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Environmental Impact Assessment Record of Determination

A85 West of Lix Toll Embankment

Contents

Project Details

Description

BEAR Scotland has been commissioned by Transport Scotland to carry out embankment widening works on a 400m section of the A85 trunk road west of Lix Toll (see Figures 1 and 2 below). This is due to rutting and structural defects in the trunk road and to facilitate future installation of VRS.

The proposed works involve the widening of approximately 270m of embankment by 2.5m, with slope regrading at a gradient of 1:5, which will include tree felling. The exact number and areas of trees to be removed is still to be confirmed, but will largely consist of Sitka spruce on the embankment. The works will also comprise culvert extension and lining.

Embankment works are programmed to commence in early 2026, currently programmed for January, and will utilise a daytime working pattern (07:00 – 19:00) over five weeks. Changes to the programme may result in amendments to these dates.

Traffic management (TM) for the works will consist of eastbound lane closures facilitated by two-way temporary traffic lights. Local access and non-motorised road users (NMRUs) will be accommodated within the TM as much as is reasonably practicable.

Location

The scheme is located on a rural stretch of the A85 west of the small settlement of Lix, in the Stirling Council Local Authority. National grid references (NGRs) for the scheme are NN 53868 29686- NN 53508 29510.

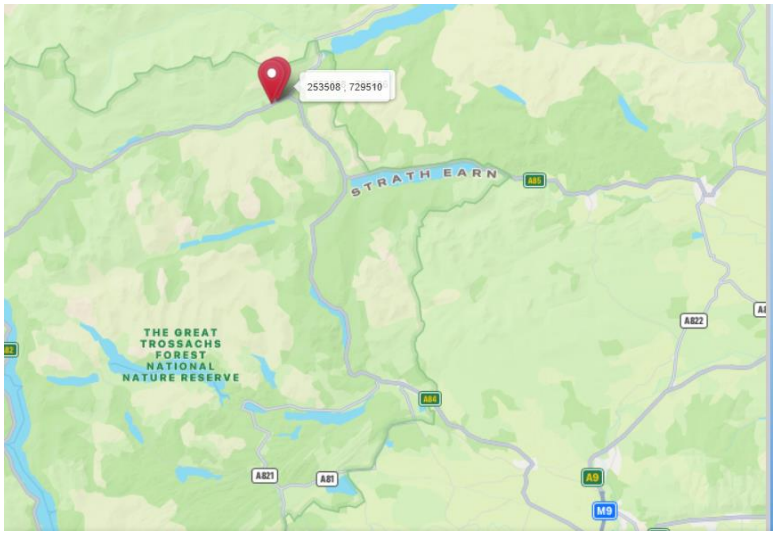

Figure 1: Scheme location

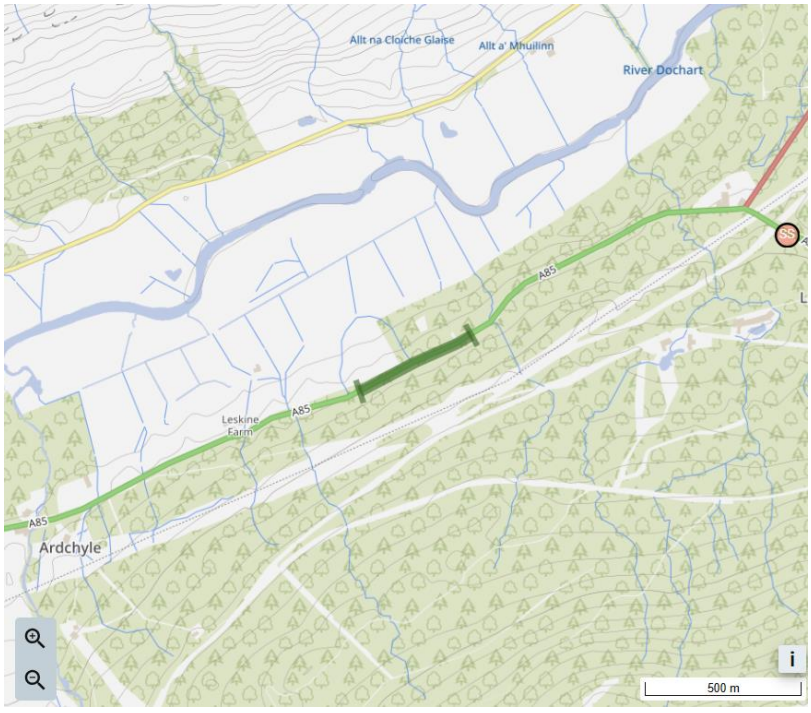

Figure 2: Scheme extents

Description of local environment

Air quality

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

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

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

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

Cultural heritage

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

- Three National Records of the Historic Environment (NRHE) and Historic Environment Records (HER), the closest of these is a HER of an archaeological event 90m north of the works.

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

Landscape and visual effects

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

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

The scheme is not located within proximity to a National Scenic Area or any other sites of designated landscape character or quality (SiteLink).

The scheme is located on a rural stretch of the A85 west of the Lix Toll junction. The surrounding land is dominated by grazing pastures, wet heath, mixed woodland, including forestry plantations, and residential settlements. Areas of upland heath are present further to the north and south of the works

The scheme is located within the Landscape Character Type (LCT) 'LCT 234-Straths and Glens with Lochs' which has the following key characteristics (NatureScot):

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

Biodiversity

The River Tay Special Area of Conservation (SAC) (Site ID: 8366) lies 380m north/downstream of the scheme at its nearest point.

