



**TRANSPORT
SCOTLAND**
CÒMHDHAIL ALBA

Environmental Impact Assessment Record of Determination

M80 6-7 70 Seabegs

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Project Details

Description

BEAR Scotland has been commissioned by Highways Management (Scotland) Limited (HMG) to carry out the design for parapet and vehicle restraint systems (VRS) replacement works at the M80 6-7 70 Seabegs overbridge (OB) (which carries the B816 over the M80 DBFO).

The works required to replace the parapet and VRS are as follows:

- set up traffic management (TM),
- remove VRS (including beam, posts, and foundations) and parapets,
 - driven in VRS posts will be pulled out, where VRS posts are mounted in concrete these will be removed along with the concrete likely with a mini digger or similar.
 - the parapet method of removal will likely be to cut the existing posts at the edge beam and carry out localised repairs where required. No breakout is proposed.
- cast concrete foundations and insert posts,
- complete push testing to ensure suitability of post/foundation,
- build beam and secure posts,
- tidy site and remove TM.

Works are expected to be completed over 10 days/nights (07:00 – 19:00 and 20:00 – 06:00). TM is currently anticipated to consist of two-way signal-controlled TM on the B816. One pedestrian footway on the B816 will be left open throughout duration of works.

Location

The scheme lies approx. 0.5 km northeast of Castlecary in the Falkirk Council region, with road space, agricultural land and woodland surrounding the scheme (Figure 1).

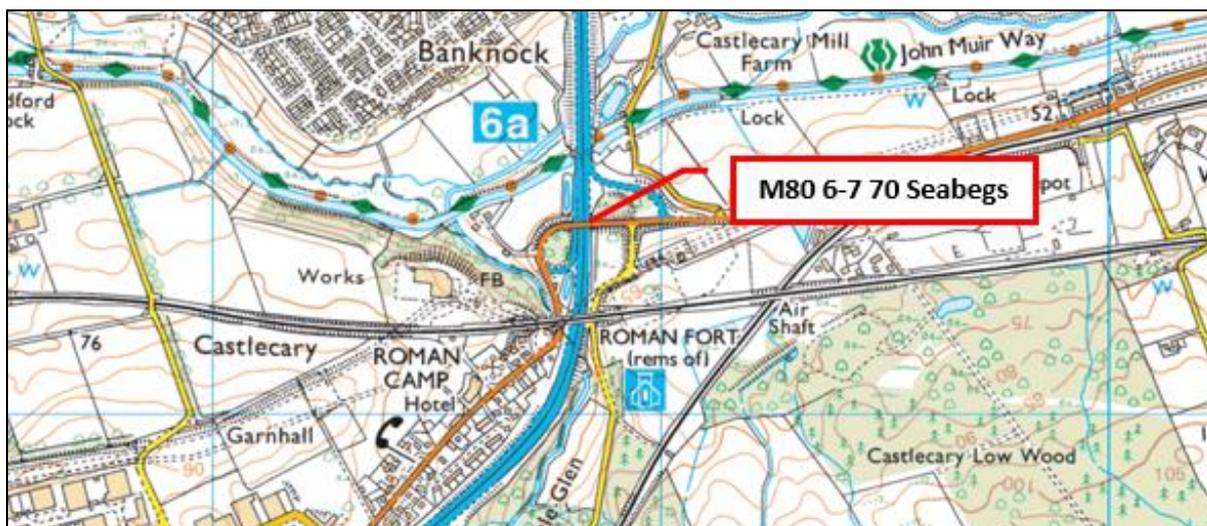


Figure 1. Extent of works. Source: Asset Management Performance System (AMPS). © Europa Technologies Ltd. Contains Ordnance Survey data © Crown copyright and database right 2018.

Description of local environment

Air quality

The scheme lies within the boundary of Falkirk Council, which has five [Air Quality Management Areas](#) (AQMAs) within its administrative boundary. The nearest AQMA, 'Croy', lies within the North Lanarkshire administrative boundary approx. 5.6 km southwest of the scheme and has been declared for particulate matter < 10 µm (PM₁₀)

There are no sites registered on the Scottish Pollutant Release Inventory ([SPRI](#)) for air pollutant releases within 1 km of the scheme.

Baseline air quality is mainly influenced by vehicles travelling along the motorway. Secondary sources are likely derived from vehicles travelling along the local road networks and day-to-day agricultural land management activities.

