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Environmental Impact Assessment Record of Determination

M9 J4 to J5 Crossover VRS Improvement

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Project Details

Description

BEAR Scotland has been commissioned by Transport Scotland to carry out vehicle restraint system improvement works on the M9 carriageway with works restricted to the central reserve. The project brief is to replace the existing barrier which is reaching its end of life and install double sided VRS of a higher containment along with replacement of the red chips. In addition, two existing emergency crossovers within the scheme extents will be extended into maintenance crossovers. The works are across a length of approx. 2.41km (0.8ha).

Construction activities for the works procedure are as follows:

- Set up traffic management (TM) and mark out site,
- Remove existing VRS and foundations,
- Excavate, prepare and form foundations for VRS (installation will be either driven post, socketed with concrete foundation or surface mounded
- Place, position and fix posts,
- Place and fix components to posts,
- Excavate soil and current red chip sections,
- Remove soil and waste from site for disposal,
- Line excavated area with geo-textile,
- Fill with red stone chippings,
- At cross over locations splayed kerbs will be removed, the central reserve will be excavated to a maximum depth of 620mm, a new pavement will be installed and stepped 75mm minimum into existing pavement. Once the road surface is finished a new barrier and end terminals will be installed,
- Remove TM and open road.

The works are programmed to be completed within the 2026/2027 financial year with works expected to begin on 6th September 2026. Works will be undertaken over three weeks operating during night time hours (20:30-05:30). TM will consist of a two lane closure on one side with the hard shoulder running and a single lane closure on the opposite carriageway with lane two running.

Location

The scheme lies on the M9 carriageway between Junctions 4 and 5 north of Polmont within the Falkirk Council local authority area and is predominantly surrounding by residential areas, agricultural land and Grangemouth golf course (Figure 1).

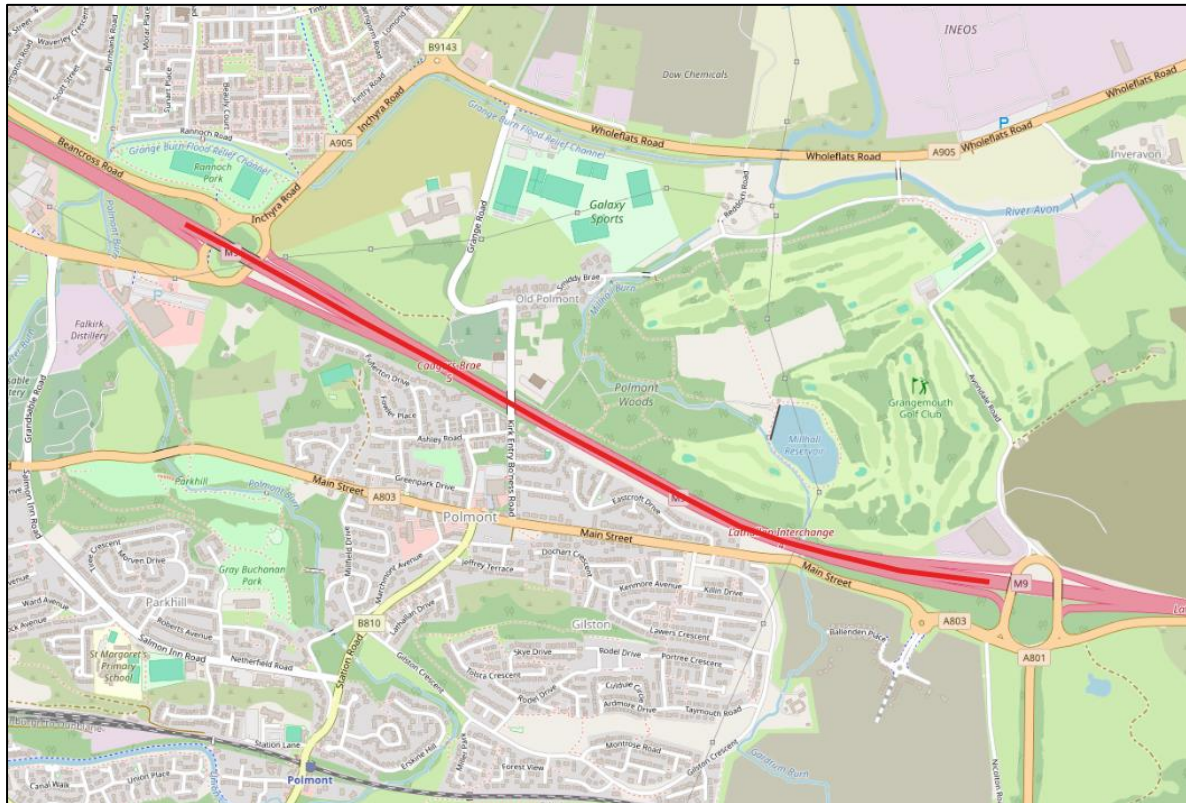


Figure 1. Extents of the Works. - Source: Asset Management Performance System (AMPS). © Europa Technologies Ltd. Contains Ordnance Survey data © Crown copyright and database right 2018.

Description of local environment

Air quality

A search of the [Air Quality in Scotland](#) online mapping records that air quality monitoring sites in the wider area record bandings in the 'green zone' (Low Index 1-3).

The scheme lies within the boundary of Falkirk Council, which has one active [Air Quality Management Areas](#) (AQMA) within its administrative boundary. The nearest active AQMA 'Falkirk Town Centre' is located approx. 3.45km west of the scheme, declared for nitrogen dioxide (NO₂) and particulate matter (PM₁₀).

There are 15 sites registered on the Scottish Pollutant Release Inventory ([SPRI](#)) for pollutant releases to air within the last 10 years, within 10km of the scheme:

- Avondale Landfill, Polmont - Waste and waste-water management – declared for carbon dioxide, carbon monoxide, chlorofluorocarbons (CFCs), formaldehyde, hydrochlorofluorocarbons (HCFCs), methane, nitrogen oxides (NO and NO₂ as NO₂), particulate matter (PM₁₀ and smaller), and tetrachloroethane.
- Bathgate Compressor Station (Site 2) – Energy section – declared for carbon dioxide (t) and methane (t).
- CHP Plant, Earls Road, Grangemouth – declared for carbon dioxide.
- Earls Gate Energy Centre, Grangemouth – Waste and waste-water management – declared for carbon dioxide (kt), chlorine and total inorganic chlorine compounds – as HCl (t), dioxins and furans – as WHO TEQ (g), mercury (kg) and nitrogen oxides, NO and NO₂ as NO₂ (kt).
- Earls Road, Grangemouth – waste and waste water management – chloroform (kg) and toluene (kg).
- Falkirk STW, Abbots Road, Falkirk – Waste and waste-water management – declared for methane.
- Grangemouth Chemical Plant – Chemical industry – declared for chloroform (kg), ethylbenzene (kg), formaldehyde (kg), NMVOCs (t), toluene (kg), xylene – all isomers (t).
- Grangemouth CHP, Boness Road, Grangemouth – Energy sector – declared for carbon dioxide, and nitrogen oxides (NO and NO₂ as NO₂).
- Grangemouth Refinery – Energy sector – declared for ammonia, antimony, arsenic, benzene, butadiene, cadmium, carbon dioxide, carbon monoxide, copper, HCFCs, HFCs, lead, manganese, mercury, methane, nickel, nitrogen oxides (NO and NO₂ as NO₂), NMVOCs, particulate matter (PM₁₀ and smaller), particulate matter (total), sulphur oxides (SO₂ and SO₃ as SO₂), tetrachloroethylene, toluene, vanadium, xylene (all isomers), and zinc.

