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Environmental Impact Assessment Record of Determination

A84 Leny Feus

Contents

Project Details

Description

BEAR Scotland has been commissioned by Transport Scotland to carry out resurfacing works on the A84 carriageway within the Stirling Council Local Authority area.

The works will involve resurfacing of a 686m long stretch of the carriageway, resetting road gullies and replacing road kerbs. The total scheme has an approximate area of 0.41ha.

The works are currently programmed to be completed within the 2024/2025 financial year over one week, by utilising a night-time working pattern (19:00 – 05:00). Traffic Management (TM) will include a full night-time closure of the A84 carriageway with diversions via the A84, A9, A822 and A85. A site compound is not required; machinery will be positioned on the A84 carriageway within the TM. If the programme changes, this may result in amendments to the exact TM requirements.

Pedestrians and non-motorised users (NMUs) will be accommodated within TM.

Location

The scheme lies on the western periphery of Callander within the Stirling Council area (Figure 1). The scheme has the following National Grid References (NGRs):

- NGR at the eastern scheme extent point: NN 62082 08047
- NGR at the western scheme extent point: NN 61417 08209

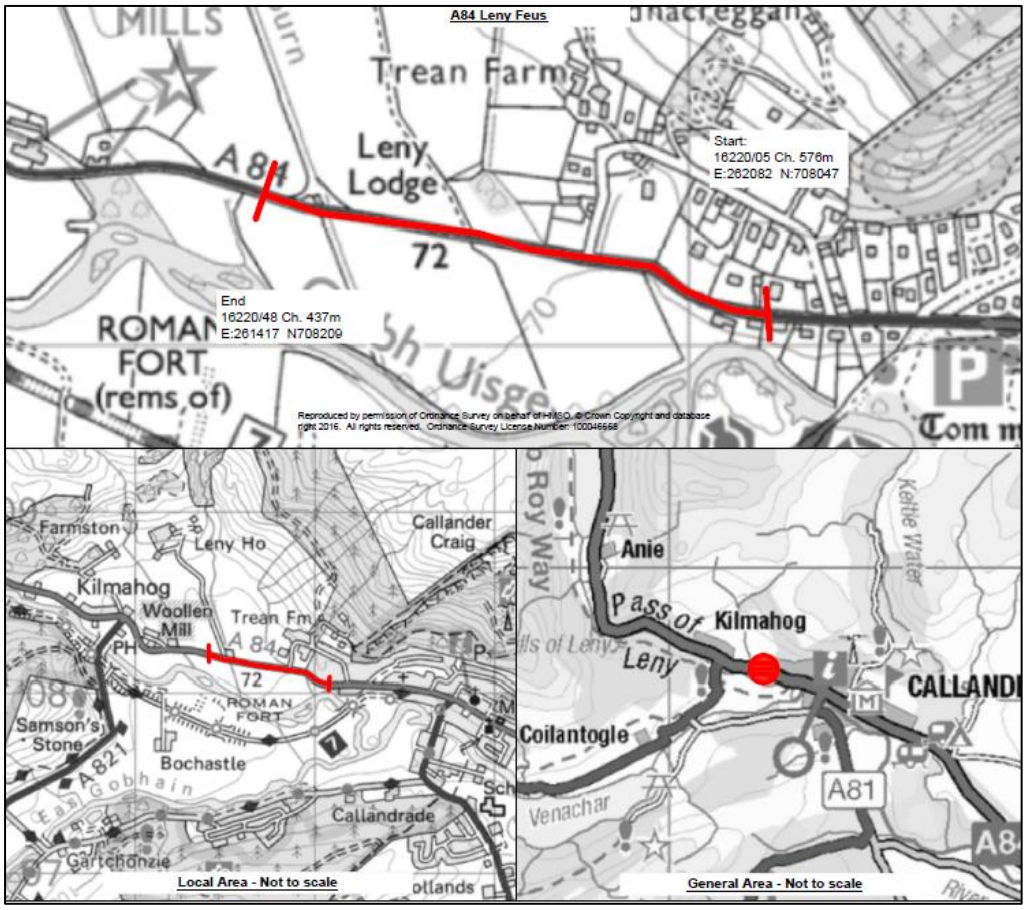

Figure 1. Scheme extents.