Cultural heritage

The [PastMap](#) and [Historic Environment Scotland](#) (HES) online mapping tools record two World Heritage Sites (WHS), four scheduled monuments and two listed buildings within 300 m of the scheme. The scheme lies within the 'Antonine Wall' WHS Buffer Zone, and 100 m north of the 'Antonine Wall' WHS Boundary. The scheduled monuments lie > 110 m from the scheme, and the listed buildings lie > 200 m from the scheme.

Of lesser cultural heritage value, thirteen undesignated cultural heritage assets (UCHAs) lie within 300 m of the scheme. There is no connectivity between the

scheme and the UCHAs, e.g., the nearest lies outwith the motorway boundary, approx. 35 m south of the scheme.

Landscape and visual effects

The scheme is not situated within a 'sensitive area' designated for landscape features e.g., [National Park](#) (NP), [National Scenic Area](#) (NSA).

Land use within 300 m of the scheme extents is categorised into the following: (i) motorways and major roads, (ii) rectilinear fields and farms, (iii) managed woodland, and (iv) industrial or commercial area.

The Landscape Character Type (LCT) in the study area is 'Lowland River Valleys – Central' ([Scottish Landscape Character Types](#)). The 'Lowland River Valleys – Central' LCT is characterised by well-defined corridors with flat valley floors, surrounded by dominating hills. Landcover is dominated by deciduous and mixed broad-leaf woodland ([Scotland's Environment](#)).

The scheme lies approx. 0.5 km northeast of Castlecary, with road space, agricultural land and woodland surrounding the M80 6-7 70 Seabegs OB. Approx. ten properties (including business premises) lie within 300 m of the scheme. The nearest property lies 130 m southeast of the scheme and all properties are screened from the scheme by woodland (30 m to 60 m wide). Views from the overbridge consist of the M80 motorway, distant agricultural farmland and roadside shelterbelt.

The [national scale land capability for agriculture](#) classifies land surrounding the scheme as being '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). Agricultural land surrounding the scheme forms a pattern of open and exposed fields containing predominantly pastoral grazing. Field patterns are an important landscape element, varying in size and shape to fit the local topography. Field boundaries, for example, highlight the landform by accentuating undulating land and flatter areas. Most field boundaries are post-and-wire fencing, with vegetative features further delineating field boundaries e.g., shrub hedgerow, rough grassland, ruderal herb stands, scrub and tree shelterbelt.

There are no areas of ancient woodland registered on the [Ancient Woodland Inventory Scotland](#) or native woodland on the [Native Woodland Survey of Scotland](#) with connectivity to the scheme extents. Woodland surrounding the scheme consists of a mixture of coniferous and broad-leaved deciduous woodland.

Biodiversity

The [NatureScot Sitelink](#) online mapping tools identifies that the scheme is not situated within, and does not share connectivity with, a 'sensitive area' designated for biodiversity features e.g., Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar, Site of Special Scientific Interest (SSSI), etc.

The scheme is not situated within a Local Nature Conservation Site (LNCS) or Local Nature Reserve (LNR) designated for biodiversity features.

An initial Preliminary Bat Roost Assessment (PRA) was undertaken, which identified the need for further surveys. This will be undertaken by a licensed bat ecologist prior to works commencing. Results from the further surveys will inform the requirements for licensing from NatureScot.

A search of NBN online mapping tool records no invasive non-native species (INNS), injurious weeds (as listed under the Weeds Act 1959), or invasive native perennials (as listed in the Trunk Road Inventory Manual) within the grassed verge adjacent to the scheme extents.

Geology and soils

The M80 within the scheme extents is not located within a [Geological Conservation Review Site](#) (GCRS), and there are no [Local Geodiversity Sites](#) (LGS) with connectivity to the scheme extents.

The [National Soil Map of Scotland](#) online mapping tool records the Generalised Soil Type and Major Soil Group in the study area as Brown Soils.

The [British Geological Survey](#) online mapping tool records that the superficial geology underlying the scheme extents is comprised of Glaciofluvial Sheet Deposits (gravel sand and silt). The bedrock underlying the scheme extents is comprised of 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 replace the parapets and VRS. Materials used will consist of:

- Steel parapet
- Safety barrier
- Concrete (safety barrier foundations)

Following best practice and where feasible, creation of a Site Waste Management Plan (SWMP) is recommended.

