



**TRANSPORT
SCOTLAND**
CÒMHDHAIL ALBA

Environmental Impact Assessment Record of Determination

A84 Doctors Corner- Drainage Improvement Works

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Project Details

Description

BEAR Scotland has been commissioned by Transport Scotland to carry out drainage improvement works at four sites along a section of the A84 trunk road, north of Callander. The works involve the improvement of existing A84 drainage system through the installation of additional gullies and filter drains. Approximately 150m of existing A84 drainage infrastructure will be replaced and approximately 450m of new drainage infrastructure will be installed. Existing A84 culverts will be cleared via Jet-vac and the waste disposed of off-site.

Works are currently programmed to commence towards the end of January 2025 for a duration of 2 weeks. Works will be conducted during daytime working hours. Changes in the programme may result in a change to the proposed working hours/commencement dates.

Traffic management (TM) will involve single lane closures with two-way temporary traffic lights in place. Local access will be accommodated within the TM as much as is reasonably practicable.

Location

The scheme is located on a semi-rural stretch of the A84 along the eastern banks of Loch Lubnaig, approximately 6km north of Callander in the Stirling Council Local Authority area. There are 4 sites along a 2km stretch of the A84 where drainage works will be conducted (Figures 1 and 2).

National Grid References (NGR's):

- Scheme Start: NN 56487 14995
- Scheme End: NN 58633 13278
 - Site A- NN 58612 13307 to NN 58320 13644
 - Site B- NN 58177 13839 to NN 57939 13881
 - Site C- NN 57643 13945 to NN 57566 14041
 - Site D- NN 56829 14634 to NN 56496 14993



Figure 1: Scheme location



Figure 2: Scheme extent (Site A-D)

Description of local environment

Air quality

There are no [Air Quality Management Areas](#) (AQMA) within the Stirling Council Local Authority area.

There are no registered sites on the [Scottish Pollutant Release Inventory \(SPRI\)](#) located within 10km of the scheme.

There are no Air Quality Monitoring Stations ([AQMS](#)) located within 10km of the scheme.

Baseline air quality is likely to be primarily influenced by traffic along the A84.

Cultural heritage

A desktop study of Historic Environment Scotland's data on [SE Map](#) found the following features of cultural heritage within 300m of the scheme:

- Category B Listed Building 'Ardchullarie More Including Lodge and Motor House/Kennel/Byre' (LB3983) - located approximately 60m west of the scheme extent.
- 5 Canmore records, the closest of which is 'Runacraig' which lies adjacent to the southbound (SB) carriageway within the scheme extent.

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

Landscape and visual effects

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

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

- *The easily accessible landscape splendour*

The scheme is located on a semi-rural stretch of the A84 along the eastern banks of Loch Lubnaig, approximately 6km north of Callendar. The surrounding land is a mix of freshwater habitat; grazing pastures; scattered residential dwellings; and mixed woodland including forestry plantations.

The A84 Trunk Road, within the North West, connects Stirling with Doune, Callander and Lochearnhead. It commences from its junction with the M9 and includes the eastern most roundabout at Craigforth Stirling (M9 Junction 10)

Biodiversity

The scheme is located approximately 15m east of the River Teith Special Area of Conservation (SAC).

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

The Loch Lubnaig Marshes Site of Special Scientific Interest (SSSI) lies approximately 240m north-west of the scheme, partially overlapping with the River Teith SAC.

The [National Biodiversity Network \(NBN\) Atlas](#) holds 688 records of bird species within 2km of the scheme (the search criteria included only records during the past ten years, and which have open-use attributions (OGL-CC0-CC-BY)). Under the Wildlife and Countryside Act 1981 (as amended), all wild birds and their active nests are protected, with certain species receiving additional protections.

The NBN Atlas holds no records of invasive non-native species (INNS) or injurious plants (as listed in the Network Management Contract).

A search using Transport Scotland's Asset Management Performance System (AMPS) has highlighted 2 areas of growths of Japanese knotweed (*Fallopia japonica*) along the A84 trunk road within the footprint of the scheme.

Habitat in the surrounding area is dominated by freshwater habitat; grazing pastures; scattered residential dwellings; and mixed woodland including forestry plantations.

The majority of the scheme lies within or in proximity to several 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: 16537
- Wood ID: 16534
- Wood ID: 16532
- Wood ID: 16543 (Cuil Bheithe)
- Wood ID: 16542 (Cuil Bheithe)
- Wood ID: 16544
- Wood ID: 16546

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

A Preliminary Roost Assessment (PRA) and Preliminary Ecological Assessment (PEA) was conducted on the 29th November 2024.