Description of local environment

Air quality

The scheme is not located within an Air Quality Management Area (AQMA) (Scotland's Environment - SE).

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

Sites monitoring air quality in the wider area record bandings to be within the 'green zone' (Low Index 1-3).

Baseline air quality is likely to be primarily influenced by traffic along the A84 carriageway, with secondary sources likely to include land management and agricultural activities associated with the surrounding environment. Proximity of Callandar will also have an impact on the local air quality levels.

Cultural heritage

A search of PastMap mapping tool (PastMap) identified the following cultural heritage features within 300m of the scheme:

- Scheduled Monument 'Bochastle Roman Fort, Temporary Camp and Prehistoric Enclosures' (SM2389) lies 160m south of the scheme.
- Five Listed Buildings, the nearest of which is the Category B 'Leny Feus, Callander Lodge Including Robertson House, Lodge and Stable, Boundary Walls, Gatepiers and Garden Features' (LB50383) and lies 80m north of the scheme.
- 'Callander' Conservation Area encapsulates the scheme's eastern extents.
- Numerous Historic Environment Records (HERs) and records in Canmore database. The nearest of these, 'Bridge of Leny' HER (65667) and Canmore (153292) is a record of a road bridge and lies within the scheme extents.

There are no records of other cultural heritage features such as World Heritage Sites, Garden and Designed Landscapes, Battlefields or Inventory Battlefields within 300m of the scheme extents (PastMap).

Landscape and visual effects

The scheme is situated within Loch Lomond and The Trossachs National Park (LLTNP) (NatureScot Site Code: 8621). LLTNP 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 a National Scenic Area (NSA).

The Landscape Character Type (LCT) within the study area is 'Straths and Glens' (no. 253) (Scottish Landscape Character Types). The LCT has the following key characteristics:

- Broad u-shaped glens and straths with wide flat floodplains.

- Lower side slopes often rolling and complex with hummocky moraine and rocky outcrops.
- Many glen and strath sides are forested, predominantly with spruce, on upper slopes. Some of these forests occasionally extend across strath and glen floors. Scattered trees and remnants of native woodland are found along the edges of burns.
- Rivers are prominent in open floodplains, often contained by flood barriers and levees. Less modified stretches of river feature pools, gravel beds and waterfalls.
- Riparian woodlands trace the course of rivers and their tributaries.
- Better drained strath and glen floors are farmed with improved pastures. Occasional small regular-shaped plantations and shelter belts pattern hill slopes and valley floors.
- Mixed policy woodlands and avenues of trees line access tracks in places.
- Settlements and farms are located on lower side slopes, raised above the floodplain, and often tucked between knolls. Settlements tend to be sited at bridging points or at the junction with side glens.
- Road and rail transport corridors follow the edges of strath and glen floors.
- Pylons and low voltage overhead power lines are highly visible features across open glen floors.
- Open strath and glen floors allow views along and across the traditional farmed landscapes, attractive river landscapes and lochs, as well as the dramatic Highland setting of the surrounding rugged slopes and mountain summits.
- The scheme extent lies on the periphery of Callander with urban development dominating at the scheme eastern extent and pastoral fields of agricultural land in proximity to the western extents.

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 A84 spans Leny Burn, which is designated as part of the River Teith Special Area of Conservation (SAC) at the scheme extents (SiteLink) (NatureScot Site Code: 8367).

A Habitats Regulations Appraisal (HRA) has been undertaken to assess the potential effects of the works on these sites. Refer to the Biodiversity Impacts and Mitigation section below.

No other locally or nationally designated sites with biodiversity features (such as Sites of Special Scientific Interest (SSSI), Local Nature Reserves or National Nature Reserves) are located within 300m of the scheme (SiteLink).

A search of NBN Atlas identified one record of Japanese *knotweed (Fallopia japonica)* in 2024, which is an invasive non-native species of plants.

Transport Scotland's Asset Management Performance System (AMPS) did not highlight any records of invasive and injurious plants within 300m of the scheme extents.

Habitats in the surrounding area are somewhat limited due to presence of urban development and fields of agricultural land. However, Garbh Uisge/River Leny with its tributaries provide habitat for a wide range of semi-aquatic and aquatic species.

