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Environmental Impact Assessment Record of Determination

A85 East of Lochearnhead- Embankment Works and Resurfacing

Contents

Project Details

Description

BEAR Scotland has been commissioned by Transport Scotland to carry out embankment stabilisation works and resurfacing of the carriageway on a section of the A85 trunk road east of Lochearnhead (see Figures 1 and 2 below).

Both schemes cover the same scheme extents with the embankment works involving the construction of a buried concrete road edge beam along the westbound (WB) verge of the A85 carriageway extending approximately 1,425 metres (m) and covering an area of 0.86 hectares. The beam dimensions are 0.3m wide and 0.5m deep and will be installed over a length of 780m. The WB verge will be reinstated above the concrete beam and grass seeded. Following the works, the height of the WB verge will be reduced across the whole scheme extents in line with the carriageway (1425m in total). Vegetation management may be required if deemed to be necessary.

The resurfacing works involve the resurfacing of the A85 eastbound (EB) and WB carriageways extending approximately 1,374m and covering an area of 0.98 hectares. Finalised design for the surface course and binder/base are still to be confirmed. Road markings and studs will be reinstalled following the works.

Embankment stabilisation works are programmed to commence in summer 2025, currently programmed for July, and will utilise a daytime working pattern (07:00 – 18:00) over 3 weeks. Resurfacing works will commence in September 2025 over 9 nights by utilising night-time working pattern (19:00-06:00). Changes to the programme may result in amendments to these dates.

Traffic management (TM) for the embankment works will consist of WB lane closures facilitated by two-way temporary traffic lights. TM for resurfacing works will consist of full night-time road closures with regular amnesties. Local access and non-motorised road users (NMRU's) will be accommodated within the TM as much as is reasonably practicable.

Location

The schemes are located on a semi-rural stretch of the A85 east of Lochearnhead, in the Stirling Council Local Authority. National grid references (NGR's) for the for the embankment works are NN 61602 24198 - NN 60238 23939 and NGRs for resurfacing works are NN 61593 24196 - NN 60281 23951.

Figure 1. Scheme extents (resurfacing scheme extents indicated by green markers; and embankment scheme extents indicated by red markers).

Description of local environment

Air quality

There are no Air Quality Management Areas (AQMAs) within 10km of the scheme extents.

There are no registered sites on the Scottish Pollutant Release Inventory (SPRI) located within 10km of the schemes.

There are no Air Quality Monitoring Stations (AQMS) within 10km of the scheme extents.

Due to the semi-rural location of the works, baseline air quality is likely to be primarily influenced by traffic travelling along the A85; with secondary sources likely derived by nearby land management activities.

Cultural heritage

The following cultural heritage features are recorded within 300m of the scheme (PastMap):

- Category C Listed Building 'Lochearnhead, Leckine, Maclaren Clan Burial Ground' (reference: LB50374) located 80m north-west of the scheme.
- Category B Listed Building 'Loch Earn, Dalveich, Cottage' (reference: LB50372) located 170m north of the scheme.

The following cultural heritage features of lesser importance are recorded within 300m of the scheme; these features are not designated protected assets (PastMap):

- 15 Historic Environment Records (HER's), the following of which overlap the footprint of the scheme extent:
  - 'Watching Brief: House Extension at Lechine Cottage, Lochearnhead' (reference: 6678)
  - 'Lime Quarry' (reference: 65396)
  - 'Leckine' (reference: 66006)
  - 'Lechine Cottage' (reference 99108)
- 7 National Records of the Historic Environment (NRHE), the following of which lie directly adjacent to the A85 trunk road:
  - 'Lime Quarry' (reference: 127029) located adjacent to the EB carriageway at a distance of 5m.
  - 'Lechine Cottage' (reference: 351825) located directly adjacent to the EB carriageway.

There are no Conservation Areas, Battlefields, World Heritage Sites, Garden and Designed Landscapes or Scheduled Monuments within 300m of the scheme extent.

Landscape and visual effects

The scheme is located wholly within the Loch Lomond and the Trossachs National Park (LLTNP) (Site ID: 8621) which is designated for the following general special qualities:

- A world-renowned landscape famed for its rural beauty
- Wild and rugged highlands contrasting with pastoral lowlands
- Water in its many forms
- The rich variety of woodlands
- Settlements nestled within a vast natural backdrop
- Famous through-routes
- Tranquillity
- The easily accessible landscape splendour

The scheme is not located within proximity to a National Scenic Area (SiteLink).

The scheme is located on a semi-rural stretch of the A85 east of Lochearnhead. The surrounding land is dominated by grazing pastures; montane scrub; freshwater

habitat; mixed woodland, including forestry plantations; and residential settlements. Loch Earn forms a dominant landscape feature to the south of the A85 trunk road.

