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Environmental Impact Assessment Record of Determination

A84 Strathyre - Resurfacing

Contents

Project Details

Description

BEAR Scotland has been commissioned by Transport Scotland to carry out resurfacing works along a 673m section of the A84 trunk road. The works involve milling out and replacing bituminous material to a mixed depth inlay. Following the resurfacing works, road markings will be reinstated.

Main plant will include pavers, planers, excavators, and rollers. A welfare unit with generator will be required on site, and heavy goods vehicles (HGVs) will be required for transport of materials and wastes.

The resurfacing procedure is as follows:

- Set up traffic management (TM) and mark out site
- Mill out old surface course
- Reset and/or replace roadside gullies where required
- Lay new surface course
- Roll surface and allow it to set
- Install road markings and studs
- Remove TM and open road

Works are currently programmed to be completed within the 2025/2026 financial year, currently commencing on 08/06/2025 for a duration of three nights. Works will be conducted during nighttime working hours (19:00-05:00). Changes in the programme may result in a change to the proposed working hours/commencement dates.

Traffic management (TM) will involve road closure with hourly amnesties. Access to junctions and access to private roads will be maintained. Site access and plant storage will be located within TM. If the programme changes, this may result in amendments to the exact TM requirements.

Location

The scheme runs through the rural village of Strathyre, north of Callander in the Stirling Council local authority area (Figure 1). The scheme is located on a residential stretch of the A84 running parallel to the River Balvag. The scheme has the following National Grid References (NGR's):