- INEOS Chemicals Grangemouth Ltd, Grangemouth – Chemical industry – declared for benzene, butadiene, carbon dioxide, carbon monoxide, HCFCs, hydrofluorocarbons (HFCs), methane, nitrogen oxides (NO and NO₂ as NO₂), NMVOCs, particulate matter (PM₁₀ and smaller), and toluene.
- INEOS FPS Ltd, Kinneil Terminal, Grangemouth – Energy sector – declared for carbon dioxide, carbon monoxide, HCFCs, methane, nitrogen oxides (NO and NO₂ as NO₂), non-methane volatile organic compounds (NMVOCs), and sulphur oxides (SO₂ and SO₃ as SO₂).
- INEOS Infrastructure (Grangemouth) Ltd – Energy sector – declared for carbon dioxide, carbon monoxide, methane, nitrogen oxides (NO and NO₂ as NO₂), particulate matter (PM₁₀ and smaller), and sulphur oxides (SO₂ and SO₃ as SO₂).
- Longannet PS, Kincardine, Alloa – Energy sector – declared for antimony, arsenic, benzo(a) pyrene, cadmium, carbon dioxide, carbon monoxide, chlorine and total inorganic chlorine compounds (as HCl), chromium, copper, dioxins and furans (as ITEQ), dioxins and furans (as WHO TEQ), fluorine and total inorganic fluorine compounds (as HF), lead, manganese, mercury, methane, naphthalene, nickel, nitrogen oxides (NO and NO₂ as NO₂), nitrous oxide, NMVOCs, particulate matter (PM₁₀ and smaller), particulate matter (total), polychlorinated biphenyls (PAHs) (four indicator compounds of LRTAP), selenium, sulphur oxides (SO₂ and SO₃ as SO₂), vanadium, and zinc.
- Syngenta, Grangemouth Man Centre, Grangemouth – Chemical industry – declared for chloroform, dioxane, HFCs, methanol, methyl chloride, NMVOCs, and toluene.
- Versalis UK Ltd, Grangemouth – declared for butadiene, carbon dioxide, NMVOCs, and styrene.

The closest of these is Avondale Landfill and is located 150m northeast of the scheme extents. The site borders the M9 southbound (SB) carriageway at Junction 4 to the south of the scheme.

The baseline air quality within the scheme extents is primarily influenced by motor vehicles travelling along the M9 trunk road. Secondary sources are most commonly derived from day-to-day urban and agricultural land management activities, and from motor vehicles travelling along local network roads.

Cultural heritage

The [PastMap](#) and [Historic Environment Scotland](#) (HES) online mapping tools records the following designated cultural heritage assets within 300m of the scheme extents:

- The Antonine Wall World Heritage Site (WHS) Buffer Zone is located within the western scheme extents close to Junction 5 where it crosses the M9.
- The Antonine Wall WHS Boundary is located approx. 40m north of the scheme extents and borders the M9 SB carriageway.
- Seven Scheduled Monuments (SM), the closest of which, Antonine Wall Deanfield, Roman Temporary Camp and Annexe 160m Nne of, is found approx. 15m north of the scheme extents, bordering the M9 SB carriageway boundary.
- Three Listed Buildings, the closest of which, Kinneil House, Polmont (Formerly The Manse) Category B, is located approx. 45m south of the scheme extents.

There are no Garden & Designed Landscapes, Conservation Areas, or Battlefields within 300m of the scheme.

Of lower concern, there are approximately 19 undesigned cultural heritage assets (UCHAs) located within 300m of the scheme extents. The closest recorded is 'Polmont Churchyard National Record of the Historic Environment (NRHE)', which is located approx. 40m north of the scheme extents and relates to medieval rig and furrows identified within the churchyard.

Construction of the M9 carriageway is likely to have removed any archaeological remains that may have been present within the trunk road boundary. The potential for the presence of unknown archaeological remains in the study area has therefore been assessed to be low.

Landscape and visual effects

The scheme is not situated within a [National Park](#) (NP) or [National Scenic Area](#) (NSA).

The Landscape Character Types (LCT) within the study area is 'Coastal Farmland - Central' (no. 155), Urban (no. 0) and 'Lowland River Valleys - Central' (no. 152) ([Scottish Landscape Character Types](#)). The key characteristics of 'Coastal Farmland – Central' are:

- Series of large scale, open, east-west rolling hill landforms, gently sloping down to the Forth to the north and the River Avon to the south.
- Beech and hawthorn hedges and shelterbelts and avenues.
- Settlement consists of hill top steadings and also the town of Bo'ness nestled at the coast.
- Network of busy main roads, as well as quieter minor roads.
- Many historical and archaeological features and strong cultural associations.
- Simple, well-tended landscape.

- Extensive views across the Forth and a strong coastal character.

The key characteristics of 'Lowland River Valleys – Central' are:

- Well-defined river corridors, most with flat valley floor enclosed by often commanding hills.
- Strong topographic and visual identity, with varying scale and character.
- Glacial terrain and deposits located on valley margins, often subject to mineral extraction.
- Relatively high proportion of tree cover, with roadside and hedgerow trees and semi natural woodland.
- Dense areas of coniferous forest cover the slopes surrounding the reservoir in the Upper Carron Valley.
- Road corridors often running parallel to river corridor form key linear features.
- Settlement often closely linked to the river corridor and parallel road corridors.
- Intensive settlement and urban development on margins of valleys south and north of Firth of Forth.
- Predominance of traditionally managed estate, policy and designed landscapes.
- Nature conservation importance of river and associated habitats.
- Frequently enclosed and focussed views along the river valley.
- Visibility of remnant derelict land, motorway and road corridors, power lines, wind farms and industrial sites from the urban fringe of Falkirk/Denny.

There are no characteristics for areas defined as 'Urban'.

[Land use](#) located within 300m of the scheme extent can be categorised as the following:

- Motorway and Major Roads,
- Golf Course,
- Rectilinear Fields and Farms,
- Urban Area,
- Quarry,
- Plantation,
- Cemetery,
- Reservoir,
- Recreation area, and
- Industrial-scale farming unit.