The scheme is located within the Landscape Character Type (LCT) 'LCT 254-Straths and Glens with Lochs' which has the following key characteristics (NatureScot):

- Strongly enclosed by steep and often rugged hill slopes with lochs filling much of the space between, leaving only a narrow flatter margin against the loch shore.
- Lochs generally long and narrow.
- Narrow passes occur between some lochs. Subtle promontories and narrow beaches feature on loch shorelines, – these particularly appreciated in long views down the length of the lochs. Modification of natural lochs and water catchments in the Park, giving rise to a variety of structures including dams and aqueducts – many of these comprise distinctive 19th Century structures.
- Settlements often located at the head of lochs and major through roads are aligned through some of these glens and straths.
- Scattered traditional dwellings or clusters of buildings usually located close to alluvial pastures at the intersection with side glens and water courses on some loch shores.
- Tourism and recreation facilities along loch shores.
- Highland-type designed landscapes, grand houses, hunting lodges and associated features, policies and parklands occupy prime loch shore positions. Pier and timber boat houses are a common feature in association with houses and estates particularly on Loch Ard.
- Lochs are highly visible, with roads and cycle/walking routes aligned close to their shores.
- Long views are possible across open water to the Highland Summits and the combination of craggy towering hills and smooth water is an essential component of the scenic richness of the National Park.

The A85 Trunk Road, within the North West, connects Perth with Crianlarich and Tyndrum to Oban. The Perth to Crianlarich section commences at the Crieff Road Roundabout within Perth (including the roundabout) leading generally westwards for a distance of 81 kilometres to (but excluding) the A85 / A82 Crianlarich Roundabout. The Tyndrum to Oban section commences at the A82 / A85 Tyndrum junction leading generally westwards for a distance of 57 kilometres to its junction with the A816 within Oban (excluding the roundabout at Argyll Square). The A85 is a single carriageway along its length.

Biodiversity

There are no European Sites, such as Special Areas of Conservation (SAC), Special Protection Areas (SPA), or Ramsar, within 2km of, or with connectivity to, the scheme.

The Dalveich Meadow Site of Special Scientific Interest (SSSI) (Site ID: 493) lies above the level of the A85 approximately 60m south of the works. The SSSI is designated for lowland calcareous grassland and lowland neutral grassland.

There are no other locally or nationally designated sites for biodiversity features (e.g. Local or National Nature Reserves) located within 300m of the scheme (SiteLink).

The National Biodiversity Network (NBN) Atlas holds several records of bird species within 2km of the scheme (the search criteria included only records during the past ten years, and which have open-use attributions (OGL-CC0-CC-BY). Under the Wildlife and Countryside Act 1981 (as amended), all wild birds and their active nests are protected, with certain species receiving additional protections.

The NBN Atlas holds no records of injurious weeds or invasive non-native species (INNS) (as listed in the Network Management Contract (NMC)) under the same search criteria; however, this does not preclude their potential presence in the area.

The Transport Scotland Asset Management Performance System (AMPS) holds three records of rosebay willowherb (*Chamaenerion angustifolium*) within 300m of the scheme. There are no INNS or injurious weeds recorded within the footprint of the scheme extents.

Habitat in the surrounding area is dominated by grazing pastures; montane scrub; freshwater habitat; mixed woodland, including forestry plantations; and residential settlements.

There is one area of woodland as listed on the Ancient Woodland Inventory (AWI) approximately 190m north of the scheme with antiquity listed as 'other (on Roy map)'.

There are no Tree Preservation Orders (TPO's) designated by LLTNP within 300m of the scheme.

A Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) of the works disturbance buffer was conducted by the BEAR Scotland NW Environment Team on 5 June 2025.

Geology and soils

There are no Geological Conservation Review Sites (GCRS's) or SSSI's designated for geological features within 300m of the scheme (SiteLink).

Component soils to the east of the scheme extent are mineral alluvial soils with peaty alluvial soils. The parent materials are recent riverine and lacustrine alluvial deposits. Component soils to the west of the scheme extent are humus-iron podzols with peaty gleys. The parent materials are drifts derived from arenaceous schists and strongly metamorphosed argillaceous schists of the Dalradian Series (Scotland's Soils).

Soils in the area around the scheme extent are comprised of Class 0 mineral soils, and peatland habitats are not typically found on such soils (Carbon and Peatland Map 2016).

Bedrock geology within the scheme extent is comprised of Pitlochry Schist Formation- psammite and semipelite (Scottish Geology Trust).