- Scheme Start: NN 56103 16781

- Scheme End: NN 56185 17404

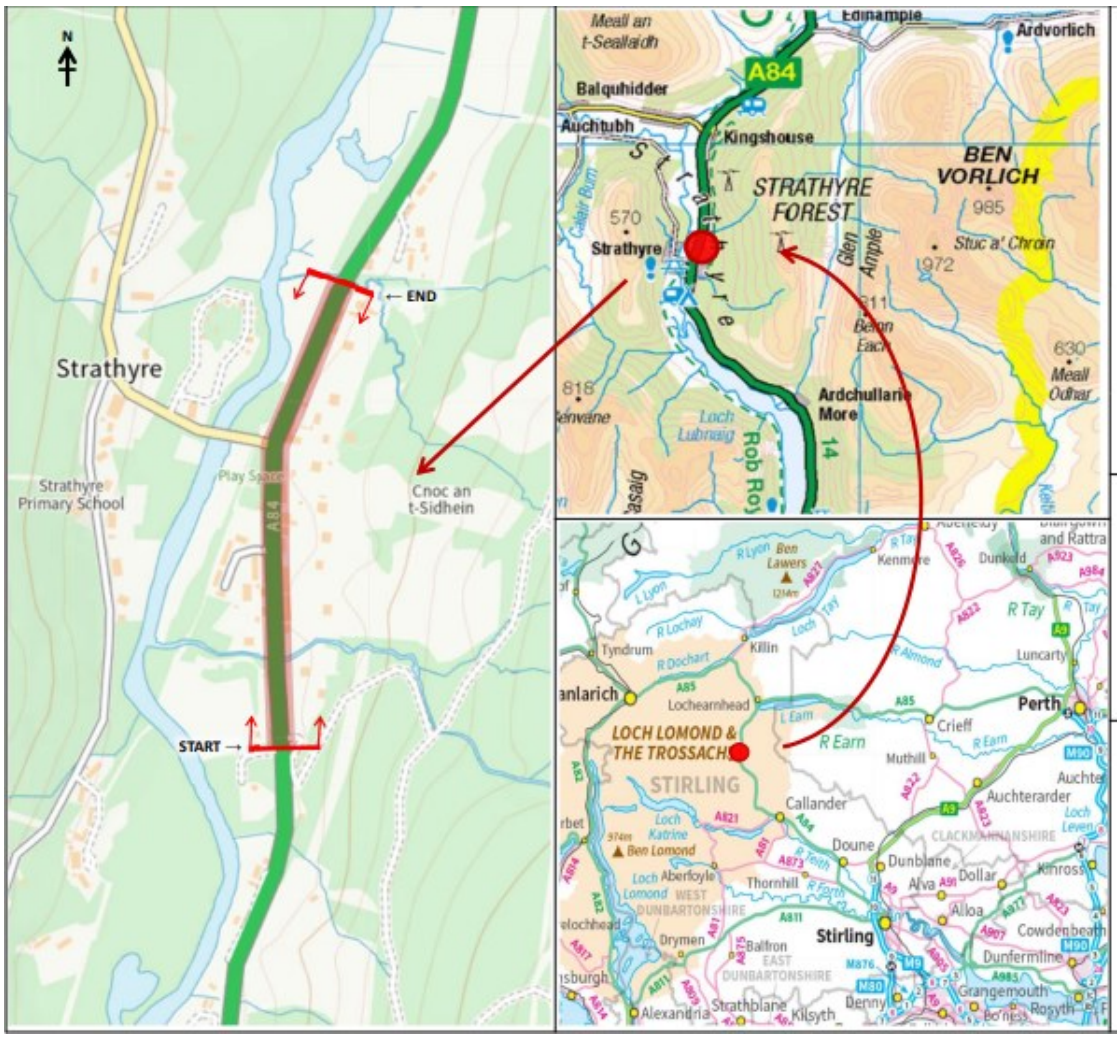

Figure 1: Scheme location and extents

Description of local environment

Air quality

There are no Air Quality Management Areas (AQMA) declared by Stirling Council (Air Quality Management Areas).

There are no Air Quality Monitoring Sites (AQMS) located within 10km of the scheme (Scottish Air Quality).

There are no facilities of air pollutant releases listed on the Scottish Pollutant Release Inventory (SPRI) within 10km of the scheme (Scottish Pollution Release Inventory).

In 2023, the average daily flow (AADF) of traffic was estimated on the A84 trunk road at a monitoring site (Site: 50766) located within the scheme extents accounted for 3594 vehicles, including 210 (5.84%) heavy goods vehicles (HGVs) (Road Traffic Statistics).

Baseline air quality for this scheme is primarily influenced by traffic along the A84 trunk road. Secondary releases are likely delivered by land management within the wider area.

Cultural heritage

A desktop study of Historic Environment Scotland's data on Pastmap found the following features of cultural heritage within 300m of the scheme:

- Strathyre, Immervoulin (Reference LB4195; Category C) lies adjacent to the A84 trunk road (NGR: NN 56066 16626)
- Strathyre, Coire Buidhe and St Ola (Reference LB50345; Category C) lies adjacent to the A84 trunk road (NGR: NN 56108 17024)
- Strathyre, Monument to Dugald Buchanan (Reference LB50348; Category C) lies adjacent to the A84 trunk road (NGR: NN 56073 17083)
- Strathyre, Corriegowrie (Reference LB50346; Category C) lies adjacent to the A84 trunk road (NGR: NN 56096 17158)
- Strathyre, Bridge Over the River Balvag (Reference LB4194; Category B) lies approximately 240m southwest of the scheme end point (NGR: NN 56043 17202)

- Strathyre, Dochfour and Mandalay (reference LB50347; Category C) lies approximately 161m south of the scheme end point (NGR: NN 56168 17240)

There are numerous records of cultural heritage listed on the Historic Environment Records (HER) and Canmore databases within 300m of the scheme (Pastmap). Features recorded on HER and Canmore are undesignated and do not have any statutory protection. The closest of these, Strathyre, Main Street, Coire Buidhe and St Ola – Canmore; Strathyre, Memorial to Dugald Buchanan – Canmore and HER and the Buchanan Monument – HER, lie adjacent to the A84 trunk road within the scheme extents.