The scheme involves removal of steel parapets and VRS, with approx. 15 tonnes of steel (European Waste Catalogue Code: 17 04 05) to be removed from site.

Noise and vibration

Works are not located within a [Candidate Noise Management Area](#) (CNMA) or [Candidate Quiet Areas](#) (CQA).

The day-time modelled noise level (L_{night}) for the scheme extents exceed 80 decibels, dropping to between 65 and 70 decibels at the nearest Noise Sensitive Receptor (NSR) (residential property). Night-time modelled noise level (L_{night}) for the scheme extents ranges between 70 and 75 decibels, dropping to between 60 and 65 decibels at the nearest NSR ([Scotland's Noise Scotland's Environment](#)).

Baseline noise levels are mainly influenced by vehicles travelling along the motorway. Secondary sources are likely derived from vehicles travelling along local road network and day-to-day agricultural land management activities.

Population and human health

Approx. ten properties (including business premises) lie within 300 m of the scheme. The nearest property lies 130 m southeast of the scheme and all properties are screened from the scheme by woodland (30 m to 60 m wide). There are no sensitive receptors/land uses within 300 m of the scheme.

One local footpath crosses the M80 via the B816 within the scheme extents. Street lighting is present on the M80 6-7 70 Seabegs OB deck.

The B816 at the scheme location is a single carriageway with the national speed limit applying throughout. The Annual Average Daily Traffic (AADT) flow is 3,861 (ID: 990549) (2019 data) ([Road traffic statistics](#)) and is comprised of:

- 18 two wheeled motor vehicles,
- 3010 cars and taxis,
- 40 bus and coaches,
- 720 Light Goods Vehicles (LGVs), and
- 73 Heavy Goods Vehicles (HGVs).

The AADT flow recorded for pedal cycles is 13 (2019 data).

There are no congestion issues noted on the B816 within the scheme extents during the proposed working hours.

Road drainage and the water environment

A search of the Scotland's Environment Protection Agency ([SEPA](#)) River Basin Management Plan online mapping tool records no classified or unclassified surface waterbodies spanned by, culverted beneath or which share direct connectivity with the scheme extents.

A search of the Scotland's Environment (SE) online mapping tool determined that the M80 6-7 70 Seabegs OB lies on the 'Castle Cary' and 'Carron Sand and Gravel' [groundwaters](#) (which are also [Drinking Water Protected Areas](#)), which have both been classified as 'Good'.

The M80 6-7 70 Seabegs OB is not located within a [Nitrate Vulnerable Zone](#).

The SEPA indicative surface water online [flood mapping](#) tool records that the M80 6-7 70 Seabegs OB and B816, within the scheme extents, are not at risk of surface water flooding.

Road drainage is provided by roadside gullies.

Climate

The Climate Change (Scotland) Act 2009 sets out the target and vision set by the Scottish Government for tackling and responding to climate change ([The Climate Change \(Scotland\) Act 2009](#)). The Act includes a target of reducing CO₂ emissions by 80% before 2050 (from the baseline year 1990). The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 amended the Climate Change (Scotland) Act 2009 to bring the target of reaching net-zero emissions in Scotland forward to 2045 ([Climate Change \(Emissions Reduction Targets\) \(Scotland\) Act 2019](#)).

The Scottish Government has since published its indicative Nationally Determined Contribution (iNDC) to set out how it will reach net-zero emissions by 2045, working to reduce emissions of all major greenhouse gases by at least 75% by 2030 ([Scotland's contribution to the Paris Agreement: indicative Nationally Determined Contribution - gov.scot \(www.gov.scot\)](#)). By 2040, the Scottish Government is committed to reducing 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 and this commitment is being enacted through the Mission Zero for Transport ([Mission Zero for transport | Transport Scotland](#)). 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 a legally binding target of net-zero by 2045.

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 \(transport.gov.scot\)](#)).

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 by removal of parapets and VRS, as well as exhaust emissions from ancillary plant and vehicles. As a result, there is potential for dust, particulate matter, and exhaust emissions (DPMEE) to be emitted to the atmosphere.

However, the scheme is not located within an AQMA, and DPMEE associated with the construction phase will be localised to the works footprint and of a short duration. In addition, residential properties are set-back at least 130 m from the scheme extents and are screened by woodland (30 m to 60 m wide).

Considering the nature, duration, size, and scale of the scheme, and 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.