The [national scale land capability for agriculture](#) classifies land surrounding the scheme as being:

- 'Class 2' – Land capable of producing a wide range of crops.
- 'Class 3.1' - Land capable of producing consistently high yields of a narrow range of crops and / or moderate yields of a wider range. Short grass leys are common.

The M9 within the scheme extents is intermittently bordered by sections of shelterbelt trees and areas of woodland within the Grangemouth Golf Course and along the River Avon.

There are six woodlands registered on the [Native Woodland Survey of Scotland](#) database located within 300m of the scheme:

- Approx. 2.11ha of lowland mixed deciduous woodland, borders the NB carriageway within the western extents of the scheme, located approx. 2-3m back from the verge.
- Approx. 1.52ha of wet woodland, borders the SB carriageway within the western extents of the scheme.
- Approx. 3.06ha of lowland mixed deciduous woodland, borders the NB carriageway within the western extents of the scheme.
- Approx. 1.98ha of lowland mixed deciduous woodland, located approx. 120m south NB carriageway at the Lathallan Junction at the western extent of the scheme.
- Approx. 0.96ha of nearly native wet woodland, located approx. 190m north of the NB carriageway.
- Approx. 1.22ha of lowland mixed deciduous woodland approx. 150m northeast of the NB carriageway within the western extents.

There is one registered area of woodland on the [Ancient Woodland Inventory Scotland](#) database located within 300m of the scheme extents:

- Approx. 8.53ha designated as Long-Established (of plantation origin) located approx. 115m north of the NB carriageway within the western extents of the scheme.

Polmont Park, Polmont, [Tree Preservation Order](#) (TPO) ID: TR/POL/4 is located within the scheme extents and extends across both the northbound and southbound verges within the western extents.

The existing trunk road is a prominent linear landscape feature. The trunk road corridor, for example, has a distinct character shaped by low volume, fast-flowing traffic, road markings, safety barriers, signage, street lighting, landscaping, etc. The

scale of the trunk road detracts from the quality and character of the wider landscape.

Biodiversity

The [NatureScot SiteLink](#) online mapping tool identifies that the Firth of Forth SPA and associated Ramsar Site lie approx. 2.6km north of the scheme (straight line distance, at the nearest point).

While not within 300m, the Firth of Forth SPA is underpinned by the Firth of Forth Site of Special Scientific Interest (SSSI).

There are two [Local Nature Conservation Site's](#) (LNCS) within 300m of the scheme extents, they are as follows:

- Polmont Park Site of Importance for Nature Conservation (SINC) is located approx. 90m south of the scheme extents.
- Polmont Woods SINC is located approx. 110m north of the scheme extents.

There are no [Local Nature Reserves](#) (LNRs) designated for biodiversity features with connectivity to the scheme.

A search of the NBN online mapping tool records the following invasive and injurious plant species listed within the Network Management Contract (NMC) within 2km of the scheme extents (within the last 10-years):

Three invasive non-native species (INNS):

- Japanese knotweed (*Reynoutria japonica*),
- Himalayan balsam (*Impatiens glandulifera*), and
- Giant hogweed (*Heracleum mantegazzianum*).

Two injurious weeds:

- Spear thistle (*Cirsium vulgare*), and
- Common ragwort (*Jacobaea vulgaris*).

One invasive native perennial:

- Rosebay willowherb (*Chamaenerion angustifolium*).

The nearest record pertains to Japanese knotweed, located approx. 1.2km south of the scheme extents.

A search of the Asset Management Performance System (AMPS) online mapping tool records the following within the scheme extents (within last 10-years):

Two INNS:

- Giant hogweed, and
- Rhododendron (*Rhododendron ponticum*).

One invasive native perennial (as listed in the Trunk Road Inventory Manual):

- Rosebay willowherb.

No INNS were recorded within the scheme extents within the last 10-years.

Habitat immediately bordering the M9 carriageway within the scheme extents predominantly consists of a combination of dense and fragmented areas of mature/semi-mature broadleaved trees and woodland, the River Avon which is spanned by the M9 within the scheme extents along with areas of arable and pastoral fields. Given the presence of the M9, the natural habitats bordering the scheme are somewhat fragmented. While there is high availability of roadside vegetation, the habitat immediately bordering the trunk road is assessed to be of reduced ecological value, due to the likelihood of trunk road disturbances from traffic flow and that the M9 trunk road limits the connectivity and continuity for species between their potential habitats on either side of the road.

Geology and soils

The M9 within the scheme extents is not located within a [Geological Conservation Review Site](#) (GCRS) and there are also no [Local Geodiversity Sites](#) (LGS) within 300m of, or which share connectivity to the scheme extents.

The [National Soil Map of Scotland](#) online mapping tool records the generalised soil types and major soil groups beneath the scheme extents as Brown Soils.

The [British Geological Survey](#) online mapping tool records that the superficial geology in the scheme extents is comprised of:

- Glaciofluvial ice contact deposits – Gravel, sand and silt.
- Superficial deposits – Sediment.
- Till, Devensian – diamicton,
- Raised marine deposits, Devensian-Clay, silt and sand,
- Alluvium – Clay, silt, sand and gravel.

The bedrock geology in the scheme extents is recorded as:

- Passage Formation – Sedimentary Rock Cycles, Clackmannan Group Type.

There is no evidence of historical industrial processes or the storage of hazardous materials that could have given rise to significant land contamination.

Material assets and waste

The proposed works are required to resurface the worn carriageway and reinstate road markings. Materials used will consist of:

- Steel posts
- Double sided safety barrier.
- Red chips.
- 40mm thick surface course.
- 100mm thick binder course.
- 220mm thick base course.
- 260mm thick sub-base.
- AC20 Dense Binder.

The scheme has a value greater than £350,000. As a result, a Site Waste Management Plan (SWMP) is required.

The scheme involves the removal and installation of VRS and the replacement of red chips within the central reserve along a 2.41km stretch of the M9. The main waste produced during the works will be steel barrier and posts which will be recycled, kerbs which will be disposed of at a licenced facility and unacceptable material which will be disposed of at a licenced facility. Waste Acceptance Criteria (WAC) classification testing has been undertaken and all waste will be disposed of in line with these results.

Noise and vibration

Works are not located within a [Candidate Quiet Areas](#) (CQA).

The night-time noise level (L_{night}) modelled within the scheme extents ranges between 70 and 75 decibels (dB) with noise levels decreasing to between 60 and 65 dB for the nearest surrounding Noise Sensitive Receptor (NSRs) (residential) ([Scotland's Noise Scotland's Environment](#)).

The baseline noise and vibration in the scheme extents is primarily influenced by vehicles travelling along the M9 trunk road. Secondary sources are most commonly from vehicles travelling along local network roads, day-to-day urban and agricultural land management activities.

Population and human health

The works are located within 300m of a large number of residential and farmstead properties due to the proximity of the settlement of Polmont. The nearest properties (residential) are located approx. 30m south of the scheme extents and are screened by a strip of broadleaved trees and lane one of the of M9. All residential properties are screened from the scheme extents by a combination of dense/fragmented mature tree shelterbelts, raised roadside embankments and/or other properties.