Material assets and waste

The proposed embankment works involve the construction of a buried concrete road edge beam along the WB abutting carriageway; and the reinstatement and seeding of the verge above the concrete beam. Verge height reduction will also be conducted along the full scheme extent. Excavation is required as part of the works with excavated material to be reused within the scheme extents where possible. Vegetation management may be required if deemed to be necessary. Materials will consist of:

- Approximately 105m^3 of Portland cement
- Approximately 23.5m^3 of topsoil
- Grass seeds
- Plywood boarding/joint boards

The proposed resurfacing works are required to resurface the worn carriageways (EB and WB), remove the surface course and repair structural defects. Road markings and studs will also be installed. Materials used will consist of:

- Asphaltic materials (TS2010 surface course, warm mix AC20 binder course and warm mix AC32 base course)
- Sub-base material
- Bituminous emulsion bond coat

- Milled in road studs
- Thermoplastic road marking paint.

Individual scheme values do not exceed the value for the requirement for a Site Waste Management Plan (SWMP).

The contractor is responsible for the disposal of road planings and this has been registered in accordance with the Paragraph 13 (a) waste exemption issued by SEPA, as described in Schedule 3of the Waste Management Licensing Regulations 2011 (exemption number: WML/XS/2011894).

Soil waste generated from embankment works will be reused on site where possible, with remaining to be disposed of in a licenced waste facility. Soil material will be tested for contaminants prior to its disposal.

No site compound is required for these works. Storage of plant and equipment will be within TM on the A85 carriageway. No coal tar has been highlighted as present along the scheme extent.

Noise and vibration

For residential, community and commercial receptors refer to the 'Population and Human Health' section below.

The works do not fall within a Candidate Noise Management Area (CNMA) as defined by Transport Scotland's Transportation Noise Action Plan (TNAP) 2019-2023.

Noise modelled data from Environmental Noise Directive (END) Round 4 Noise Mapping indicates annual average noise level for day, evening and night (Lden) as between 55 and 60dB at the scheme location (SpatialData).

Due to the semi-rural location of the scheme, baseline noise levels are likely to be primarily influenced by traffic travelling along the A85; with secondary sources derived from nearby land management activities.

Population and human health

The scheme lies on a semi-rural stretch of the A85 east of Lochearnhead. There are approximately 15 residential and/or commercial properties within 300m of the scheme, the closest of which lie directly adjacent to the EB carriageway with minimal acoustic or visual screening.

There are 4 local access points adjacent to the EB carriageway within the footprint of the scheme extent.

There are no laybys, parking facilities, paved footways, bus stops or pedestrian facilities within the footprint of the scheme.

There are no National Cycle Routes or walking routes designated by WalkHighlands within 300m of the scheme.

There is one Core Path which runs parallel to the EB carriageway at a distance of 30m at its closest point the scheme (core path reference number: S1042).

In 2024, the annual average daily flow (AADF) of traffic was estimated on the A85 at a site 13km east of the scheme (Site ID: 0000ATC00001) and accounted for 1,978 vehicles, with 14.7% of these heavy goods vehicles (HGVs) (Transport Scotland Traffic Count Data).

TM for embankment works will involve WB lane closures with two-way temporary traffic lights. TM for resurfacing works will involve full night-time road closures with regular amnesties.

Road drainage and the water environment

The scheme extent and surrounding area is underpinned by the Killin, Aberfeldy and Angus Glens groundwater (ID: 150669). This is 3741.1 square kilometres in area and in 2023 was assigned ‘Good Ecological Potential’ by the Scottish Environment Protection Agency (SEPA) under the Water Framework Directive (WFD) (SEPA).

Loch Earn is a lake (ID: 100251) in the River Earn catchment of the Scotland river basin district. It is 9.5 square kilometres in area and lies parallel to the south of the scheme at a distance of 15m at its closest point. The water body has been designated as a heavily modified water body on account of physical alterations that cannot be addressed without significant impacts on water storage for hydroelectricity generation. In 2023, it was assigned ‘Moderate Ecological Potential’ by SEPA under the WFD (SEPA).

Beich Burn is a river (ID: 6822) in the River Earn catchment of the Scotland river basin district. The main stem is approximately 10.2 kilometres in length and it is culverted under the A85 90m east of the scheme. The water body has been designated as a heavily modified water body on account of physical alterations that cannot be addressed without a significant impact on water storage for hydroelectricity generation. In 2023, it was assigned ‘Good Ecological Potential’ by SEPA under the WFD (SEPA).

There are several unclassified waterbodies, drains, springs in proximity to the scheme and culverted under the A85 within the scheme extent (SEPA).

SEPA Flood Map has highlighted a medium to high risk of river flooding within the scheme extent (i.e. a 0.5-10% chance of flooding each year). There are also small areas which are of high risk of surface water and small watercourses flooding (i.e. a 10% chance of flooding each year).