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

Landscape and visual effects

The scheme does not fall within a National Scenic Area (NSA) (SiteLink) however, the scheme does fall entirely within Loch Lomond and the Trossachs National Park (LLTNP) (8621) which has been designated for the following special general 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 Landscape Character Type (LCT) within the study area is ‘Straths and glens with lochs’ (no. 254) (NatureScot). The key characteristics of this LCT are:

- 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 scheme is located on a section of the A84 carriageway that runs through the rural village of Strathyre, within Stirling Council. Land use surrounding the scheme is typically dominated by dense woodland found on either side of the A84 carriageway. The immediate land adjacent to the carriageway scheme extents is a residential area. To the west of the A84 carriageway is the River Balvag meandering its way throughout the landscape.

The A84 Trunk Road connects Stirling with Doune, Callander and Lochearnhead. It commences from its junction with the M9 at and including the eastern most roundabout at Craigforth Stirling (M9 junction 10) leading generally north-westwards for a distance of 44.7 kilometres to its junction with the A85 in Lochearnhead. The A84 is a single carriageway along its length.

Biodiversity

The scheme is located approximately 20m east of the River Teith Special Area of Conservation (SAC), which encompasses the River Balvag at this section.

Due to proximity and ecological connectivity of the works to the River Teith SAC, a Habitats Regulations Appraisal (HRA) has been produced. Refer to the relevant assessment section below for details.

There are no Local Nature Conservation Sites (LNCS), Local Nature Reserves (LNRs) or National Nature Reserve (NNR) (SiteLink) within 300m of the scheme. Approximately 1.5km south of the scheme start point is the Loch Lubnaig Marshes Site of Special Scientific Interest (SSSI) (NatureScot Site Code 1004) which overlaps the River Teith SAC.

The National Biodiversity Network Atlas (NBN Atlas) holds 527 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 one record of invasive and injurious plant species (as listed on the Network Management Contract (NMC)) within 300m of the scheme using the same search criteria:

- American Skunk-cabbage (*Lysichiton americanus*)

A search using Transport Scotland's Asset Management Performance System (AMPS) does not hold any records of invasive or injurious plant species within 300m of the scheme.

Habitat surrounding the A84 is dominated by conifer and mixed woodland and pockets of pastoral fields used for crop growing and grazing, as well as the residential area of Strathyre. Freshwater habitat is provided by River Balvag which lies approximately 20m west from the A84 carriageway.

The majority of the scheme lies within or in proximity to three areas of ancient woodland as listed on the Ancient Woodland Inventory (AWI). The areas of ancient woodland are either of 'ancient (of semi-natural origin)'; or 'other'. The following woods are within the footprint of the scheme extent:

- Wood ID: 16503
- Wood ID: 16532
- Wood ID: 16533

There are no areas of trees covered by a Tree Preservation Order (TPO) by LLTNP Planning within 300m of the scheme extent.

Geology and soils

There are no Geological Conservation Review Sites (GCRSs), or geological SSSI's located within 300m of the scheme (SiteLink).

Component soils around the scheme extent are described as 'Brown Earths'. The parent material is described as 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 'Class 0' mineral soils and peatland habitats are not typically found on such soils (Carbon and Peatland Map 2016).

Bedrock geology found within the scheme is Loch Katrine Volcaniclastic Formation – Metasandstone which is metamorphic bedrock. The superficial deposits within the scheme are Alluvium and River Terrace Deposits (gravel, sand, silt and clay) which are sedimentary superficial deposits (BGS Geology Viewer).

Works will be restricted to previously engineered ground within the A84 trunk road boundary.

Material assets and waste

The resurfacing works are required to replace worn surface and general maintenance of the A84 trunk road. Materials used will consist of:

- Asphaltic material
- Bituminous emulsion bond coat
- Milled in road studs
- Thermoplastic road marking paint

Wastes are anticipated to be removed planings from the surface course, which will be recovered for re-use in line with BEAR Scotland's Procedure 126: The Production of Fully Recovered Asphalt Road Planings. The Contractor is responsible for the disposal of road planings and this has been registered in accordance with a Paragraph 13(a) waste exemption issued by SEPA, as described in Schedule 3 of the Waste Management Licensing Regulations 2011.

There is no requirement for a site compound.

A Site Waste Management Plan (SWMP) is not required and coal tar has not been highlighted as being present within 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.