The following properties of note are also located within 300m of the scheme:

- Heart of Scotland Holidays is located approx. 60m south of the scheme extents and is fully screened by shelterbelt plantation.
- Plymouth Brethren Christian Church is located approx. 70m north and is fully screened by shelterbelt plantation.
- Premier Inn Falkirk East Hotel is located approx. 220m from the western extents of the scheme and receives only partial screening from the works.
- Macdonald Inchyra Hotel and Spa is located approx. 280m north from the western extents of the scheme and is fully screened by shelterbelt plantation.

There are multiple [core paths](#) within 300m of the scheme extents:

- Bo'ness to Polmont Woods (ID: 016/629) borders the M9 SB carriageway in proximity to the Plymouth Brethren Christian Church. This core path also connects with Bo'ness to Polmont Woods (ID: 016/627), Polmont Woods (ID: 016/568) and Polmont Woods (ID: 016/616) within 300m.
- Rannoch Park to Fairy Glen (ID: 016/570) which is spanned by the scheme extents at the Cadgers Brae Roundabout. This core path also connects with Cassel Brae / Fairy Glen (ID: 016/580).

In addition, footpaths border the Bo'Ness Road overbridge which spans the M9 within the scheme extents.

There are no public transport links (e.g., bus stops) present along the M9 carriageway within the scheme extents. In addition, there is no street lighting present throughout the scheme extents.

There are also no [National Cycle Network](#) routes within 300m of the scheme.

The M9, within the scheme extents, is comprised of two lanes along the NB and SB carriageways with the national speed limit applying throughout. The Average Daily Traffic (ADT) flow information within the scheme extents is moderate (44,786 motor vehicles (ID: 00461, 2026 data)) ([Road Traffic Statistics](#)).

Road drainage and the water environment

The [Scottish Environment Protection Agency \(SEPA\) River Basin Management Plan](#) online mapping tool records two classified surface waterbodies within 300m of the scheme extents:

- Grange Burn / Westquarter Burn (ID: 3300), is a river in the Forth Estuary (South Coastal catchment of the Scotland river basin district. The main stem is approx. 16.3km in length and has an overall status of 'Moderate'. This river is spanned by the M9 approx. 250m west of the western scheme extents.

There are seven unclassified surface waterbodies located within 300m of the scheme extents. They are as follows:

- Millhall Burn / Gilston Burn is spanned by the M9 within the scheme extents and is separated from the works by active lanes of the M9 and at least 15m of verge.
- A small issues which connects to Millhall Reservoir is located approx. 50m north at the eastern extents of the scheme.
- Pond1 is located approx. 70m south of the scheme at the eastern extents.
- Millhall Reservoir is located approx. 150m north of the scheme extents.
- Pond2 is located approx. 180m north of the scheme at the eastern extents.
- Pond3 is located approx. 180m north of the scheme extents.
- Pond4 is located approx. 240m north of the scheme at the eastern extents.
- Polmont Burn is located approx. 250m west of the western scheme extents.

A search of the [SEPA's Flood Map](#) online mapping tool records that the trunk road within the scheme extents is at a low to high risk of surface water flooding each year (i.e. it has between a 0.1% and 10% chance of flooding).

A search of [Scotland's Environment \(SE\)](#) online mapping tool determined that the trunk road lies on the 'Grangemouth' and 'Avon Sand and Gravel' groundwaters, which have both been classified as 'Good'.

A search of the [Scotland's Environment \(SE\)](#) determined that the trunk road, within the scheme extents, does not lie within a Nitrate Vulnerable Zone (NVZ).

Climate

The [Climate Change \(Scotland\) Act 2009](#) ('The Act'), and its subsequent amendment under the [Climate Change \(Emissions Reduction Targets\) \(Scotland\) Act 2019](#), sets the framework for the Scottish Government to address climate change. The Act has an ambitious target to reach Net Zero greenhouse gas emissions by 2045, with any residual emissions balanced by removing carbon dioxide from the atmosphere. This is five years earlier than the rest of the UK due to the greater potential for carbon sequestration in Scotland.

The Act was amended to replace interim targets with carbon budgets. Carbon budgets are legally binding caps on greenhouse gas emissions in Scotland over five-year periods. In line with the Act, the Climate Change Committee (CCC) published advice on the level of Scotland's four carbon budgets, covering the period 2026 to 2045, recommending what the Scottish Government sets its carbon budgets at for annual average levels of emissions. These recommendations are based on an ambitious but credible route to Net Zero for Scotland by 2045.

Emissions reductions from surface transport are the largest contribution to meeting the first two carbon budgets. The pathway for surface transport emission reduction is primarily driven by the uptake of electric vehicles, in addition to measures to enable a shift from car use to public transport and active travel, which all play a role in reducing emissions from fossil fuel cars. Ensuring efficiency of existing transport infrastructure and improving/providing new active travel facilities is therefore important to support these carbon reduction budgets.

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

Policies and plans

This Record of Determination has been undertaken in accordance with all relevant regulations, guidance, policies and plans, notably including the Environment and Sustainability Discipline of the Design Manual for Roads and Bridges ([Design Manual for Roads and Bridges \(DMRB\)](#)) and Transport Scotland's Environmental Impact Assessment Guidance ([Guidance - Environmental Impact Assessments for road projects](#)).

Description of main environmental impacts and proposed mitigation

Air quality

During the construction phase, activities undertaken on site could potentially have some minor localised and short-term air quality impacts in proximity to the works. The construction phase will, for example, require a range of ancillary plant, vehicles, and non-road mobile machinery (NRMM) which will contribute to local dust and air pollutants. The main sources are likely to be dust generated during the excavation of the foundations for the VRS, excavation of the red chips and during the excavation of the pavements for the crossover element. As a result, there is potential for impacts to local air quality.

However, considering the rolling nature and limited duration of the scheme, along with implementation of mitigation detailed below, the proposed works' impacts on local air quality levels during the construction period are assessed to be temporary, negligible adverse in magnitude.

Upon completion of the works, no residual air quality impacts are anticipated.

Air quality mitigation measures:

- A water-assisted dust sweeper will sweep the carriageway after dust-generating activities, and waste will be contained and removed from site as soon as is practicable.
- Materials that have a potential to produce dust will be removed from site as soon as possible, and vehicles that remove cold-milled material from site will have sheeted covers.
- Ancillary plant, vehicles and NRMM will have been regularly maintained, paying attention to the integrity of exhaust systems.
- Ancillary plant, vehicles and NRMM will be switched off when stationary to prevent exhaust emissions (e.g., there will be no idling vehicles).
- Cutting, grinding, and sawing equipment (if required) will be fitted or used in conjunction with suitable dust suppression techniques e.g., local exhaust ventilation system that fits directly onto tools.
- Regular monitoring (e.g., by engineer or Clerk of Works) will take place when activities that have the potential to impact local air quality are occurring. In the unlikely event that unacceptable dust or exhaust emissions are emanating from the site, the operation will, where practicable, be modified and re-checked to verify that the corrective action has been effective. Actions to be considered

include: (a) minimizing cutting and grinding on-site, (b) reducing the operating hours, (c) changing the method of working, etc.