Proposed air quality mitigation measures:

- The works area will be swept after dust-generating activities, and waste will be contained and removed from site as soon as is practicable.
- 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).
- Where practicable, if powered generators are required, the use of mains electricity or battery powered ancillary plant will be considered in place of diesel or petrol alternatives.
- 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.

- Materials that have a potential to produce dust will be removed from site as soon as possible.
- Regular monitoring (e.g., by engineer or Clerk of Works) will take place when DPMEE generating activities are occurring. In the unlikely event that unacceptable DPMEE 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

Construction of the M80 road corridor and B816 is likely to have removed any archaeological remains that may have been present within the boundaries of the carriageway. The potential for the presence of unknown archaeological remains in the study area has therefore been assessed to be low. Moreover, the works do not entail any significant earthworks (e.g., only small post-holes required for VRS installation and driven posts will be used where possible to limit excavations) or vegetation clearance, and people, ancillary plant, vehicles, NRMM and materials are restricted to areas of made/engineered ground within the boundary of the B816. As such, there is negligible risk of disturbing or damaging previously undiscovered or unrecorded items of cultural interest.

Moreover, works within the WHS Buffer Zone are limited to VRS replacement (like-for-like replacement, prioritising driven posts (where possible) to limit excavations).

With the implementation of mitigation detailed below, the proposed works 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.

Proposed cultural heritage mitigation measures:

- Site personnel will be made aware that works will take place within the boundary of the 'Antonine Wall' WHS Buffer Zone. Toolbox Talk TTN-046 Archaeology will also be briefed to all site personnel.
- All site personnel 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 contacted for advice.

- People, ancillary plant, vehicles, NRMM and materials will be restricted to the made/engineered ground within the boundary of the B816 (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, vegetation clearance or works outwith the road boundary, 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, the scheme is not situated within a 'sensitive area' designated for landscape features e.g., NP, NSA, etc. Moreover, people, ancillary plant, vehicles, NRMM and materials are restricted to areas of made/engineered ground within the boundary of the B816, and construction works are programmed to be undertaken utilising a daytime and night-time working pattern (10 days/night only). As such, the visual impact of the works will be somewhat reduced.

In addition, there is no requirement for significant earthworks (e.g., only small post-holes required for VRS and driven posts will be used where possible to limit excavations) or vegetation clearance, and there is no requirement for the loss or deterioration of woodland/ancient woodland, or veteran / notable trees e.g., trees protected by a Tree Preservation Order (TPO).

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

Upon completion of the works, no residual impacts are anticipated e.g., renewed VRS and parapets will be the only discernible change.

Proposed landscape and visual effects mitigation measures:

- Construction vehicles will not be left in places where soil or vegetation can be damaged. If damage to road verge occurs this 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.

- 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.

Biodiversity

The scheme is not situated within, and does not share connectivity with, a 'sensitive area' designated for biodiversity features e.g., SAC, SPA, Ramsar, SSSI, etc.

There are no mammal species of conservation importance recorded within 2 km of the scheme.

There is no requirement for significant earthworks (e.g., limited to driven posts for VRS where practicable), destruction or removal of vegetation, permanent (or temporary) land-take, accommodation works, site clearance or locally gained resources. As such, the works do not involve any physical altering or removal of habitat or result in habitat fragmentation.

A temporary short-term increase in noise levels may cause disturbance to local wildlife. 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 parapet and VRS replacement. However, the number of construction vehicles and construction operatives required onsite is low given the scale and scope of works. In addition, any species in the area are likely to be accustomed to road noise on the M80 and the scheme is of short duration (10-days/nights). The potential for significant species disturbance within the area of likely construction disturbance is therefore somewhat diminished.

An initial PRA was undertaken, which identified the need for further surveys. This will be undertaken by a licensed bat ecologist prior to works commencing. Results from the further surveys will inform the requirements for licensing from NatureScot.

There are no INNS, injurious weeds or invasive native perennials recorded within the grassed verge adjacent to the scheme extents. In addition, there are no significant earthworks or vegetation clearance associated with the scheme, the scheme does not require permanent (or temporary) land-take, accommodation works, site clearance or locally gained resources, and there is no requirement to import topsoil. As such, there is limited potential to spread or introduce INNS, invasive native perennials, or injurious flowering plant species.

Considering the nature, duration, size, and scale of the scheme, and with implementation of mitigation detailed below, the proposed work 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.