A search of the latest Round 4 noise mapping data, as displayed on the Scottish Government's GeoNetwork Map returned records for noise levels during the night (LNGT) within the A84 and its verges between 50 and 60 dB.

Baseline noise levels are likely to be primarily influenced by traffic travelling along the A84. Secondary sources are derived from day-to-day urban and agricultural/forestry land management activities.

Population and human health

As the scheme extent is located within a residential area in the rural village of Strathyre, there are numerous residential and business properties, as well as on-street parking, public footpaths, public services, and bus stops within proximity to the scheme extent. As such, there is no roadside verge screening provided to properties adjacent to the trunk road.

The National Cycle Network (NCN) route 7 (OS Maps) runs parallel to the A84 carriageway and lies approximately 200m west of the scheme with an access point from the village located approximately 28m to the west of the A84 carriageway within the scheme extents (NGR: NN 56061 17197).

There are several Core paths located within 300m of the scheme listed on Core Paths within LLTNP (LLTNP Core Paths):

- S1097 (Named Route NCN7) – runs parallel to the A84 carriageway within the scheme extent
- S0839
- S0400 – crosses the A84 carriageway within the scheme extent
- S0840
- S0720 (Named Route RRW)
- S1063 (Named Route NCN7) – runs parallel to the A84 carriageway within the scheme extent

There are three designated walking routes within 300m of the scheme extents listed on (WalkHighlands) including:

- The Strathyre Circuit – crosses and runs parallel to the A84 carriageway within the scheme extent
- Beinn an t-Sidhean, Strathyre – runs parallel to the A84 carriageway within the scheme extent
- Rob Roy Way: Strathyre to Killin – crosses the A84 carriageway within the scheme extent

Road drainage and the water environment

The scheme extent and surrounding area is underpinned by Trossachs groundwater (ID: 150680) which is 541.9 square kilometres in area. In 2023, this was assigned ‘Good’ by SEPA under the Water Framework Directive 2000/60/EC (WFD). The

scheme falls into a Drinking Water Protected Area for groundwater. A Drinking Water Protected Area for surface water is located approximately 460m northeast of the scheme.

The River Balvag is a river (ID: 4737) in the River Forth catchment of the Scotland river basin district. The main stem is approximately 10 kilometres in length and it flows from the south into Loch Lubnaig and lies at a distance of 20m west of the scheme at its closest point. In 2023, it was assigned 'Good' by SEPA under the WFD.

One named but unclassified waterbody (Tighanes Burn) and several unclassified and unnamed surface waterbodies and/or culverted drainage channels are culverted beneath the A84 and/or lie within 300m of the scheme.

SEPA Flood Map has highlighted a high likelihood of river water flooding at various small points along the scheme extent (i.e. a 10% chance of flooding) each year. Similarly, there is also a high likelihood of surface water flooding at various small points along the scheme extent.

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

Construction activities associated with the proposed works have the potential to temporarily cause local air quality impacts. Activities undertaken on site may cause dust and particulate matter 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 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 risk 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 there are several features of cultural heritage interest within 300m of the scheme; any excavation works associated with the resurfacing works are restricted to the already engineered carriageway boundary, and as such, the potential for exposure of unrecorded cultural heritage features is considered to be negligible. Construction of the A84 road corridor is likely to have removed any archaeological remains that may have been present.

As standard, the following good practice measures will be in place to reduce the risk of impacts to undiscovered features of cultural heritage interest:

- All site staff will be advised of the location of the nearby Listed Buildings and instructed that no access will be taken within the boundary of these areas
- There will be no storage of vehicles, plant, or materials against any buildings, walls or fences.
- Should any unexpected archaeological evidence be discovered, works will stop temporarily in the vicinity and the BEAR Scotland NW Environment Team contacted for advice. Historic Environment Scotland (HES) will be notified as required.
- People, plant, and materials will, as much as is reasonably practicable, only be present on areas of made / engineered ground. Where access out with these areas is required for the safe and effective completion of the scheme, it will be reduced as much as is reasonably practicable and ideally be limited to access on foot. There will be no storage of vehicles, plant, or materials against any buildings, walls or fences.