Cultural Heritage

The Antonine Wall WHS Buffer Zone crosses the M9 within the scheme extents with the Antonine Wall WHS also being located approx. 40m north, at its closest point to the works. As such the potential for impacts to this designated cultural heritage asset have been considered. However, where the WHS crosses the M9 works will be restricted to the replacement of VRS and red chips within the central reserve, as such works will be contained within the existing boundary of the M9 carriageway and therefore there is negligible potential for impacts. While two sections of the works will involve the excavation for the carriageway to a depth of 620mm, they are located at their closest 40m south of the WHS and are separated by active areas of the M9 carriageway, therefore it is assessed that there is negligible risk to the WHS. Historic Environment Scotland have been consulted with regards to these works and have advised that they have no significant concerns as the works are restricted to the main carriageway, and they have advised that the construction of the road in 1965 is likely to have destroyed much of the surviving remains. However, they advised that BEAR Scotland confirm with Falkirk Council if any specific mitigation was needed for the area located within the WHS Buffer Zone. Consultation with Falkirk Council has confirmed that due to these works operating within made ground there is no risk of physical impact and no additional mitigation is needed.

Given the nature of the scheme, and with implementation of mitigation detailed below, the proposed impacts on cultural heritage during the construction period are assessed to be negligible in magnitude.

Upon completion of the works, no residual impacts on cultural heritage are anticipated.

Cultural heritage mitigation measures:

- All site operatives will be briefed on the location and importance of the Antonine Wall World Heritage Site Buffer Zone and Antonine Wall World Heritage Site within and in proximity to the works.
- Toolbox Talk TTN-046 'Archaeology' will be briefed to all site operatives prior to the commencement of works.
- All site operatives will be briefed on the importance of archaeological finds and will be instructed to inform the site supervisor where potential finds are made. If there are any unexpected archaeological finds, all works will temporarily stop, the area will be cordoned off, and BEAR Scotland's Environmental Team will be contacted for advice.

- People, ancillary plant, vehicles, NRMM and materials will be restricted to areas of made/engineered ground (as much as is reasonably practicable). Where access outwith made/engineered ground is required for the safe and effective completion of the scheme, the area will be reduced as much as is reasonably practicable, and ideally will be accessed on foot.
- If a change to the construction programme onsite is required that necessitates additional earthworks other than those currently programmed, BEAR Scotland's Environmental Team will be contacted.

Landscape and visual effects

There will be a short-term impact on the landscape character and visual amenity of the site as a result of the presence of construction plant, vehicles, and TM. However, people, ancillary plant, vehicles, NRMM and materials will be restricted to the central reserve areas of made/engineered ground on the M9, and construction works are programmed to be undertaken at night. Furthermore, the M9 is largely screened from the surrounding landscape by tree shelterbelt, as such, the visual impact of the works will be somewhat reduced.

Considering the nature, duration, size, and scale of the scheme, and with implementation of mitigation detailed below, impacts on landscape and visual effects are assessed as temporary, negligible adverse in magnitude.

Upon completion of the works, no residual impacts on landscape and visual effects are anticipated e.g., when complete the visual appearance will remain largely unaffected, with the discernible changes being a renewed barrier, replaced red chips and slight alterations to the extent of the crossover .

Landscape and visual effects mitigation measures:

- The site will be monitored regularly for signs of litter and other potential contaminants, and litter will be removed before and after works take place.
- The site will be left clean and tidy following construction.
- Where possible, construction vehicles will not be left in places where soil or vegetation can be damaged. If damage to road verge occurs it will be lightly cultivated or graded (upon completion of the works) to allow natural recolonization by local species and promote integration with existing landscape character.

Biodiversity

The Firth of Forth SPA and Ramsar Site are located approx. 2.6km north of the scheme extents at their closest point. Given that the scheme is located within the

buffer zones of some qualifying features of these European Sites a Habitats Regulations Appraisal (HRA) was undertaken. Given the distance separating the scheme from the designated sites, coupled with the nature and duration of the works, and restriction to the M9 central reserve, the HRA determined no likely significant effects (LSE) on the qualifying features of the designated sites.

Two LNCS are located within 300m of the scheme extents however, the closest of these are located 90m south of the scheme extents. Both sites are also screened from the works by active lanes of the M9 carriageway, therefore the potential for impacts to these is considered to be negligible.

A temporary short-term increase in noise levels may cause disturbance to local wildlife if present in the vicinity of the works. The works will, for example, require a range of ancillary plant, vehicles and NRMM which will emit noise and create potential disturbance. The works will also require delivery of materials and the presence of personnel to facilitate the improvements to the road surface. However, works will be undertaken on a rolling programme and restricted to the central reserve, reducing the potential for impacts in any one area. Furthermore, the number of construction vehicles and operatives required onsite is low given the scale and scope of works.

While INNS giant hogweed and Rhododendron have been recorded along the verge of the M9 within the scheme extents, the works will be restricted to the central reserve and will be separated from these locations by active lanes of the M9. Nevertheless, precautionary mitigation measures will be implemented to ensure traffic management signage does not interact with these areas.

Of lower concern, injurious weeds including spear thistle, common ragwort and rosebay willowherb, an invasive native perennial are present within the verges surrounding the scheme. However, as above with works restricted to the M9 central reserve, there is limited potential for works to impact these areas.

Considering the nature, duration, size, and scale of the scheme, and with implementation of mitigation detailed above, the proposed works impacts on biodiversity throughout the construction period are therefore assessed to be temporary, minor adverse in magnitude.

Upon completion of the works, no residual impacts are anticipated in relation to biodiversity.

Biodiversity mitigation measures:

- Given the presence of giant hogweed, rhododendron, spear thistle, common ragwort and rosebay willowherb within the verges of scheme extents, Toolbox

Talk TTN-009 Working with Injurious Weeds & Invasive Plants, will be briefed prior to works commencing.