Proposed biodiversity mitigation measures:

- Recommendations made following the further bat surveys will be strictly followed.
- Any unsupervised excavations/trenches > 0.5 m deep will be covered or have ramps installed when left unsupervised at the end of a working day.
- 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 BEAR's Environmental Team. Should a protected species be encountered or move within 50 m of the active works (including compounds), works will be temporarily halted until the animal(s) move at least 50 m 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 (and birds) to move away from the disturbance.
- 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, surface waterbodies etc.) to ensure minimal impact on nocturnal species.
- All equipment stored onsite will be checked at the start of each workday to ensure protected species, and any or other mammal species, are not present. Any storage containers/plant within the compound will also be secured overnight to prevent exploration by protected species (and any or other 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, to avoid mammals falling in and becoming trapped.

- 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: (i) unforeseen site clearance is required, (ii) unplanned works must be undertaken outwith the carriageway boundary, (iii) there is any deviation from the agreed plan, programme and/or method of working, (iv) nesting birds are found onsite.
- BEAR Scotland's Control Room will be contacted if there is a pollution incident.

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 like-for-like replacement of VRS and parapets, with all works restricted to made/engineered ground within the boundary of the B916. The work corridor is also not located within a GCRS, geological SSSI or LGS.

Considering the nature, size and scale 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.

Proposed mitigation measures:

- People, ancillary plant, vehicles, NRMM and materials are restricted to areas of made/engineered ground within the M80 carriageway and B816 local road boundary.
- Construction vehicles will not be left in places where soil or vegetation can be damaged. If damage to road verge occurs this must be lightly

cultivated or graded (upon completion of the works) to allow natural recolonization by local species and promote integration with existing landscape character.

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.

There will be limited consumption of materials and natural resources e.g., mainly attributed to steel parapets and VRS. Where possible, materials will be derived from recycled, secondary, or re-used origin as far as practicable within the design specifications, to reduce natural resource depletion.

As the scheme is less than £350,000 a SWMP is not required.

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.

Proposed material and waste mitigation measures:

- 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. Material 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, 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 and the edge of the bridge deck. 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 COSHH safety data sheets and the Special Waste Regulations 1996. Special waste will also not be mixed with general waste and/or other recyclables.

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 parapet and VRS replacement e.g., mini digger, Stihl saws etc. As a result, there is potential for noise and vibration effects.

However, the works are not located within a CNMA or CQA, and works will be completed over 10-days/nights, with the aim being to complete the noisiest works by 23:00. Works with the potential to induce worst-case scenario noise and vibration (use of chipping hammers, Stihl saws, excavation works, etc.) will also be intermittent, temporary, and short-lived. In addition, residential properties are set-back at least 130 m from the scheme extents and are screened by woodland (30 m to 60 m wide), and the proximity of road space suggests that residents will have a degree of tolerance to noise and disturbance. The potential for disturbance will therefore be somewhat diminished.

Considering the likely sources of noise and vibration, the distance from the point of generation to NSRs, 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.

Proposed noise mitigation measures:

- Where possible, the noisiest work operations (e.g., use of chipping hammers, Stihl saws, excavation works, etc.) 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 characteristic will (where practical) be shut down in intervening periods between site operations.
- The use of percussive hand-tools, 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.
- All compressors will be 'sound-reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed when in use.
- 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, vehicle travellers, and NMUs.

However, the scheme does not require permanent (or temporary) land-take, accommodation works, site clearance or locally gained resources, and there is no requirement for a Compulsory Purchase Order (CPO). Moreover, AADT flow on the B816 is low, TM will only be in place for 10-days/nights and no congestion issues are noted during the proposed construction hours. In addition, the proximity of road space suggests that pedestrians and NMUs will have a degree of tolerance to noise and disturbance.

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

Upon completion of the works, no residual impacts are anticipated in relation to population and human health:

Proposed population and human health mitigation measures:

- 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 and/or 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.
- Pedestrians and NMUs will be accommodated within TM arrangements (if required). If pedestrians and NMUs cannot be accommodated within TM, alternative provision will be provided.
- An edge protection system (EPS) will be utilised to prevent debris and sediment falling onto the road below. Sandbags will be located at the bottom of the containment systems and debris netting will cover the EPS.
- Journey planning information will be available for drivers online at the [trafficscotland.org](https://www.trafficscotland.org) website. Journey planning information will also be available for drivers online through Bear's social media platforms.
- 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.

Road drainage and the water environment

During VRS and parapet replacement 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 surface waterbodies connected to the scheme via drainage systems.