There is one area of ancient woodland as listed on the Ancient Woodland Inventory approximately 190m north-east of the scheme (Wood ID: 16837) (Scotland's Environment).

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

Geology and soils

The scheme does not lie within a Geological Conservation Review Site (GCRS), or a geologically designated SSSI (NatureScot Sitelink).

Superficial deposit within the scheme extents is comprised of Alluvium and Glaciofluvial Sheet Deposits (gravel, sand, silt and clay), which are sedimentary superficial deposits (BGS Geology Viewer).

Bedrock within the scheme extent is comprised of 'Ruchill Flagstone Formation' (sandstone and siltstone, interbedded) and 'Craig of Monievreckie Conglomerate Formation' (conglomerate) (BGS Geology Viewer).

The major soil groups found within the scheme are brown earth (Scotland's Soils).

The carbon and peatland 2016 map records soil within the scheme as "Class 0" which indicates mineral soils with no peat present (Scotland's Soils).

Material assets and waste

The proposed works are required to improve road surface conditions at this stretch of A84. The works will require the following materials:

- TS2010 10mm aggregate
- AC20 40/60 binder course
- Milled in road studs
- Thermoplastic road marking paint
- Bituminous emulsion bond coat
- Gully lids
- Kerbs

Minor excavation may be required for replacement of road kerbs. Excavated material will be reused on site.

The value of the scheme does not exceed £350,000 and therefore a Site Waste Management Plan (SWMP) is not required.

The 686m scheme involves full length removal of the surface course and localised areas of binder course. In total, 1,056 tonnes of bituminous material will be removed from site, with 646 tonnes of this being coal tar.

Uncontaminated planings 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 the Scottish Environment Protection Agency (SEPA), as described in Schedule 3 of the Waste Management Licensing Regulations 2011.

Any coal tar contaminated road planings will be classified as a Special Waste. Special waste consignment notes (SWCN) will be obtained from SEPA to allow the movement of the contaminated planings. Coal tar contaminated road planings will be transported by a registered waste carrier to an appropriate waste recovery facility, and SEPA will be notified prior to Special Waste leaving site.

No site compound is required for these works. Storage of plant and equipment will be within TM on the A84 carriageway.

Noise and vibration

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

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

Noise modelled data from Environmental Noise Directive (END) Round 4 Noise Mapping indicates 24 hour annual average noise level (Lden) between 65 and 75dB on the A84 at the scheme location (SpatialData).

The baseline noise and vibration in the scheme extents is primarily influenced by vehicles travelling along the A84 trunk road. Secondary sources are likely to arise from urban activities associate with Callander and day-to-day agricultural land management within the area.

Population and human health

A number of properties lie within 300m of the scheme. These mainly consist of residential dwellings. Several small hotels, guesthouses and shops lie within 300m of the scheme with the nearest of these lying adjacent to and facing onto the A84 within the scheme extents. Properties closest to the scheme lie just 5m south and have no or only limited screening provided by ornamental trees and shrubs. Ashwood House nursing home lies 130m northeast of the scheme and is screened by intervening urban development.

A paved pedestrian footpath lies parallel to the A84 along the whole scheme extent. Several junctions and access roads to local roads and properties are located within the scheme extents.

National Cycle Network (NCN) route 7 lies 190m south of the scheme. The NCN is also core path (SE Map) NCN7 & RRW and walking route 'Callander to Falls of Leny circuit' and Rob Roy Way: Callander to Strathyre, as listed on WalkHighlands. There is no connectivity between the scheme and the NCN, core path and walking route. There are also 8 interconnected core paths to the east of the scheme, the closest of which are at a distance of 230m (LLTNP Core Paths).

Vehicle count data taken from the nearest count point on the A84 (located within the scheme extents) shows an Average Annual Daily Traffic (AADT) count of 6,035 motor vehicles, with a HGV percentage of approximately 2.8% (count data taken in 2023) (Department for Transport).

Road drainage and the water environment

The River Leny/Garbh Uisge (ID: 4718) lies 40m south of the scheme at its nearest point. It is a river in the River Forth catchment of the Scotland river basin district and has been classified by SEPA in 2022 under the Water Framework Directive 2000/60/EC (WFD) as having an overall status of 'Good' (SEPA).