- The following mitigation will be implemented to prevent the spread of giant hogweed and Rhododendron:
 - All site workers will be made aware of the location and presence of giant hogweed and Rhododendron within the verges of scheme extents.
 - Where possible, site operatives installing traffic management signs will avoid entering the carriageway verge at the location of the known giant hogweed and Rhododendron.
 - No equipment, signage, materials or waste will be permitted to be stored within the verge at the location of the giant hogweed or Rhododendron.
 - In the event there is a requirement for entry into the verge at the location of the giant hogweed or Rhododendron this will be limited as far as is possible. In addition, site operatives will be appropriately protected from the giant hogweed and there will be no disturbance of soil.
- Given the suitable habitat and records of protected species within proximity to the scheme extents, Toolbox Talk TTN-139 'Protected Species', will be briefed to all site operatives prior to the commencement of works.
- Where possible, artificial lighting used during night works will be sufficiently screened and aligned so as to ensure that there is no direct illumination of neighbouring habitat (e.g., locations adjacent to tree shelterbelt, woodland, Millhall Burn / Gilston Burn etc.) to ensure minimal impact on nocturnal species.
- The works are not permitted to disturb or destroy any active birds nests. If an active birds nest is identified onsite that will be impacted by works, BEAR Scotland's Environmental Team will be contacted.
- All site workers will have received adequate training relevant to their role prior to working on the site, including specific environmental inductions and 'toolbox talks' as required.
- Site personnel will remain vigilant for protected species and will not approach or touch any animals seen on site. Any sightings of protected species will be reported to BEARs Environmental Team. Should a protected species be encountered or move within 50m of the active works, works will be temporarily halted until the animal(s) move at least 50m away from the construction site, or until BEAR's Environmental Team can provide advice.
- The Contractor will employ 'soft start' techniques for all noisy activity to avoid sudden and unexpected disturbance during works. Each time the activity is started up after a period of inactivity, the noise levels will be gradually increased over a period of 30 minutes to permit animals (including birds) to move away from the disturbance.
- All equipment stored onsite, if necessary, will be checked at the start of each workday to ensure mammal species are not present. Any storage containers/plant within the compound will also be secured overnight to prevent exploration by mammal species. Any areas where an animal could become

trapped (e.g., storage containers) will also be covered at the end of each working day.

- People, ancillary plant, vehicles, NRMM and materials will be restricted to areas of made/engineered ground (as much as is reasonably practicable). If during works unforeseen access to the surrounding environment is required, works will cease in this area and BEAR Scotland's Environmental Team will be contacted to allow consideration of potential environmental effects.
- BEAR Scotland's Environmental Team will be contacted to allow consideration of potential environmental effects if:
 - unforeseen site clearance is required,
 - unplanned works are to be undertaken out with the carriageway boundary,
 - there is any deviation from the agreed plan, programme and/or method of working,
 - nesting birds are found onsite.
 - BEAR Scotland's Control Room will be contacted if there is a pollution incident.

Material assets and waste

Minimising impacts arising from construction materials are focussed upon making the most efficient use of materials onsite to reduce the need for imported primary materials and minimise the creation and disposal of waste through (i) reduction, (ii) re-use, and (iii) recycling. Potential impacts have been assessed for both the construction and operational phases of this scheme. It is anticipated that most material impacts are likely to arise during construction, though long-term residual impacts could occur post construction during the operational phase e.g., during the disposal of materials arising from routine maintenance operations.

However, the detailed design will reduce the requirements for primary materials and materials will also be derived from recycled, secondary, or re-used origin as far as practicable within the design specifications to reduce natural resource depletion.

Considering the nature, duration, size, and scale of the scheme, and with implementation of the mitigation detailed below, the proposed works impacts on material assets and waste throughout the construction period are therefore assessed to be temporary, negligible adverse in magnitude. Upon completion of the works, no residual impacts are anticipated on materials or waste.

Material assets and waste mitigation measures:

- The waste hierarchy (Reduce, Reuse, Recycle and Dispose) will be employed throughout the construction works.

- A SWMP will be completed by the Designer and Contractor as required. The SWMP will provide details of the following:
 - The quantity and type of waste that will be produced.
 - How waste will be minimised, reused, recycled, recovered, or otherwise diverted from landfill.
 - How materials that cannot be reused, recycled, or recovered will be removed from site and consigned, transported and disposed of in full accordance with all relevant UK legislation.
- The Waste Classification Report in its entirety, including all data and appendices, will be submitted to the potential waste receiver(s) to confirm their ability to legally receive the waste and their acceptance of the waste assessment and the European Waste Catalogue (EWC) code. The report will be forwarded to the preferred waste receiver for review, and confirmation of acceptance received, prior to material being removed from the site.
- Good materials management methods (e.g., 'just-in-time' delivery) will be implemented wherever possible.
- The Contractor will comply with all 'Duty of Care' requirements, ensuring that any surplus materials or waste are stored, transported, treated, used, and disposed of safely without endangering human health or harming the environment. Waste transfer notes and/or waste exemption certificates (if required) will also be completed and retained.
- Designated areas will be identified within which all materials and personnel, including construction compounds, where necessary, will be contained to limit environmental disturbance during construction works. This will include a designated area (if required) for segregation and reuse of waste materials.
- The selection of areas for materials stockpiling will avoid sensitive locations such as road drainage. Stockpiled materials with leachate potential, for example, will be stored away from road drainage to prevent cross-contamination with other materials, wastes, or groundwater.
- Materials will be stored with the appropriate security to prevent loss, theft, or vandalism.
- All temporary road signs and traffic cones will be removed from site on completion of works.
- Wastewater from welfare facilities (if required) will be subject to effluent treatment followed by tanker removal.
- If hazardous substances are used onsite, each substance will be subject to assessment under the Control of Substances Hazardous to Health (COSHH) Regulations 2002. Hazardous substances will also be clearly labelled, and disposed of, in line with relevant waste regulations. Special waste will also not be mixed with general waste and/or other recyclables.

Geology and Soils

Road schemes have the potential to impact upon the geology and soils through direct and indirect impacts on sensitive sites, loss or sterilisation of mineral deposits or soil resources, disturbance of contaminated land, or surcharging of ground which may accelerate erosion and subsidence.

However, works are minor in nature and are restricted to the replacement of VRS and red chips within the central reserve as well as the extension of two crossovers, with all works restricted to made/engineered ground within the M9 central reserve. The work corridor is also not located within a GCRS, geological SSSI or LGS.

Considering the nature of the scheme, and with implementation of the mitigation detailed below, the potential for impact on geology and soils within the area of likely construction disturbance is somewhat diminished. The proposed works impacts on geology and soils throughout the construction period are therefore assessed to be negligible in magnitude.

Upon completion of the works, no residual impacts are anticipated in relation to geology and soils.

Geology and Soils mitigation measures:

- Excess excavated materials will be disposed of by a licensed waste handler in line with the Waste Classification Report.
- In the event excavations / trenches >0.5m deep are required, these will be covered or have ramps installed when left unsupervised at the end of a working day.
- The extent and duration of exposed soil, where necessary, will be kept to the minimum required for the works.

Noise and vibration

Activities undertaken on site could potentially have some localised and short-term noise impacts in proximity to the works. The road works will, for example, require a range of ancillary plant, vehicles and NRMM for excavation of the red chips, removal and installation of the VRS barriers and posts as well as during the building up of the pavement at the crossover locations. As a result, there is potential for noise and vibration effects to the residential property within the local area, located approx. 30m south of the scheme extents, however given the motorway setting an existing high baseline traffic noise is expected.

