheme:

- Tinwald (150540): WFD status of good.
- Lochar Water Sand and Gravel is a groundwater (ID: 150728): WFD status of good.
- Lochar Moss (ID:150576): WFD status of good.

SEPA <u>Indicative River & Coastal Flood Map</u> has highlighted that there is a high risk of surface water flooding (10% chance of occurrence in any one year) along the floodplain of the Amisfield Burn that flows within 300m of the scheme.

Road drainage is provided by a combination of side and top entry gullies and filter channel drainage throughout the scheme, likely out falling into the adjacent Amisfield Burn.

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 CO₂ 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 (GHG) 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 is 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) undertakes 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

- Construction activities such as excavations for the new resurfacing, carry a
 potential to produce airborne particulate matter which could lead to a temporary
 decrease in local air quality.
- Emissions from construction plant and machinery also have the potential to contribute to a temporary decrease in local air quality.
- Traffic management will involve a diversion route which could subsequently lead to decreases in local air quality for the surrounding road network due to increase traffic flows.

The impacts identified will be temporary for the duration of the works only and therefore no change is predicted on air quality.

Mitigation

- All works shall operate in accordance with current best practice as outlined in the <u>Guidance on the assessment of dust from demolition and construction</u> (2014) published by the IAQM, which includes the following mitigation relevant to this scheme:
 - When not in use plant and vehicles 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 air is considered no change.

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

Biodiversity

Impacts

- Due to the rural surrounding, it is possible that protected species will be active in the works area.
- Lighting is not present throughout the majority of scheme extents. As such, the addition of temporary site lighting for the works has the potential to affect the foraging or commuting routes of nocturnal protected species which may be active in the surrounding area.

Mitigation

- If a protected species is seen on or near the scheme, all works will be stopped until the animal passes by. The protected species will not be approached and the area will be temporarily isolated until the animal has moved on.
- Amey's environmental briefings will be delivered to operatives prior to the start of construction.
- The E&S team will be contacted for any guidance if required, and the control room will be contacted for environmental record.
- On site light sources will be kept to a minimum, and only used as required.
- When in use, any artificial light will 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).
- The scheme is not expected to include vegetation removal. Should the scope of the works change, the environment team will be consulted.

On the condition that best practice is adhered to, residual impact to local biodiversity is considered no change as a result of the works.

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

Material assets and waste

Impacts

 The works may result in contribution to resource depletion through use of virgin materials.

- Greenhouse gas (GHG) emissions will be generated by material production and transporting to and from site.
- 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.
- 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.'

Temporary impact during construction is considered negligible adverse, with residual impact considered no change.

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

Noise and vibration

Impacts

 There is potential that the works will be undertaken during both daytime and night-time programming. As such, any residential properties in close proximity may experience temporary disturbance due to an increase in baseline noise and vibration levels.

Mitigation

- Due to the planned night works, Dumfries and Galloway Council will be notified in advance of the works. This will be undertaken by the Environment & Sustainability Team.
- Effects from noise should 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.
- Operatives will avoid extraneous noise on site (i.e., shouting, music, slamming of doors etc.)
- The noisiest works will be scheduled for before 23:00, where practicable.
- Operatives will be briefed with the Noise and Vibration toolbox talk before starting works..

Provided that best practice measures are followed, it is predicted that residual impact from noise will be negligible beneficial, with temporary minor adverse impact predicted during construction.

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

Population and human health

Impacts

- Timings are yet to be confirmed, however there is potential for works to be undertaken during both daytime and night-time programming. As such, any residential properties in close proximity may experience temporary disturbance due to an increase in baseline noise and vibration levels, as well as light pollution.
- The road closure and subsequent diversion will cause temporary delays for road users and local residents may experience access disruption.
- There are no impacts anticipated for the core path to the east of the scheme. Access to the footpaths within Amisfield may be temporarily disrupted.

Mitigation

- Advance traffic signs will be placed prior to works in an effort to minimise disturbance to vehicular travellers, and will inform road users of expected duration, timings, and any temporary traffic management arrangements/restrictions.
- All residential properties within 300m of the scheme will be notified of the proposed works and the works programme. All access points to surrounding residential properties will remain open.
- If the footways within Amisfield are to be impact by the works, appropriate diversion routes should be in place and signage in place to notify users.
- The planned diversion route will be publicised prior to the works to inform local residents and users of the A701.
- When in place, TM will be monitored to ensure it is effectively managing traffic flow.
- Temporary site lighting used throughout the scheme will be directional and pointed only at the area of works and away from residential areas.

Road drainage and the water environment

Impacts

- If not adequately controlled, debris and runoff from the works could entering the surrounding watercourses; Amisfield Burn. 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, which may negatively affect the water environment.

Mitigation

- 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.
- 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.
- 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, and the
 use of funnels and drip trays when transferring fuel etc.
- The control room will be contacted if any pollution incidences occur.
- Visual pollution inspections of the working area will be conducted in frequency, especially during heavy rainfall and wind.
- Weather reports will be monitored prior and during all construction activities. In the event of adverse weather/flooding events, all activities will temporarily stop, and only reconvene when deemed safe to do so, and run-off/drainage can be adequately controlled to prevent pollution.

Providing all works operate in accordance with site control measures and SEPA Guidance for Pollution Prevention (GPP), the residual impact for water is considered neutral.

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

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 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 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 replacement of the carriageway structure, there will be no change in vulnerability of the road to 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.

Assessment cumulative effects

The <u>Scottish Road Works Commissioner's</u> Interactive Map does not highlight any other works in the area at the time of construction.

<u>Dumfries and Galloway's Planning Portal</u> does not highlight any proposed developments or planning applications on the A701 carriageway within proximity to the scheme.

Amey's current <u>programme of works</u> has not highlighted any other works on the A701 that will be undertaken in conjunction with the scheme.

No other nearby schemes which may result in a combined effect on nearby receptors have been identified.

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.

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:

 A design Initial Environmental Review of the scheme, undertaken by the Environment and Sustainability Team at Amey in January 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 existing carriageway.
- At end of life, components can be recycled, reducing waste to landfill.
- 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.

- 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.

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 area" as listed under regulation 2 (1) of the Environmental Impact Assessment (Scotland) Regulations 1999 (as amended).

Characteristics of potential impacts of the scheme:

 The successful completion of the scheme will afford benefits to residential properties in proximity, due to improved condition and ride quality of the carriageway surface, and improved carriageway drainage.

References of supporting documentation

Initial Environmental Review (IER) A701 Locharbriggs to Amisfield.

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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