Leny Burn (unclassified) and several unnamed watercourses are spanned by the A84 within the scheme. Leny Burn outflows into the River Leny/Garbh Uisge 235m south of the scheme.

The works lie on the 'Teith and Forth Valleys' and 'Callander' groundwaters, which have been classified by SEPA as 'Good' and are also Drinking Water Protected Areas (DWPA) (ground). The scheme also lies on the surface DWPA (DWPA).

The SEPA indicative surface water online flood mapping tool records numerous watercourses spanned by the A84 at the scheme to have a medium to high likelihood of fluvial flooding. Each year these watercourses have 0.5% to 10% likelihood of flooding and potentially flooding the A84.

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. The main sources are likely to be dust generated by cold milling in preparation of carriageway resurfacing, as well as 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.

- Ancillary plant, vehicles and non-road mobile machinery (NRMM) will have been regularly maintained, paying attention to the integrity of exhaust systems. These will also be switched off when stationary to prevent exhaust emissions (e.g., there will be no idling vehicles).
- 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.
- 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.
- 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.
- 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.
- Cement bags will remain closed when not in use to prevent cast off to the surrounding environment.

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

The works are partly located within the 'Callander' Conservation Area; however, the works are restricted to the A84 trunk road boundary (including verges) and will involve like-for-like replacement of the road surface, gullies and kerbs. In addition, vegetation management is not required, and excavation works are within the made ground of the trunk road. As such, the works will not alter character of the area.

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

- 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 Environment Team contacted for advice.
- If vegetation management is identified as required during the works, approval from the LLTNP will be obtained prior to the works taking place.
- Historic Environment Scotland will be consulted with as required, in the event of any discovery/exposure of suspected archaeological features.
- People, plant, and materials will, as much as is reasonably practicable, only be present on areas of made / engineered ground. Access required out with these areas will be reduced as much as is reasonably practicable and will utilise as few access points/tracks as possible.

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

There will be a short-term impact on the landscape character and visual amenity of the site as a result of the presence of construction plant, vehicles, and TM.

However, people, ancillary plant, vehicles, NRMM and materials are restricted to areas of made/engineered ground on the A84, and construction works are programmed to be undertaken at night on a rolling programme. As such, the visual impact of the works will be somewhat reduced. Upon completion of the works, no residual impacts are anticipated e.g., when complete the visual appearance will remain largely unaffected, with a renewed road surface being the only discernible change. LLTNP will be notified of the proposed works and advised of road closures/diversion routes in advance of the works.

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

- LLTNP will be notified of the proposed works and advised of road closures/diversion routes in advance of the works.
- Throughout all stages of the works, the site will be kept clean and tidy, with materials, equipment, plant and wastes appropriately stored, minimising the landscape and visual effects.
- 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 A84 spans the Leny Burn watercourse which is designated as part of the River Teith SAC; therefore, a HRA was carried out to assess the risk of potential effects on the SAC. The HRA concluded that there was no potential for the proposed works to result in Likely Significant Effects (LSE) on the qualifying features of the River Teith SAC based on the following factors:

- No works will take place within the boundary of the SAC and no in-water works are required; as such, no direct impacts (e.g., habitat loss) will occur.

- Given the minor, localised and transient nature of the works, the lack of requirement for in-water works, and adherence to good practice measures for pollution prevention, no risk of significant pollution impacts (either to watercourses or associated feeding grounds) was identified.
- Although the works will result in a temporary (localised) increase in noise, this is unlikely to significantly affect the qualifying features of the SAC due to the transient nature of the works.
- Although night works will require some artificial lighting, the works will be transient, and lighting will be directed in a way to avoid light spillage within the surrounding environment. Furthermore, the waterbody is screened by 1m high bridge parapets and riparian vegetation.

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 (1 week) 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.

A search of NBN Atlas identified a record of japanese knotweed within 2km of the scheme, however, no vegetation clearance is required, and works are restricted to the trunk road boundary. Furthermore, the works will also be restricted to the surfaced area of the carriageway with no or minimal access to road verges required, and as such it is unlikely that any injurious or invasive weeds will be encountered during the works.