Furthermore, the works are not located within a CQA, and while they will be completed over a duration of three weeks they will be undertaken on a rolling programme which will limit the impacts in any one location. In addition, they will be undertaken with the aim being to complete the noisiest works by 23:00.

Considering the likely sources of noise and vibration, with the nature, duration, size, and scale of the scheme, and with implementation of the mitigation detailed below, it is unlikely that noise and vibration associated with the works will lead to significant impacts, disruption and/or complaints. The proposed scheme is therefore anticipated to result in temporary, minor adverse noise impacts.

Noise and vibration mitigation measures:

- The local authority environmental health department will be notified of nighttime working by BEAR Scotland's design engineer.
- Given the proximity of residential properties Toolbox Talk TTN-042 'Being a Good Neighbour' will be briefed to all site operatives prior to the commencement of works.
- Where possible, the noisiest work operations (e.g., driving posts, use of an excavator) will be completed before 23:00.
- If unacceptable noise is emanating from the site the operation will, where possible, be modified and re-checked to verify that the corrective action has been effective. Actions to be considered include (a) minimizing cutting and grinding on-site, (b) reducing the operating hours, (c) repositioning equipment, (d) changing the method of working etc. Corrective actions will be actioned through the non-conformance reporting procedure, which ensures a root-cause analysis is carried out on each incident. The non-conformance procedure also ensures that appropriate corrective and preventative action measures are agreed and implemented in a timely fashion with all parties, and are recorded and actioned through to closeout, and fully auditable and traceable.
- Ancillary plant, vehicles and NRMM with directional noise characteristics will (where practical) be shut down in intervening periods between site operations.
- The use of paving breakers (jackhammers), chipping hammers, etc. will be avoided (except where there is an overriding justification), and if used will be fitted with mufflers or silencers of the type recommended by the manufacturer.
- Drop heights from vehicles and NRMM will be kept to a minimum to minimise noise when unloading.
- All ancillary plant, vehicles and NRMM used onsite will have been regularly maintained, paying attention to the integrity of silencers and acoustic enclosures.
- HGV, site vehicles and NRMM will be switched to the minimum setting required by HSE and, where possible, will utilise 'broadband non-tonal' or 'directional sound reversing' alarms. Speed limits will also be reduced through the works.

Population and human health

During construction, activities undertaken on site have the potential to have temporary adverse impacts on local residents and road users. Numerous residential properties are located within proximity to the scheme and as such, there is potential for impacts to local residents in the form of noise/vibration impacts, visual disturbance and delays due to traffic management. However, the M9 will remain open throughout the works including the junctions and while the number of lanes will be reduced the works will be undertaken at night when traffic flows are lower, as such no congestion issues are noted during the proposed construction hours. Providing mitigation measures detailed below and those listed within the noise and vibration section are adhered to, the impacts are assessed to be somewhat reduced.

Considering the nature, duration, size, and scale of the scheme, and with implementation of the mitigation described above, impacts on population and human health are assessed as temporary, minor adverse in magnitude.

Upon completion of the works, there will be a positive impact in relation to population and human health due to the improvement of safety provided by the new VRS arrangement.

Population and human health mitigation measures:

- The local authority environmental health department will be notified of nighttime working by BEAR Scotland's design engineer.
- Construction lighting will take into account the need to avoid illuminating adjacent properties to avoid a nuisance at night, and non-essential lighting will be switched off at night.
- Where appropriate, a communication strategy (e.g., social media, consultation with local authority and other stakeholders, letter drop (for night-time works), etc.) will be initiated to keep local residents, nearby hotels and other businesses informed of the proposed working schedule, particularly the times and durations of noisy construction activities. The communication strategy will also provide a 24-hour contact number for the BEAR Scotland Control Room.
- Advanced signage will be strategically placed on the trunk road to notify stakeholders of the road closure and diversion at least seven days in advance.
- A Traffic Management Plan (TMP), which includes measures to avoid or reduce disruption to road traffic, will be produced in accordance with the Traffic Signs Manual (Department of Transport 2009). The TMP will ensure that there is no severance of community assets, access routes or residential development.
- Journey planning information will be available for drivers online at the trafficscotland.org website. Journey planning information will also be available for drivers online through BEARs social media platforms.

Road drainage and the water environment

During the works, there is potential for temporary adverse impacts on the water environment. Potential changes in water quality e.g., from pollution events (either by accidental spillage of sediments, particulate matter, chemicals, fuels or by mobilisation of these in surface water caused by rain) during works have the potential to have a direct or indirect effect on surrounding waterbodies such as Millhall Burn / Gilston Burn which is spanned by the works within the scheme extents.

However, there will be no 'in-water' works and all land outwith the trunk road boundary is also considered out-of-bounds to all construction staff during the works. The potential for a direct pollution incident within a waterbody is also unlikely e.g., experience gained from BEAR maintenance schemes elsewhere on the network has shown that where standard best working practice is adopted (e.g., adherence to SEPA Guidelines for Pollution Prevention (GGPs)), water quality is protected.

Considering the nature, duration, size, and scale of the scheme, and with implementation of the mitigation detailed below, the proposed works impacts on the road drainage and water environment are assessed as temporary, negligible adverse in magnitude.

Upon completion of the resurfacing works, no residual impacts are anticipated in relation to the road drainage and water environment.

Road drainage and the water environment mitigation measures:

- All site operatives will be made aware of the proximity of Millhall Burn / Gilston Burn.
- No work has been identified that would require entering any surface waterbodies. If such a need were identified onsite, BEAR Scotland's Environmental Team will be contacted (before works commence) to allow consideration of potential environmental effects.
- The abstraction or transfers of water from, discharges to, or the washing of tools in surface waterbodies will not be permitted.
- The Contractor will implement measures to minimise the risk of sediment or accidental spillages entering the road drainage system e.g., prior to works commencing any roadside gullies within the central reserve within 10m of work activities will be protected (e.g., utilisation of drain covers or similar) to ensure full segregation of the works from the road drainage system. The Contractor will inspect these periodically to ensure that they have not been removed, damaged, or interfered with and they will be cleaned of silt and debris as necessary.