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

Landscape and visual effects

The works lie within the boundary of the Loch Lomond and the Trossachs National Park. Due to the nature of resurfacing works being restricted to the trunk road boundary, no impact on the National Park is expected. However, the National Park will be notified of works prior to works commencing.

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, works will be restricted to the A84 carriageway boundary and will be limited to the like-for-like replacement of the carriageway surface and will be carried out over 3 nights in total. Land use will not change as a result of the works, and the works will not result in any residual change to the visual amenity of the local landscape.

In addition, the following mitigation measures will be put in place during 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.
- LLTNP advice, if received, will be complied with.
- 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 works lie within 20m of the River Teith SAC. BEAR Scotland produced a Habitats Regulations Appraisal (HRA) Proforma to assess potential effects of the proposed resurfacing works on the SAC. This HRA Proforma concluded that works would not result in any Likely Significant Effects on the qualifying species within the River Teith SAC due to the localised nature of the works, location within a residential setting, no in-stream works, and the distance between the SAC and the scheme

extents, and restriction to the A84 trunk road boundary. Standard measures for pollution prevention will be adhered to during works.

All works will be restricted to the A84 carriageway surface and will not entail any in-stream works or vegetation clearance. There are no significant earthworks associated with the scheme, and 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 invasive non-native species (INNS), invasive native perennials, or injurious flowering plant species.

Activities undertaken on site could potentially have a temporary adverse impact on biodiversity in the area as a result of an increased vehicle presence and the potential for disturbance to protected species and pollution of habitats. However, works are restricted to the A84 carriageway and 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 noise and visual disturbance pertaining to vehicle movements on the A84 and the scheme is of short duration (3 nights) and will be undertaken on a rolling programme. The potential for significant species disturbance within the area of likely construction disturbance is therefore considered to be low.

The majority of the scheme lies within, or in proximity to, areas of ancient woodland; however, no tree felling is planned for the works.

Pollution controls and good practice measures to reduce impacts of works on the local environment will be detailed in the SEMP and adhered to on site. Therefore, with the following mitigation measures in place, the risk of significant impacts on biodiversity are considered to be low:

- 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.
- 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. If required, NatureScot will be contacted for advice.
- Artificial lighting 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.
- 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

Excavation is required as part of the resurfacing works; however, this will be restricted to the A84 carriageway and trunk road boundary. To mitigate any adverse impacts on geology and soils, the following measures will be in place:

- 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
- Mitigation measures to prevent contamination of soils through loss of containment will be strictly adhered to.

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.
- Planings 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 will 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 undertaken where possible, 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 existing road space suggests that residents within the local area will have a degree of tolerance to noise and disturbance. The works will employ a night-time working pattern with the noisiest works (e.g. planing) completed by 23:00. Due to the short duration and localised nature of the works, the proposed scheme is anticipated to result in temporary minor noise impacts during the construction programme.

The road surface is in a poor condition with a series of defects. Replacing the life-expired surface course 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:

- 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.
- Affected local residents and the Environmental Health Officer (EHO) for Stirling Council will be notified of works.
- All site staff will receive the ‘Being a Good Neighbour’ toolbox talk.
- The noisiest works (e.g. planing) will be programmed to be completed by 23:00 where possible.
- 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.
- 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.
- 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 vehicle travellers, and non-motorised road users (NMUs) as a result of construction presence, and associated noise and delays due to traffic management measures. Road users and local bus operators will be informed of works through a media release, which will provide details of construction dates and times.

No significant congestion issues are noted during the proposed construction hours; however increased journey times may occur, but these are considered insignificant considering the relatively low traffic counts.