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. Therefore, with the following mitigation measures in place, the risk of significant impacts on biodiversity are considered to be low:

- 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.

- No in-water works will be permitted. Works will be strictly limited to areas required for access and the works. Unnecessary encroachment onto terrestrial or aquatic areas will not be tolerated.

- 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 shall be reported to the BEAR Scotland Environment Team.

- Artificial lighting will be directed away from areas of woodland and waterbodies as far as is safe and reasonably practicable.

- If an active bird nest (e.g., eggs or young present, adult sitting on nest) is identified on site, all works within 30m of the nest will stop until the BEAR Scotland NW Environment Team can provide advice.

- 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.

- 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.

- 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.

Taking into account the nature and scale of the works and the good site practice mitigation measures which will be adopted during the works, it is anticipated that any biodiversity effects associated with the proposed works will not be significant. This receptor is not considered further in this RoD.

Geology and soils

The scheme is not located within a GCRS or geological SSSI. Although the works will entail minor excavation to replace kerbs, this will be on engineered ground. In addition, any excavations will be carried out with good practice measures detailed in the SEMP as follows:

- Excavated material will be reused and/or redistributed within the scheme extents.

- Upon completion of the works, any damage to the local landscape will be reinstated as much as is practicable.
- Mitigation measures to prevent contamination of soils through loss of containment will be strictly adhered to.
- The parking of machinery/vehicles and storage of equipment on grass will be minimised as far as is reasonably practicable.
- Additional pollution prevention measures as outlined in the 'Road drainage and the water environment' section will be adhered to during construction.

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

Material assets and waste

During construction, there will be a temporary impact as a result of material consumption and waste production. 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.
- 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.
- Road 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).
- The coal tar will be processed as fallows:
    - Any coal tar contaminated road planings will be classified as Special Waste.
    - Special waste consignment notes (SWCN) will be obtained from SEPA to allow the movement of the contaminated planings.
    - Coal tar contaminated road planings will be transported by a registered waste carrier to an appropriate waste recovery facility.
    - SEPA will be notified at least 72 hours before (and no longer than one month before) Special Waste leaving site.
- 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 scheme 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 or CQA and the proximity of road space suggests that residents within the local area will have a degree of tolerance to noise and disturbance. Works will also be completed over a 1 week 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:

- 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.
- Where possible and where works will take place within 300m of residential properties and other sensitive receptors, the noisiest work operations (e.g., cold milling, using breakers (jackhammers), chipping hammers, use of rollers, etc.) will be completed before 23:00.
- The Environmental Health Officers (EHO) from Stirling Council will be notified of works.
- 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.
- 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 have the potential to have temporary adverse impacts on local residents, vehicle travellers, and NMUs. Although the A84 will be closed during the works with a diversion in place, the road closure will take place at night when traffic count is at its lowest and no significant congestion issues are noted during the proposed construction hours. In the event of local access restrictions to residential properties, access will be granted as

requested. Access to NMU facilities which lie within 300m of the scheme, will be maintained and the works are being undertaken at night when footfall and cyclist count is at its lowest.

Multiple residential properties and commercial premises are found within 300m of the scheme. The nearest residential property lies just 5m from the scheme with no screening present and given that the works are being undertaken at night, there is potential for disturbance from noise, vibration and from additional construction lighting.

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

- The works schedule and any changes to this will be communicated to local residents prior to and throughout the programme.
- Given the proximity of urban development to the scheme extents, the Toolbox Talk TTN-042 Being a Good Neighbour will be briefed prior to works commencing.
- Construction lighting will consider the need to avoid illuminating surrounding environment and properties to avoid a nuisance at night, and non-essential lighting will be switched off at night.
- 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 operation of plant within and within proximity to watercourses and/or drainage systems, 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:

- No work has been identified that would require entering any surface waterbodies. If such a need were identified onsite, BEAR Scotland's Environmental Team will be contacted (before works commence) to allow consideration of potential environmental effects.
- 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 directly 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.
- All plant and equipment will be regularly inspected for any signs of damage and leaks. A checklist must 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 shall be stored on an impermeable area and be fully bunded. This shall 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 shall 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

During the works there is potential for impacts as a result of the emission of greenhouse gases through the use of equipment, vehicles, material use and production and transportation of materials and wastes. However, considering the nature, short-term duration, size and scale of the scheme, and the mitigation detailed below, the risk of significant impacts to climate are considered to be low.