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 (transport.gov.scot)).

Description of main environmental impacts and proposed mitigation

Air quality

Construction activities associated with the proposed works have the potential to temporarily cause local air quality impacts. The main sources during resurfacing works are likely to be dust generated by breaking out of materials or cold milling in preparation of carriageway resurfacing. During the embankment works, the main sources are likely to be from dust generated by excavation and vegetation management if deemed to be required. For both schemes, there is also the potential for air quality impacts from exhaust emissions from ancillary plant and vehicles. As a result, there is potential for dust, particulate matter, and exhaust emissions to be emitted to the atmosphere. However, taking into account the nature and scale of the works and the following mitigation measures, the risk of significant impacts to air quality are considered to be low.

- 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 non-road mobile machinery (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 generating air pollution are occurring. In the unlikely event that unacceptable levels of air pollution 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.
- All delivery vehicles carrying material with dust potential will be covered when travelling to or leaving site, preventing the spread of dust beyond the work area.

- Material stockpiles will be reduced as far as is reasonably practicable by using a 'just in time' delivery system. All material will also be stored on made ground.
- Any stockpiled material on site will be monitored daily to ensure no risks of dust emissions exists.
- Materials will be removed from site as soon as is practicable.
- Good housekeeping will be employed throughout the work.

With the above mitigation measures in place, it is anticipated that any air quality effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this Record of Determination (RoD).

Cultural heritage

Although two Listed Buildings lie within proximity to the scheme, there will be no works carried out on or near the Listed Buildings and no impacts are expected.

A number of HERs and NRHEs are recorded within the footprint of the scheme extents, however none of these records hold statutory protection. Furthermore, all works are confined to previously engineered ground with minimal excavation required. Therefore, the likelihood of encountering historical artifacts associated with these records is considered to be low.

It is assessed that the planned works will not adversely impact the value of cultural heritage interests with the following mitigation measures in place:

- If there are any unexpected archaeological finds, works will stop temporarily in the vicinity, the area will be cordoned off and a member of the BEAR Environment team will be contacted for advice.
- Laydown areas will be sensitively located (e.g., on areas of made ground) to avoid areas of cultural heritage interest where possible.
- There will be no storage of plant, materials or equipment against buildings, bridges, walls or fences.

With the above mitigation measures in place, it is anticipated that any cultural heritage effects associated with the proposed scheme are unlikely to be significant. This receptor is not considered further in this RoD.

Landscape and visual effects

The overlapping schemes are located wholly within LLTNP. The works will create a short-term impact on the landscape character and visual amenity during the construction period as a result of the presence of construction plant, vehicles, and

TM. However, people, ancillary plant, vehicles, NRMM and materials will be restricted to areas of made/engineered ground on the A85.

The resurfacing works will be undertaken at night time on a rolling programme and, therefore, the visual impact of the resurfacing works will be somewhat reduced. Following the works no residual impacts are expected, the visual appearance will remain largely unaffected, with a renewed road surface being the only discernible change.

The embankment works will be undertaken during the day time and there is potential for some minor vegetation clearance associated with the verge works. However, these works are of a highly localised scale, restricted to the A85 trunk road boundary and will be limited to the minimum area and amount required for the construction of the concrete beam. Although the works require construction of a concrete beam within the A85 WB verge and minor reduction of the verge height and potential of vegetation management, the verge will be top soiled and grass seeded creating no significant visual changes following the completion of the works (i.e. when complete, the visual appearance will remain largely unaffected with minor reduction of the verge height and potential for vegetation cut back being the only discernible changes).

In addition, the following mitigation measures will be in place during works:

- LLTNP will be notified of the works and any additional mitigation measures, if received, will be adhered to.
- Vegetation clearance and verge excavations will be limited to the amount necessary to complete the embankment stabilisation works.
- Throughout all stages of the works, the site will be kept clean and tidy, with materials, equipment, plant and wastes appropriately stored, reducing the landscape and visual effects as much as possible.
- Works will avoid encroaching on land and areas where work is not required or not permitted. This includes general works, storage of equipment/containers and parking.
- Where applicable, upon completion of the works, any damage to the local landscape will be reinstated as much as is practicable.
- The site will be left clean and tidy following construction.

With the above mitigation measures in place, it is anticipated that any landscape and visual effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Biodiversity

The scheme is not situated within a 'sensitive area' designated for biodiversity features e.g., Special Area of Conservation, Special Protection Area, Ramsar, SSSI, etc.