- Appropriate measures will be implemented during resurfacing operations to limit the potential for wastes (i.e. red chips and excavated material) and materials (i.e. new red chips, surfacing material) to enter any gullies present on site. On completion of resurfacing operations, any gullies present on site will be visually checked to ensure they have not become blocked as a result of the scheme.
- All site personnel will be made aware of site spillage response procedures and in the event of a spill, all works associated with the spill will stop, and the incident reported to the Site Supervisor. Small spills that did not leave the site boundary and are cleaned up without material environmental harm or residual environmental impact would most likely not be required to be notified to SEPA or other authorities. However, all such incidents will be recorded and reported to BEAR Scotland's Environmental Team. In the event of a 'serious incident', SEPA will be notified without delay. Such notification will include: (i) the time and duration of the incident, (ii) a description of the cause of the incident, (iii) any effect on the environment as a result of the incident, and (iv) any measures taken to minimise or mitigate the effect and prevent a recurrence.
- All waste, vehicles, ancillary plant, NRMM and fuels will be stored in the compound(s) or laydown area and will be secured and located, if space is available, at least 10m from drainage entry points, in order to comply with GPP 5 'works and maintenance in or near water'. Refuelling will only be undertaken at designated refuelling areas (e.g., on hardstanding, with spill kits available, and >10m from drainage entry points, where practicable). Spill kits will also be available within all site vehicles and spill kits will be replenished onsite when required. Only designated trained and competent operatives will be authorised to refuel plant. Generators, and other ancillary plant and NRMM, where there is a risk of leakage of oil or fuel, will have internal bunding or will have a secondary containment system placed beneath them that meets 110% capacity requirements. Containment systems will also be emptied regularly. All waste, vehicles, ancillary plant, NRMM and fuels will also be stored in a manner that ensures they are protected from damage by collision or extremes of weather.
- Regular visual pollution inspections of the designated laydown area and work site (particularly near road drainage entry points) will be conducted (e.g., site walkover by engineer or Site Supervisor), especially during periods of heavy rain.
- All vehicles and NRMM onsite will have been regularly maintained, paying attention to the integrity of oil tanks, coolant systems, gaskets etc. A checklist will be present to make sure that the checks have been carried out.

Climate

BEAR Scotland, working on behalf of Transport Scotland, undertake carbon monitoring of major projects and operational activities. Emissions from activities are recorded using Transport Scotland's Carbon Management System. BEAR Scotland also undertakes resource efficiency activities to manage and reduce emissions contributing to climate change. The works will also extend the maintenance intervals

required for future works. In doing so, the service life of the trunk road is also extended.

During works there is potential for impacts as a result of the emission of greenhouse gases through the use of equipment, vehicles, and NRMM, material use and production, and transportation of material/waste. However, considering the nature, duration, size and scale of the scheme, and the mitigation detailed below, the risk of significant impacts to climate are considered to be negligible and adverse in magnitude.

Climate mitigation measures:

- Use of warm mix asphalt as standard.
- Local contractors and suppliers will be used as far as practicable to reduce fuel use and greenhouse gases emitted as part of the works.
- BEAR Scotland will adhere to its Carbon Management Policy.
- Where possible, waste will be removed to local waste management facilities.

Vulnerability of the project to risks

There will be no change to the likelihood of flooding on the M9 within the scheme extents upon completion of the works.

Works are restricted to areas of made ground on the M9 carriageway surface, with access to the scheme gained via the M9 mainline. As such, the proposed works' impacts on road traffic accidents are assessed to be of negligible magnitude.

A Site Environmental Management Plan (SEMP) will be produced by BEAR Scotland which sets out a framework to reduce the risk of adverse impacts from construction activities on sensitive environmental receptors. The Contractor will comply with all conditions of the SEMP during works and may be subject to audit throughout the contract.

Considering the above, the vulnerability of the project to of major accidents and disasters is considered to be low.

Assessment of cumulative effects

The proposed works are not anticipated to result in significant environmental effects. Due to the nature of the proposed works, no cumulative effects are anticipated with any other developments in the vicinity.

A search of the Scottish Road Works Commissioner's website ([map search](#)) has identified that BEAR Scotland will potentially be undertaking cyclic maintenance works on the M9 Junction 5 Onslip and the M9 Junction 4 Offslip during the barrier works. However, works will be for limited durations and will not extend the full period of the barrier works. Furthermore, they will both involve short diversions and will be unlikely to result in cumulative impacts with the M9 J4 to J5 Crossover VRS scheme.

In addition, a search using [Falkirk Council Planning - Map Search](#) identified four moderately sized planning applications within 300m of the scheme extents within the last two years:

- P/25/0283/FUL, awaiting decision – Construction of 37 dwellings, new access and associated works along with partial demolition and alterations to existing dwellings. – located approx. 285m southeast of the scheme.
- P/24/0226/COND02, unknown – Compliance with Condition 4 of P/24/0226/MS – Approval of conditions (site wide earthworks, burn restoration, access, demolition and associated enabling works. – located approx. 60m south of the scheme.
- P/26/0196/MS, awaiting decision – Approval of conditions for the construction of 49 dwellinghouses, roads, drainage, landscaping and associated works – located approx. 260m south of the scheme.
- P/20/0617/COND01, conditions discharged – compliance with condition for the construction of six dwellinghouses. – located approx. 105m south of the scheme.

In addition, there are approx. 13 small planning applications within 300m which relate to minor alterations to existing dwellings i.e. roof alterations, conversion of garages, installation of air source heat pump etc.

While it is not possible to know the exact timings for the above planning applications, given that the works will be restricted to the M9 carriageway and undertaken on a rolling programme therefore during off peak hours, it is unlikely that the proposed works will have a significant cumulative effect with any other future works in the area.

Assessments of the environmental effects

The M9 J4 to J5 Crossover VRS scheme lies within the buffer zone of qualifying species of the Firth of Forth SPA and Ramsar Site. A HRA has concluded that the works will not result in LSE on any of the qualifying species of the European Sites, and as such an Appropriate Assessment (AA) is not required.

As detailed in the Description of Main Environmental Impacts and Proposed Mitigation section, there are no significant effects anticipated on any environmental receptors as a result of the proposed works.

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 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) are situated in whole or in part in the Antonine Wall World Heritage Site Buffer Zone which is 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:

- Works are restricted to the replacement of barriers and extension of existing crossovers, with all works restricted to made ground on the M9 central reserve.
- Works are not expected to result in significant disturbance to protected species that may be present in the wider area
- The risk of major accidents or disasters is considered to be low.
- By replacing the barrier, this will improve the health and safety of the M9 carriageway at this location. In addition, the extension of the crossovers will allow for smoother traffic management arrangements for future works.
- Any potential impacts of the works are expected to be temporary, short-term, not significant, and limited to the construction phase.

Location of the scheme:

- A HRA has been undertaken which has confirmed that the works will not result in LSE on the qualifying features of the designated sites.
- While the scheme is located within the Antonine Wall World Heritage Site Buffer Zone, the works will be restricted to the M9 central reserve and will not result any impacts to this cultural heritage asset.
- The scheme is not located within any areas designated for landscape interests.
- Land use will not change as a result of the works.
- The works do not require any private land acquisition.
- The scheme does not lie within any sites designated for geology or soils

Characteristics of potential impacts of the scheme:

- The waste hierarchy will be followed to reduce waste to landfill.
- Works are programmed to take three weeks with works operating at night on a rolling programme, with the aim being to complete the noisiest works by 23:00.
- With good practice pollution prevention measures implemented onsite, there is a negligible risk of a pollution event e.g., compliance with the SEMP.

References of supporting documentation

F565 HRA - M9 J4 to J5 Crossover VRS

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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