However, there are no classified or unclassified surface waterbodies spanned by, culverted beneath or which share direct connectivity with the scheme extents. Moreover, all land outwith the B816 road corridor is considered out-of-bounds to all construction staff during the works (e.g., no 'in-water' works required) and there is no requirement for land take, site clearance or resources from a waterbody. There is also no requirement for the abstraction or transfers of water from a waterbody. 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 GPPs or PPGs, utilisation of drain covers or similar, etc.), water quality is protected. The overall level of risk is therefore judged to be similar, or lower than that arising from road traffic accidents and spillages from current traffic travelling on the B816. Moreover, given the nature, duration, size and scale of the scheme, the risk of a serious accidental spillage occurring is low and the works will be completed over 10-days/nights, therefore the risk associated with a pollution incident is intermittent, temporary, and short-lived.

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

Proposed road drainage and water environment mitigation measures:

- 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 10 m of work activities will be bunded (e.g., utilisation of drain covers or similar) to ensure full segregation of the works from the road drainage system. The Contractor will inspect bunds periodically to ensure that they have not been

removed, damaged, or interfered with and they will be cleaned of silt and debris as necessary. If it is identified that bunds are not up to standard, the works will not commence until they have been reinstated to the condition, they were originally in.

- 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 10 m 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 >10 m 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 must 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 and the edge of the bridge deck) 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 must be present to make sure that the checks have been carried out.

Climate

Works to replace the parapets and VRS at the M80 6-7 70 Seabegs OB will extend the maintenance intervals required for future works. In doing so, the service life of the structure 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 adverse in magnitude.

Upon completion of the proposed scheme no residual impacts are anticipated on the climate.

Proposed climate mitigation measures:

- Local contractors and suppliers will be used as far as practicable to reduce fuel use and greenhouse gas emitted as part of the works.
- Where possible, waste will be disposed of at local waste management facilities.

Vulnerability of the project to Major Accidents and Disasters

There will be no change to the likelihood of flooding on the M80 or B816 within the scheme extents upon completion of the works.

Works are restricted to areas of made/engineered ground within the boundary of the B816, with access to the scheme gained via the M80 and M80 slip roads. TM will employ two-way signal-controlled traffic lights on the B816. Pedestrians and NMUs will be accommodated within TM arrangements (if required). As such, the proposed works' impacts on road traffic accidents is 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 SEMF during works and may be subject to audit throughout the contract.

Considering the above, the vulnerability of the project to risks 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. Any future BEAR Scotland schemes will be programmed to take into account already-programmed works and as such, any cumulative effect will be limited.

In addition, a search using [Falkirk Council Simple Search](#) identified no planning applications within 300 m of the scheme, therefore no cumulative impacts are anticipated from the works being undertaken at M80 6-7 70 Seabegs OB.

Assessments of the environmental effects

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 (EIA) 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:

- The total working area is less than 1 ha.
- Works are restricted to like-for-like replacement of VRS and parapets, with all works restricted to made/engineered ground within the boundary of the B816.
- Works are programmed to only take 10-days/nights to complete, with the aim being to complete the noisiest works by 23:00.
- Works are not expected to result in significant disturbance to protected species that may be present in the wider area.
- No in-combination effects have been identified.
- The risk of major accidents or disasters is considered to be low.
- By refurbishing the VRS and parapets, this will provide the M80 6-7 70 Seabegs OB with another life cycle.

Location of the scheme:

- Works are limited to like-for-like VRS and parapet replacement, therefore no impact upon the 'Antonine Wall' WHS Buffer Zone is anticipated.
- The scheme is not situated within, and does not share connectivity with, any 'sensitive area' designated for biodiversity features e.g., SAC, SPA, Ramsar, SSSI, etc.
- The scheme is not located within any areas designated for landscape interests.
- There are no surface waterbodies spanned by, culverted beneath or which share direct connectivity with the scheme extents.
- 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.
- The scheme is not located within a densely populated area.

Characteristics of potential impacts of the scheme:

- Any potential impacts of the works are expected to be temporary, short-term, not significant, and limited to the construction phase.
- With good practice pollution prevention measures implemented onsite, there is a negligible risk of a pollution event e.g., compliance with the SEMP.

- As the works are restricted to the like-for-like replacement of VRS and parapets, 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 impacts on the environment are expected during the operational phase as a result of the works.

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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