Geology and soils

The scheme lies approximately 200m south-west of the River Balvag Delta Geological Conservation Review Site (GCRS) ([NatureScot](#)).

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 in the northern half of the scheme is 'Loch Katrine Volcaniclastic Formation- Metasandstone and Metamudstone'. Superficial deposits in the northern half of the scheme are 'Alluvial Fan Deposits- gravel, sand, silt and clay'. These sedimentary superficial deposits were formed between 2.588 million years ago and the present during the Quaternary period. Bedrock geology in the southern half of the scheme is 'Ardnandave Sandstone Formation- Metasandstone and Metamudstone' which then becomes 'Ben Ledi Grit Formation- Metasandstone' at the southern tip of the scheme. Superficial deposits at the southern end of the scheme are described as 'Till, Devensian- Diamicton'. These sedimentary superficial deposits were formed between 116 and 11.8 thousand years ago during the Quaternary period ([British Geological Society](#)).

Material assets and waste

The drainage improvement works are required to mitigate flooding of the A84 carriageway during periods of heavy rainfall. Materials used will consist of:

- Filter drains
- Gullies
- Filter material
- Kerbs

Waste generated by the clearing of the culverts will be removed from site and disposed of in a licenced waste facility.

The requirement for a site compound is to be confirmed.

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.

Environmental Noise Directive (END) Round 4 Noise Mapping shows the average day, evening and night-time noise levels (LDEN) at the scheme to be between 55 and 66dB ([SpatialData.gov.scot](#)).

Baseline noise levels are likely to be primarily influenced by traffic travelling along the A84.

Population and human health

There are 5 residential properties adjacent to the SB carriageway within the scheme extent at Runnacraig; and 3 residential properties at a distance of 60m west of the scheme at Ardchullarie More.

Adjacent to the SB carriageway, there are 2 access junctions to residential properties, 1 land access point and 2 laybys. Adjacent to the northbound (NB) carriageway, there is 1 land access point and 1 layby.

There are no bus stops or pedestrian footways within 300m of the scheme extent.

There are no [National Cycle Routes](#) within 300m of the scheme extent.

There are two [Core Paths](#) within 300m of the scheme:

- Core Path S0006 located approximately 240m east of the scheme
- Core Path S0062 which begins within the footprint of the scheme at Ardchullarie More

There is one designated walking route as recorded by [Walk Highlands](#) which begins within the footprint of the scheme at Ardchullarie More: 'Beinn Each from Loch Lubnaig'.

TM will involve single lane closures with two-way temporary traffic lights.

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 2022, this was assigned 'Good Ecological Potential' by the Scottish Environment Protection Agency (SEPA) under the Water Framework Directive 2000/60/EC (WFD).

Loch Lubnaig is a lake ([ID: 100258](#)) in the River Forth catchment of the Scotland river basin district. It is 2.3 square kilometres in area and lies approximately 15m west of the scheme at its closest point. In 2022, it was assigned 'Moderate Ecological Potential' by SEPA under the WFD.

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 north into Loch Lubnaig at a distance of 300m west of the scheme. In 2022, it was assigned 'Good Ecological Potential' by SEPA under the WFD.

The Garbh Uisge/River Leny is a river (ID: 4718) in the River Forth catchment of the Scotland river basin district. The main stem is approximately 6.2 kilometres in length and it flows south out of Loch Lubnaig at a distance of approximately 2.7km south of the scheme. In 2022, it was assigned 'Good Ecological Potential' by SEPA under the WFD.

There are several other unclassified water bodies, drains and springs within 300m of the scheme.

[SEPA Flood Map](#) has highlighted a medium-high likelihood of river water flooding at various small points along the scheme extent (i.e. a 0.5-10% chance of flooding) each year. Similarly, there is also a medium-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. The main sources are likely to be dust generated by dredging and breaking out of materials, 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 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.
- Ancillary plant, vehicles and NRMM will be switched off when stationary to prevent exhaust emissions (e.g., there will be no idling vehicles).
- Cutting, grinding, and sawing equipment (if required) will be fitted or used in conjunction with suitable dust suppression techniques e.g., local exhaust ventilation system that fits directly onto tools.
- Regular monitoring (e.g., by engineer or Clerk of Works) will take place when activities generating air pollution are occurring. In the unlikely event that unacceptable levels of air pollution are emanating from the site, the operation will, where practicable, be modified and re-checked to verify that the corrective action has been effective. Actions to be considered include: (a) minimizing cutting and grinding on-site, (b) reducing the operating hours, (c) changing the method of working, etc.
- All delivery vehicles carrying material with dust potential will be covered when travelling to or leaving site, preventing the spread of dust beyond the work area.
- Material stockpiles will be reduced as far as is reasonably practicable by using a 'just in time' delivery system. All material will also be stored on made ground.
- Any stockpiled material on site will be monitored daily to ensure no risks of dust emissions exists.
- Materials will be removed from site as soon as is practicable.
- Good housekeeping will be employed throughout the work.