In general, activities associated with the works undertaken on site could potentially have a temporary adverse impact on biodiversity in the wider area as a result of an increased vehicle presence and the potential for noise and light disturbance to protected species and pollution of habitats. There is also the potential for additional adverse impacts associated with the embankment works, which involves verge working and excavation with potential for minor vegetation clearance.

A PEA and PRA were conducted to assess the ecological features present, or potentially present, within the site boundary and its surrounding disturbance buffers. Although a number of signs of mammal species were noted within the survey area, no permanent resting places were identified. Further surveys and mitigation measures, ensuring compliance with wildlife legislation and regulatory requirement, will be undertaken as required prior to the works commencing.

Although no evidence of nesting birds was identified during the PEA, nesting bird checks will be undertaken in instances of vegetation management. If nesting birds are found during the pre-works checks, further consultation and/or licences will be sought and adhered to as required.

The PEA identified several pockets of rhododendron and Himalayan balsam, an INNS of plant, within the works area; these will be managed as per NW Landscape Management plan and disposed of accordingly if required. Mitigation measures will be detailed within the SEMP.

Pollution controls and good practice measures to reduce impacts of works on the local environment will be detailed in the Site Environmental Management Plan (SEMP) and adhered to on site.

To mitigate impacts on biodiversity features throughout works, the following measures will be put in place:

- Works will be strictly limited to areas required for access and to carry out the works. Unnecessary encroachment onto terrestrial or aquatic areas will not be tolerated.

- A pre-works nesting bird check will be conducted no more than 48 hours prior to vegetation management works commencing. If nesting birds are found,

further consultation and/or licences will be sought if required. If required, all conditions of any licences will be adhered to.

- If an active bird nest is found in vicinity of the works, all works within 30m of the nest will stop until the BEAR Scotland Environment Team can provide advice.

- Vegetation clearance will be limited to the minimum amount necessary and restricted strictly to the trunk road boundary.

- All construction operatives will be briefed through toolbox talks prior to works commencing, which will be included in the SEMP. The toolbox talks will provide information on the legislation, general ecology, and best practice measures for relevant protected species.
- Site personnel will remain vigilant for the presence of any protected species throughout the works period. Should a protected species be noted during construction, works will temporarily halt until the species has sufficiently moved on. Any sightings of protected species will be reported to the BEAR Scotland Environmental Team.
- Artificial lighting during night works/ low light levels will be directed away from areas of woodland and waterbodies as far as is safe and reasonably practicable.
- Personnel will remain vigilant for the presence of INNS or injurious weeds in road verges throughout the works period. Should any INNS be identified in working areas, works will be restricted to a 7m buffer of any growth where reasonably practicable.
- If works within 7m of Himalayan balsam and rhododendron growth are required, INNS will be managed as per SEPA 'Control of Plants in or near to Water' and biosecurity measures will be followed.
- A 'soft start' will be implemented on site each day. This will involve switching on vehicles and checking under/around vehicles and the immediate work area for mammals prior to works commencing to ensure none are present and that there is a gradual increase in noise.
- Any excavations, exposed pipes/drains, or areas where an animal could become trapped (e.g. storage containers) will be covered over when not in use, at the end of each shift, and following completion of the works to avoid animals falling in and becoming trapped.
- If fencing is utilised at any point during the works, a gap of 200mm from ground level will be provided, allowing free passage for mammals and preventing entrapment.

With the above mitigation measures in place, it is anticipated that any biodiversity effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Geology and soils

Resurfacing works will be restricted to the A85 carriageway, and as such are not anticipated to result in change to or have an adverse impact on geology and soils. The schemes are not located within a site of geological significance and all works are restricted to the trunk road boundary and verge. Although, the embankment works include excavation, verge works and potential for minor vegetation clearance, the works are confined to the engineered ground of A85 trunk road. In addition, any excavations will be carried out with good practice measures detailed in the SEMP as follows:

- Excavated soil and debris will be stored in a designated area on level ground where practicable.
- If excavated soil from embankment works is to be re-used on site, then it will be wetted (if necessary) during periods of dry weather to prevent drying out.
- Mitigation measures to prevent contamination of soils through loss of containment will be strictly adhered to.
- The parking of machinery/personnel and storage of equipment on road verges will be minimised as far as is reasonably practicable.
- Upon completion of the works, any damage to the local landscape (i.e. damage to grass verges) will be reinstated as much as is practicable.
- Topsoil and subsoil reused on site will be spread evenly in a single layer <200mm in height to ensure the soil profile is maintained across the works location and grass seeded.
- Multiple handling of soil derived from excavations will be minimised.
- Topsoil reused on site will not be traversed by heavy machinery.
- The Silt Toolbox Talk will be included in the Site Environmental Management Plan and delivered on site.
- The extent and duration of exposed soil will be kept to the minimum required for the works.