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 nighttime works to daytime works) will be communicated to travelling public throughout the programme.
- Appropriate provisions / measures will be implemented within the TM to allow the safe passage of NMUs of all abilities through the site (if required).
- 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

During resurfacing works, there is potential for temporary impacts on the water environment. 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/flooding) during works have the potential to have a direct or indirect effect on the 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 are detailed in the SEMP and will be adhered to on site.
- No discharges into any watercourses or drainage systems are permitted. Appropriate containment measures will be in place to prevent any loss of construction materials into the water environment.
- Appropriate measures will be implemented during resurfacing operations to limit the potential for wastes (i.e. road planings) and materials (i.e. new asphalt) to enter any gullies present on site. On completion of resurfacing operations, any gullies present on site should be visually checked to ensure they have not become blocked as a result of the scheme.
- 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.
- 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 will 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 contaminated 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 must 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 scheme works 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 disposed at local landfill.

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

Small areas of the A84 carriageway within the scheme extents are recorded as being at high (10% chance) risk of fluvial flooding. Works will be programmed as far as is reasonably practicable to avoid periods of adverse weather or heavy rainfall.

Works are restricted to the made ground of the A84 carriageway and TM will be designed in line with existing guidance. TM will consist of nightshift full carriageway closures with amnesties. Where required, alternative NMU provisions/routes will be included in the traffic management setup, to minimise impact of the works on NMUs.

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.

These measures, along with mitigation measures and 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 Stirling Council Planning Portal (Stirling Council Planning Portal) and LLTNP Planning Portal (Loch Lomond and Trossachs National Park) identified no approved planning applications within 300m of the scheme, in the last 6 months.

A search of the Scottish Roads Works Commissioner website (Map Search) has identified that no other roadworks are currently ongoing, or noted as being planned, on the trunk road at the same time as this scheme. Due to the nature of the proposed works, 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 TM. 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 TM to complete multiple schemes at once. This approach allows BEAR Scotland to effectively manage the potential cumulative effects as a result of TM, resulting in minimal disruption to users of the Scottish trunk road network.

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

Assessments of the environmental effects

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 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) is situated in 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:

- Works are restricted to like-for-like replacement of worn road surface, with all works restricted to made ground on the A84 carriageway surface.
- Construction activities are restricted to an area of 0.4375ha along a 673m stretch of the A84.
- The works will be temporary, transient, localised, and completed during night-time hours on a rolling programme.
- Works are not expected to result in significant disturbance to protected species that may be present in the wider area.
- No INNS have been recorded within the scheme extents.
- The risk of major accidents or disasters is considered to be low.
- By removing the carriageway defects this will provide this part of the A84 carriageway with another life cycle, and significantly improve the ride quality, which will result in safer conditions for road users.
- No impacts on the environment are expected during the operational phase as a result of works. The works are expected to result in positive impacts on road users during the operational phase.
- As the works will be limited to the like-for-like replacement of the structural components, there is no change to the vulnerability of the road to the risk or severity of major accidents/disasters that would impact on the environment.

Location of the scheme:

- The scheme will be located within the existing A84 road boundary and as such, no land take will be required.
- The works will not result in any change to the qualifying features of the Loch Lomond and the Trossachs National Park in which the scheme is situated.
- The River Teith SAC is located in proximity to the scheme. The HRA Proforma completed by BEAR Scotland did not identify any LSE on the qualifying features of the nearby River Teith SAC as a result of works.

- Numerous residential properties lie within 300m of the scheme which are not screened from the works by woodland or the river.
- Several Listed Buildings lie in proximity to the scheme extent; however, construction of the A84 trunk road is likely to have removed any archaeological remains that may have been present.

Characteristics of potential impacts of the scheme:

- Any potential impacts of the works are expected to be temporary, short-term, non-significant, and limited to the construction phase.
- Measures will be in place to ensure appropriate removal and disposal of waste.
- No impacts on the environment are expected during the operational phase as a result of works. The works are expected to result in positive impacts on road users, ecological and human receptors during the operational phase.
- As the works will be limited to the like-for-like replacement 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.
- Works are programmed to be of short duration and nighttime resurfacing works will be completed on a rolling programme, with the aim being to complete the noisiest works by 23:00.
- 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.
- In the event that INNS are found on site, measures to prevent potential INNS spread will be implemented.

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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