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

Cultural heritage

Although there are several features of cultural heritage interest within 300m of the scheme; any excavation works associated with the drainage 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:

- 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

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. There will be permanent change to local landscape due to installation of new road drainage system. However, all change is within the A84 trunk road boundary and will be within the character of the road. In addition, people, ancillary plant, vehicles and materials will be restricted to areas of made/engineered ground on the A84 and associated drainage/culverts; and the works will be of short duration (2 weeks) and will move progressively along the scheme extent. As such, the temporary visual impact of the works will be somewhat reduced and there will be no residual impacts i.e. when

complete, the visual appearance will remain largely unaffected with new and/or renewed drainage being the only change. LLTNP will be notified of the proposed works and advised of the design in advance.

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 scheme is located 15m east of the River Teith SAC at its closest point. Due to the proximity of the works to the SAC, a HRA was conducted. Assessment for features of the Loch Lubnaig SSSI, was included as part of the HRA. The conclusions were as follows:

- LSE of the drainage works on the qualifying features of the River Teith SAC could not be ruled out, as the works have the potential to result in indirect effects on freshwater fish and their supporting habitats through disturbance and risk of pollution. As such, an Appropriate Assessment (AA) was conducted for this feature. With the following measures in place, it was concluded that works would not result in Adverse Effects on Site Integrity (AESI):
 - If artificial lighting is required during works, it will be directed only on the area of works and away from the watercourse and any nearby habitat.
 - Silt fencing and/or straw bales will be used during construction to contain working areas within the drainage system and control any sediment produced.
 - Waste collected from the clearing of gullies will be disposed of off-site to a licenced waste facility.

- With these measures in place, the AA concluded that the proposed works would not result in AESI for the qualifying features of the River Teith SAC.
- Additionally, no cumulative or in-combination effects of the works on the River Teith SAC were identified.
- The AA was submitted to NatureScot for comment and they have agreed with this assessment.

Although no other protected species were identified in proximity to the scheme during the survey, habitat close to the works does provide foraging opportunities for a variety of species. Activities undertaken on site could potentially have temporary adverse impacts on biodiversity in the area as a result of increased vehicle presence and the potential for disturbance to protected species and pollution of habitats. However, works are restricted to the A84 drainage system and culverts and the number of construction vehicles and construction operatives required on site is low given the scale and scope of the 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. Furthermore, the scheme is of short duration (2 weeks), will move progressively along the 2km scheme extent, and will be undertaken on a day time working pattern. The potential for significant species disturbance within the area of likely construction disturbance is therefore considered to be low.

Records of Japanese knotweed were identified within the scheme extent during the desktop study. However, no Japanese knotweed or any other INNS or injurious weed was identified on the ecological survey. However, some parts of the survey area were inaccessible due to the topography and/or 3rd party land access constraints; therefore, as a precaution, measures to prevent the spread of INNS will be included in the Site Environmental Management Plan (SEMP).

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. The following mitigation measures, in addition to the ones detailed in the HRA, will be put in place to minimise impacts on biodiversity features in the area:

- 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.
- The toolbox talk for working with INNS will be briefed to the site personnel prior to the works commencing.
- 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.
- 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

The works will involve minor excavations within the trunk road verge in preparation for the replacement/installation of new filter drains and gullies and all excavated material will be reused on site where possible. Therefore, the works are not anticipated to have an adverse impact on geology and soils. However, the following mitigation measures will be adhered to on site:

- Excavated material will be kept to a minimum and reused on site where possible.
- The parking of machinery/vehicles 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.
- All relevant soil management toolbox talks will be included in the SEMP and sediment control measures will be in place to prevent soil erosion and loss of containment.
- Additional pollution prevention measures as outlined in the 'Road drainage and the water environment' section will be adhered to on site.

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

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:

- Waste collected via the cleaning of culverts will be collected by Jet-vac and disposed of in a licenced waste facility.
- 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.
- All wastes and unused materials will be removed from site in a safe and legal manner by a licensed waste carrier upon completion of the works. The appointed waste carrier will have a valid SEPA waste carrier registration, a copy of which will be provided to and retained by BEAR Scotland as early as possible.
- All appropriate waste documentation will be present on site and be available for inspection. A copy of the Duty of Care paperwork will be provided and filed

appropriately in accordance with the Code of Practice (as made under Section 34 of Environmental Protection Act 1990 as amended).