With the above mitigation measures in place, it is anticipated that any geology and soils effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Material assets and waste

There is potential for impacts as a result of resource depletion through use and transportation of new materials. However, materials will be sourced locally where possible and the following mitigation measures will be put in place:

- Materials will be sourced from recycled origins as far as reasonably practicable within design specifications.
- Care will be taken to order the correct quantity of required materials to prevent the disposal of unused materials.
- Where possible, minimal packaging will be requested on required deliveries to reduce unnecessary waste and production of packaging materials.

There is potential for impacts during works as a result of the improper storage or disposal of waste. The following mitigation measures will be put in place:

- The waste hierarchy (Reduce, Reuse, Recycle and Dispose) will be employed throughout the construction works.
- The subcontractor will adhere to waste management legislation and ensure they comply with their Duty of Care.
- Containment measures will be in place to prevent debris or pollutants from entering the surrounding environment.
- Excavated material generated from embankment works will be re-used on site where possible.
- Road planings generated from resurfacing works will be re-used or recycled under a SEPA Paragraph 13(a) waste exemption and in line with BEAR Scotland's Procedure 126: The Production of Fully Recovered Asphalt Road Planings.
- All wastes and unused materials will be removed from site in a safe and legal manner by a licensed waste carrier upon completion of the works. The appointed waste carrier will have a valid SEPA waste carrier registration, a copy of which will be provided to and retained by BEAR Scotland as early as possible.
- All appropriate waste documentation will be present on site and be available for inspection. A copy of the Duty of Care paperwork will be provided and filed appropriately in accordance with the Code of Practice (as made under Section 34 of Environmental Protection Act 1990 as amended).
- Re-use and recycling of waste will be encouraged and the subcontractor will be required to fully outline their plans and provide documentary evidence for

waste arising from the works (e.g., waste carrier's licence, transfer notes, and waste exemption certificates).

- Staff will be informed that littering will not be tolerated. Staff will be encouraged to collect any litter seen on site.
- Where applicable, all temporary signage will be removed from site on completion of the works.

With the above mitigation measures in place, it is anticipated that any material assets and waste effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Noise and vibration

Construction activities associated with the proposed works have the potential to cause noise and vibration impacts through the use of equipment and construction vehicles for the proposed activities. However, the works are not located within a CNMA, and the proximity of road space suggests that residents within the local area will have a degree of tolerance to noise and disturbance. Embankment works will be carried out during a daytime working pattern; and resurfacing works undertaken over 9 nights on a rolling programme, with the aim being to complete the noisiest works by 23:00. Works with the potential to induce worst-case scenario noise and vibration will also be intermittent, temporary, transient and short-lived.

The road surface is in a poor condition, with a series of defects. Replacing the life-expired surface course with TS2010 road surfacing affords the benefits of a reduction in mid-to-high frequency traffic noise and a reduction in ground vibrations. As a result, upon completion of the work, noise associated with the movement of vehicles on the trunk road should decrease post construction.

The following mitigation measures will be put in place:

- Where possible, the noisiest work operations during resurfacing works (e.g., cold milling, using breakers (jackhammers), chipping hammers, use of rollers, etc.) will be completed before 23:00.
- The Environmental Health Officers (EHO) for LLTNP and Stirling Council will be notified of resurfacing night works.
- Local residents (i.e., those within 300m) will be notified in advance of the works, likely by a letter drop, which will contain details of the proposed timings and duration of the works, in addition to contact details for the Site Supervisor.

- The Best Practicable Means, as defined in Section 72 of the Control of Pollution Act 1974, will be employed at all times to reduce noise to a minimum. On-site construction tasks will be programmed to be as efficient as possible, with a view to limiting noise disruption to local sensitive receptors.
- All site personnel will be fully briefed in advance of works regarding the need to minimise noise during works and of the site-specific sensitivities.
- Operatives will be briefed using the 'Being a Good Neighbour' toolbox talk prior to commencement of the works.
- Drop heights from vehicles and NRMM will be kept to a minimum to minimise noise when unloading.
- All plant, machinery and vehicles will be switched off when not in use.
- All plant will be operated in such a way that minimises noise emissions and will have been maintained regularly to the appropriate standards.
- Where fitted, and where permitted under Health and Safety requirements, white noise reversing alarms will be utilised during construction.
- Where ancillary plant such as generators are required, they will be positioned so as to cause minimum noise disturbance. Where deemed necessary, acoustic screens will be utilised.