Proposed climate mitigation measures:

- All mitigation measures detailed within ‘Air Quality’ and ‘Material Assets and Waste’ will be adhered to.
- BEAR Scotland will adhere to its Carbon Management Policy.
- Where possible, materials will be sourced locally to reduce greenhouse gas emissions associated with materials movement, and waste will be disposed at local landfill, where required.

Vulnerability of the project to risks

Numerous watercourses are spanned by the A84 within the scheme extents which are identified to have medium to high (0.5% to 10% chance each year) flooding of river water. Works will be programmed as far as is reasonably practicable to avoid periods of adverse weather or heavy rainfall. Furthermore, the works do not require installation of impermeable surface areas and as such increased surface water flooding is not expected following the completion of the works.

Works are restricted to the engineered ground of the A84 trunk road and traffic management will be designed in line with existing guidance. TM will consist of night-time road closures with diversion in place. The road closure and diversion route will be publicised in advance. Local residents will be notified of working hours and provided with appropriate contact information. Pedestrians or other NMUs will be accommodated within the TM setup.

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

During construction, activities associated with the works may create several types of minor temporary disturbances such as changes to noise and vibration and air quality. However, these impacts will be temporary in nature and are not anticipated to result in a significant cumulative effect.

A search of the LLTNP Planning Portal (Map Search) has identified several planning applications within the last two years, within 300m of the scheme. It has been noted that there is potential for cumulative effects to arise from overlapping construction periods with other developments. However, due to a number of factors - such as the distance of the other developments from the proposed scheme, the timing and nature of the works, and mitigation measures to be adhered to during construction (detailed in the SEMP) - the assessment concluded that no significant cumulative effects are anticipated during the construction phase. No cumulative effects on people or property receptors are anticipated during operation phase given there will be no change to the existing road configuration.

A search of the Scottish Roads Works Commissioner's website (Map Search) has not identified any other upcoming roadworks programmed on the A84 carriageway within 300m of the works in the next six months.

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 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. The HRA completed to assess potential impacts of the works has concluded that there will be no LSE on the qualifying features of the River Teith SAC as a result of the 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 within the LLTNP 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, road gullies and roadside kerbs, with all works restricted to made ground on the A84 trunk road.
- Construction activities are restricted to an area of 0.41ha along a 686m stretch of the A84.
- The works will be temporary, localised, and completed during night-time hours over up to one week with the noisiest works completed by 23:00.

- Works are not expected to result in significant disturbance to protected species that may be present in the wider area.
- The risk of major accidents or disasters is considered to be low.
- Removing the carriageway defects 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.

Location of the scheme:

- The scheme extent is located within LLTNP. Consultation with LLTNP regarding the works is not required.
- The A84 within the scheme extents spans the River Teith SAC. The HRA concluded that proposed works will not result in LSE on the qualifying features of the SAC.
- Although the scheme partly lies within 'Callander' Conservation Area, the works will not alter character of the Conservation Area as they will be like-for-like replacement of the road surface, gullies and kerbs and will be restricted to made ground within the A84 carriageway boundary.
- The scheme will be confined within the existing carriageway and as a result will not require any land take or alter any local land uses or habitats.
- Any impacts to the local landscape during the construction phase will be minor, temporary and not considered significant. In addition, no operational impacts are anticipated.

Characteristics of potential impacts of the scheme:

- Any impacts on air quality or noise levels are minor, short-term and temporary during the construction period. With mitigation measures in place, the potential impacts on local receptors are minor and not significant.
- Any short-term impacts on pedestrians, cyclists or equestrians are considered negligible, particularly as works will be completed outside of the key tourist period.
- The works will not result in loss of habitat as all works will take place within the A84 carriageway.
- Measures will be in place to ensure appropriate removal and disposal of waste.
- The SEMP will include plans to address environmental incidents.
- 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.
- 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.

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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