- Re-use and recycling of waste will be encouraged and the subcontractor will be required to fully outline their plans and provide documentary evidence for waste arising from the works (e.g., waste carrier's licence, transfer notes, and waste exemption certificates).
- Staff will be informed that littering will not be tolerated. Staff will be encouraged to collect any litter seen on site.
- Where applicable, all temporary signage will be removed from site on completion of the works.

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

Noise and vibration

Construction activities associated with the proposed 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 2 weeks and move progressively along the 2km stretch of A84 carriageway. Works will be conducted utilising a day time working pattern. Noise is not likely to be a defining feature of the works based on the proposed working activities and potential to induce worst-case scenario noise and vibration will also be intermittent, temporary and short-lived.

The following mitigation measures will be put in place:

- Local residents that are likely to be affected by the works will be notified of the works in advance, likely by letter drop, which will contain details of the proposed timings and duration of the works, in addition to contact details for the Site Supervisor.
- The Best Practicable Means, as defined in Section 72 of the Control of Pollution Act 1974, will be employed at all times to reduce noise to a minimum. On-site construction tasks will be programmed to be as efficient as possible, with a view to limiting noise disruption to local sensitive receptors.
- All site personnel will be fully briefed in advance of works regarding the need to minimise noise during works and of the site-specific sensitivities.
- Operatives will be briefed using the 'Being a Good Neighbour' toolbox talk prior to commencement of the works.

- Drop heights from vehicles and NRMM will be kept to a minimum to minimise noise when unloading.
- All plant, machinery and vehicles will be switched off when not in use.
- All plant will be operated in such a way that minimises noise emissions and will have been maintained regularly to the appropriate standards.
- Where fitted, and where permitted under Health and Safety requirements, white noise reversing alarms will be utilised during construction.
- Where ancillary plant such as generators are required, they will be positioned so as to cause minimum noise disturbance. Where deemed necessary, acoustic screens will be utilised.

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

Population and human health

During construction, activities undertaken on site may have temporary adverse impacts on local residents, vehicle travellers, and non-motorised road users (NMUs) as a result of construction presence, and associated noise and delays due to traffic management measures. However, no significant congestion issues are noted during the proposed construction hours and, although increased journey times may occur, these are considered insignificant considering the relatively low traffic count on this section of the road. In the even of local access restrictions to residential properties, access will be granted as requested. Access to any NMU facilities located within 300m of the scheme will be maintained.

There are approximately 8 residential properties in total in proximity to the scheme, with the closest being directly adjacent to the A84 trunk road with minimal screening. Therefore, there is potential for disturbance from noise and vibration.

However, 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 will be communicated to local residents throughout the programme.
- Given the proximity of the works to residential properties, the toolbox talk 'Being a Good Neighbour' will be briefed prior to works commencing.

- 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 indirect impacts on the water environment due to operation within the drainage system with connectivity to various water bodies which may lead to potential changes in water quality from pollution events (either by loss of containment, particulate matter, chemicals, fuels, or by mobilisation of these in surface water caused by rain).

However, the following mitigation measures will be put in place, in addition to those outlined in the HRA, to reduce the risk of pollution incidents as a result of works:

- The scheme will involve drainage works only and no in-stream works in any classified water body is permitted.
- Standard working practices to comply with The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) for works in or near water will be detailed in the SEMP and adhered to on site.
- No discharges into any watercourses or drainage systems will be permitted. Appropriate containment measures will be in place to prevent any loss of construction materials into the water environment.
- A toolbox talk on silt and sediment containment will be delivered to all site staff as part of the site induction.
- 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 be fully bunded. This will be distanced more than 10m from any watercourses.
- During refuelling of smaller mobile plant, a funnel will be used, and drip trays will be in place. Care will be taken to reduce the chance of spillages. Spill kits will be quickly accessible to capture any spills should they occur. The ground / stone around the site of a spill will be removed, double bagged and taken off site as special waste.
- Generators and static plant may have the potential to leak fuel and / or other hydrocarbons and will have bunding with a capacity of 110%. If these are not bunded then drip trays will also be supplied beneath the equipment with a capacity of 110%.

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

Climate

Construction activities associated with the proposed 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 removed to local waste management facilities.

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

Vulnerability of the project to risks

It is expected that the risk of flooding on the A84 at the scheme extent will be reduced following the works, by improvement of drainage and the clearing of existing culverts.

Works will be programmed as far as is reasonable practicable to avoid periods of adverse weather or heavy rainfall.

Works are restricted to areas of made ground of the A84 trunk road boundary and its drainage system, with access to the scheme gained via the A84. TM will involve single lane closures with two-way temporary traffic lights. 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 if required.