With the above mitigation measures in place, it is anticipated that any noise and vibration effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Population and human health

During construction, activities undertaken on site may have temporary adverse impacts on local residents, vehicle travellers, and non-motorised road users (NMUs) as a result of construction presence, and associated noise and delays due to traffic management measures. There are 4 access points located within the scheme extent; however local access will be granted where required.

A number of properties lie within 300m of the scheme, with the nearest of these located directly adjacent to the EB carriageway and therefore there is potential for disturbance from noise and vibration.

TM for both schemes will be designed in line with Chapter 8 of the Traffic Signs Manual and will accommodate non-motorised road users and all construction activities will operate in line with good practice measures as outlined in the SEMP.

Road users will be informed of works through a media release, which will provide details of construction dates and times. The works will be of limited duration and will move progressively along the full scheme extent.

With the following mitigation measures in place, the risk of significant impacts on population and human health is considered to be low:

- Notification will be issued to local residents and local public transport operators prior to commencement of the works, advising of any proposed works and expected restrictions.
- Local access will be granted as required.
- Any changes of schedule (e.g. change from night-time works to daytime works or vice versa) will be communicated to local residents throughout the programme.
- Appropriate provisions / measures will be implemented within the traffic management to allow the safe passage of NMUs of all abilities through the site.
- 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 BEAR's social media platforms.

With the above mitigation measures in place, it is anticipated that any population and human health effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Road drainage and the water environment

There is potential for temporary impacts on the water environment due to embankment works and the operation of plant within proximity to watercourses and freshwater bodies which may lead to potential changes in water quality from pollution events (either by accidental spillage of sediments, particulate matter, chemicals, fuels or by mobilisation of these in surface water caused by rain). No in-water works will take place and there is no requirement for the abstraction or transfers of water from, or discharges to, a waterbody. As such, the potential for a direct pollution incident within a waterbody is unlikely. Experience gained from BEAR maintenance schemes elsewhere on the network has shown that where standard good working practice is adopted (e.g., adherence to SEPA good practice guidance, utilisation of drain covers or similar, etc.), water quality is protected.

The works may result in potential direct or indirect effects on surrounding waterbodies. The following mitigation measures will be put in place to reduce the risk of pollution incidents as a result of works:

- The scheme will not entail any in-stream works.
- Standard working practices to comply with The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) for works in or near water will be detailed in the SEMP and adhered to on site.
- No discharges into any watercourses or drainage systems will be permitted. Appropriate containment measures will be in place to prevent any loss of construction materials into the water environment.
- An incident response (contingency) plan will be put in place to reduce the risk from pollution incidents or accidental spillages. All necessary containment equipment, including suitable spill kits (for oil and chemicals) will be available on site, quickly accessible if needed, and staff trained in their use.
- All spills will be logged and reported. In the event of any spills into the water environment, all works will stop and the incident will be reported to the project manager and the BEAR Scotland Environmental Team. SEPA will be informed of any such incident as soon as possible using the SEPA Pollution Hotline.
- Felled vegetation material (where necessary) will be disposed of appropriately in line with the NW NMC Contract (Schedule 5, Appendix 0/1, 3010SR Maintenance of Established Trees and Shrubs).
- Any vegetation cuttings will not be disposed of in the watercourse. Where cuttings do not contain any invasive species, they will be left to compost in piles at a suitable area on-site at least 10m away from any watercourses or surface water drains.
- All plant and equipment will be regularly inspected for any signs of damage and leaks. A checklist will be present to make sure that the checks have been carried out.
- Storage of hazardous material, oil and fuel containers will be distanced more than 10m away from any watercourses.
- If required, a designated refuelling area will be identified. Fuel bowsers will be stored on an impermeable area and be fully bunded. This will be distanced more than 10m from any watercourses.
- During refuelling of smaller mobile plant, a funnel will be used, and drip trays will be in place. Care will be taken to reduce the chance of spillages. Spill kits will be quickly accessible to capture any spills should they occur. The ground

/ stone around the site of a spill will be removed, double bagged and taken off site as special waste.

- Generators and static plant may have the potential to leak fuel and / or other hydrocarbons and will have bunding with a capacity of 110%. If these are not bunded then drip trays will also be supplied beneath the equipment with a capacity of 110%.

With the above mitigation measures in place, it is anticipated that any road drainage and the water environment effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Climate

Construction activities associated with the proposed schemes have the potential to cause local air quality impacts as a result of the emission of greenhouse gases through the use of vehicles and machinery, material use and production, and transportation of materials to and from site. The following mitigation measures will be put in place:

- BEAR Scotland will adhere to their Carbon Management Policy.
- 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, materials will be sourced locally to reduce greenhouse gas emissions associated with materials movement, and waste will be removed to local waste management facilities.

With the above mitigation measures in place, it is anticipated that any climate effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Vulnerability of the project to risks

There will be no change to the likelihood of flooding on the A85 within the scheme extents upon completion of the works. Works will be programmed as far as is reasonably practicable to avoid periods of adverse weather or heavy rainfall.

Works are restricted to areas of made and engineered ground (including road verge) of the trunk road, with access to both schemes gained via the A85. TM for the resurfacing works will involve night time road closures with regular amnesties. TM for embankment works will involve WB lane closures with two-way temporary traffic lights. Local residents will be notified of working hours and provided with appropriate contact information. There are no pedestrian facilities located within the scheme

extents, however, pedestrians or other NMUs will be accommodated within the TM setup where required.

The works will not result in any change in vulnerability of the A85 carriageway, or in severity of major accidents/disasters that would impact on the environment.

These measures, along with standard working practices, will be detailed in the SEMP and adhered to on site. The vulnerability of the project to risks of major accidents and disasters is considered to be low.

Assessment 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 LLTNP Planning Portal identified no approved planning applications within 300m of the scheme within the last six months.

A search of the Scottish Roads Works Commissioner website (Map Search) has identified that there are no roadworks planned for the same period as the proposed works and no cumulative effects are anticipated with any other developments in the vicinity.

BEAR Scotland programme all of their proposed works in line with appropriate guidance and contractual requirements. All schemes are programmed to take into account existing and future planned works, with a view of limiting any cumulative effects relating to traffic management. As a result of this exercise, where a potential for cumulative impacts is identified, BEAR will reprogramme schemes to avoid / limit any cumulative effects or will utilise existing traffic management to complete multiple schemes at once. This approach allows BEAR Scotland to effectively manage the potential cumulative effects as a result of traffic management, resulting in minimal disruption to users of the Scottish trunk road network.

Overall, it is unlikely that the proposed works will have significant cumulative effects with any other future works in the area.

Assessments of the environmental effects

As detailed in the Description of Main Environmental Impacts and Proposed Mitigation section within this Record of Determination, 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 completed works (together with any area occupied by apparatus, equipment, machinery, materials, plant, spoil heaps, or other such facilities or stores required during the period of construction) are situated in whole within the Loch Lomond and the Trossachs National Park, 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:

- Resurfacing activities are restricted to an area of 0.893 ha along the A85 for a length of 1374m; with embankment works restricted to an area of 0.86ha and a length of 1425m.
- Works are not expected to result in significant disturbance to nearby receptors or protected species that may be present in the wider area.
- Works will be temporary, localised and of short duration, with embankment works completed during day time hours.
- Localised pockets of INNS were identified during the site visit and measures to mitigate the potential for disturbance/spread of INNS will be detailed in the SEMP.

- Ecological surveys to date have identified several trees and structures with PRF's in proximity to the scheme and further assessment of these will be undertaken as required. No other protected species shelters were identified. Nesting bird checks will be undertaken prior to vegetation management works (if deemed to be necessary) if works are to be undertaken during bird breeding season (March to August inclusive).
- The risk of major accidents or disasters is considered to be low.
- Any potential impacts of the works are expected to be temporary, short-term, non-significant, and limited to the construction phase.
- Residual impacts are considered to be beneficial for the travelling public which may use this stretch of carriageway. In addition, improved road surface will reduce the road noise levels and in turn will reduce disruption to the receptor located in proximity to the scheme. Furthermore, embankment works will provide lateral restraint to the A85 carriageway and deter cracking of the road surface.

Location of the scheme:

- The scheme will be located within the existing A85 trunk road boundary (carriageway surface and verge).
- The scheme is located within the Loch Lomond and the Trossachs National Park. Resurfacing works entail like-for-like resurfacing and no change to the visual landscape is expected. Furthermore, following the embankment works local landscape will largely remain the same with reduced height of the verge being the only visual change. The Loch Lomond and the Trossachs National Park Authority will be consulted on the works.
- The site compound will be located on made ground within TM.

Characteristics of potential impacts of the scheme:

- Containment measures will be in place to prevent debris or pollutants from entering the surrounding environment.
- Measures will be in place to ensure appropriate removal and disposal of waste.
- Residual visual impacts will be localised to the existing A85 and WB verge and are not considered to be significant.
- Works are programmed to be of short duration and embankment works will be carried out during the day. Night time resurfacing works will be completed on a rolling programme, with the aim being to complete the noisiest works by 23:00.

- The SEMP will include plans to address environmental incidents.
- Mitigation measures detailed above and in the SEMP will be put in place with the objective to prevent and, if required, subsequently control any potential impacts on sensitive receptors.
- INNS management measures will be implemented to prevent potential INNS spread.
- No in-combination effects have been identified.

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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