The works will not result in any change in vulnerability of the A84 carriageway or active travel route to risk, or in severity of major accidents/disasters that would impact on the environment.

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 [LLTNP Planning Portal](#) identified no approved planning applications within 300m of the scheme within the last six months.

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

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

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

Assessments of the environmental effects

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

A HRA was conducted due to proximity and ecological connectivity with the River Teith SAC. The assessment concluded LSE of the works could not be ruled out for the qualifying features of the SAC; however, with appropriate measures in place, the proposed works will not result in AESI. Loch Lubnaig SSSI is in proximity to the works and overlaps with the SAC, therefore, it was included as part of the assessment and no negative impacts on this feature as a result of the works were identified.

Statement of case in support of a Determination that a statutory EIA is not required

This is a relevant project in terms of section 55A(16) of the Roads (Scotland) Act 1984 as it is a project for the improvement of a road and the completed works (together with any area occupied by apparatus, equipment, machinery, materials, plant, spoil heaps, or other such facilities or stores required during the period of construction) are situated in whole within the Loch Lomond and the Trossachs National Park, which is a sensitive area within the meaning of regulation 2(1) of the Environmental Impact Assessment (Scotland) Regulations 1999.

The project has been subject to screening using the Annex III criteria to determine whether a formal Environmental Impact Assessment is required under the Roads (Scotland) Act 1984 (as amended by The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017). Screening using Annex III criteria, reference to consultations undertaken and review of available information has not identified the need for a statutory EIA.

The project will not have significant effects on the environment by virtue of factors such as:

Characteristics of the scheme:

- Works are localised to the trunk road drainage improvement works and the clearing of existing culverts.

- Construction activities are restricted to an area of 600m in total, at 4 sites along a 2km section of the A84 trunk road.
- Works are not expected to result in significant disturbance to nearby receptors or protected species that may be present in the wider area, out with those detailed in the HRA Proforma AA.
- No INNS were recorded during the ecological survey.
- The risk of major accidents or disasters is considered to be low.
- Any potential impacts of the works are expected to be temporary, short-term, non-significant, and limited to the construction phase.
- Residual impacts are considered to be beneficial for the travelling public which may use this stretch of carriageway. In addition, improved drainage will improve road safety following the works.

Location of the scheme:

- The scheme fully lies within the existing A84 trunk road boundary. The works have hydrological connectivity with the River Teith SAC. Due to the localised, minor nature of the works and mitigation measures, no AESI are predicted on the qualifying features of the SAC, as concluded in the HRA.
- The scheme is located within the Loch Lomond and Trossachs National Park Authority who will be notified of the proposed works.
- There are no GCRS or a geologically designated SSSI within 300m of the works.
- There are several features of cultural heritage importance within proximity to the schemes; however, the scheme is not located within any sites of historical, cultural or archaeological importance.
- The location of the site compound is still to be confirmed; however, will most likely be located within TM on the made ground.

Characteristics of potential impacts of the scheme:

- Containment measures will be in place to prevent debris or pollutants from entering the surrounding environment.
- Measures will be in place to ensure appropriate removal and disposal of waste.
- Residual visual impacts will be localised to the existing A84 and drainage system and are not considered to be significant.
- Works are programmed to be of short duration and undertaken during day-time hours; the works will also move progressively along the scheme
- The SEMP will include plans to address environmental incidents.

- Mitigation measures detailed above and in the SEMP will be put in place with the objective to prevent and, if required, subsequently control any potential impacts on sensitive receptors.
- In the event that INNS are found on site, measures to prevent potential INNS spread will be implemented.
- No in-combination effects have been identified.

Annex A

“sensitive area” means any of the following:

- land notified under sections 3(1) or 5(1) (sites of special scientific interest) of the Nature Conservation (Scotland) Act 2004
- land in respect of which an order has been made under section 23 (nature conservation orders) of the Nature Conservation (Scotland) Act 2004
- a European site within the meaning of regulation 10 of the Conservation (Natural Habitats, &c.) Regulations 1994
- a property appearing in the World Heritage List kept under article 11(2) of the 1972 UNESCO Convention for the Protection of the World Cultural and Natural Heritage
- a scheduled monument within the meaning of the Ancient Monuments and Archaeological Areas Act 1979
- a National Scenic Area as designated by a direction made by the Scottish Ministers under section 263A of the Town and Country Planning (Scotland) Act 1997
- an area designated as a National Park by a designation order made by the Scottish Ministers under section 6(1) of the National Parks (Scotland) Act 2000.



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Published by Transport Scotland, January 2025

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