Due to hydrological connectivity, a Habitats Regulations Appraisal (HRA) has been produced for further assessment.

There are no other European Sites, such as SAC, Special Protection Areas (SPA), or Ramsar, within 2km of, or with connectivity to, the scheme. There are no locally or nationally designated sites for biodiversity features (e.g. Local or National Nature Reserves, Sites of Special Scientific Interest (SSSI)) located within 300m of the scheme (SiteLink).

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

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

The Transport Scotland Asset Management Performance System (AMPS) holds one record of rosebay willowherb (*Chamaenerion angustifolium*) and common ragwort (*Jacobea vulgaris*) within 300m of the scheme.

Habitat in the surrounding area is dominated by plantation conifer forestry, heathland, modified bog, freshwater habitat, and grazing pastures.

There are no areas of ancient woodland as listed on the Ancient Woodland Inventory (AWI) within 300m of the scheme.

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

A Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) of the works disturbance buffer was conducted by the BEAR Scotland NW Environment Team on 04/07/2025.

Geology and soils

There are no Geological Conservation Review Sites (GCRSs) or SSSIs designated for geological features within 300m of the scheme (SiteLink).

Component soils within the scheme extent are humus-iron podzols with peaty gleys of the Strichen association. The parent materials are drifts derived from arenaceous schists and strongly metamorphosed argillaceous schists of the Dalradian Series (Scotland's Soils).

Soils in the area around the scheme extent are comprised of Class 0 mineral soils as shown on the Carbon and Peatland Map 2016, and peatland habitats are not typically found on such soils. However, peatland vegetation and a surface layer of peat was noted in the eastern half of the scheme verge during survey.

Bedrock geology within the scheme extent is comprised of Loch Tay Limestone Formation – Metalimestone which is a metamorphic bedrock (Scottish Geology Trust).

Material assets and waste

The proposed embankment works will involve slope regrading, tree felling and culvert extension/lining. Excavation is required as part of the works with excavated material to be reused within the scheme extents where possible. Similarly, it is expected that any cleared vegetation and trees will be chipped on site. Materials will consist of:

- Geotextile
- 6B aggregate or equivalent
- Topsoil
- Grass seed
- Flex MSE bags may be used

The scheme value does not exceed the value for the requirement for a Site Waste Management Plan (SWMP).

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

Any felled vegetation material will be disposed of appropriately in line with the NW NMC Contract (Schedule 5, Appendix 0/1, 3010SR Maintenance of Established Trees and Shrubs). If more than 5m^3 of timber will be felled from third-party land, a felling licence from Scottish Forestry will be obtained prior to works.

Site access will be taken directly from the A85 within the designated traffic management (TM) area, where a lane closure will be in place. A site compound will be established on existing hardstanding at National Grid Reference (NGR) NN 53833 29697.

Noise and vibration

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

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

Noise modelled data from Environmental Noise Directive (END) Round 4 Noise Mapping indicates annual average noise level for day, evening and night (Lden) as between 65 and 70dB at the scheme location (SpatialData).

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

Population and human health

The scheme lies on a rural stretch of the A85 west of Lix Toll. One residential property lies 300m west of the scheme, and no other human receptors are located within 300m of the works.

One access point to an area of hardstanding previously established for commercial forestry extraction lies adjacent to the eastbound carriageway within the scheme extents. The hardstanding is to be used as a site compound for the works.

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

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

In 2024, the annual average daily flow (AADF) of traffic was estimated on the A85 at a site 6.5km southeast of the scheme (Site ID: ATC06002) and accounted for 4,111 vehicles, with 20% of these heavy goods vehicles (HGVs) (Transport Scotland Traffic Count Data).

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

Road drainage and the water environment

The River Dochart (ID: 6502) lies 380m north/downstream of the works. The River Dochart was assigned 'moderate ecological potential' in 2023 by the Scottish Environment Protection Agency (SEPA) under the Water Framework Directive (WFD) (SEPA).

There are small tributaries and field drains (not shown on a 1:50k OS map) that are culverted under the carriageway within the scheme extent. These appear to run periodically dry.

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

SEPA Flood Map has highlighted no risk of flooding within the scheme extent.

Climate

The Climate Change (Scotland) Act 2009 ('The Act'), and its subsequent amendment under the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, sets the framework for the Scottish Government to address climate change. The Act has an ambitious target to reach Net Zero greenhouse gas emissions by 2045, with any residual emissions balanced by removing carbon dioxide from the atmosphere. This is five years earlier than the rest of the UK due to the greater potential for carbon sequestration in Scotland.

The Act was amended to replace interim targets with carbon budgets. Carbon budgets are legally binding caps on greenhouse gas emissions in Scotland over five-year periods. In line with the Act, the Climate Change Committee (CCC) published advice on the level of Scotland's four carbon budgets, covering the period 2026 to 2045, recommending what the Scottish Government sets its carbon budgets at for annual average levels of emissions. These recommendations are based on an ambitious but credible route to Net Zero for Scotland by 2045.

Emissions reductions from surface transport are the largest contribution to meeting the first two carbon budgets. The pathway for surface transport emission reduction is primarily driven by the uptake of electric vehicles, in addition to measures to enable a shift from car use to public transport and active travel, which all play a role in reducing emissions from fossil fuel cars. Ensuring efficiency of existing transport infrastructure and improving/providing new active travel facilities is therefore important to support these carbon reduction budgets.

Transport is the largest contributor to harmful climate emissions in Scotland. In response to the climate emergency, Transport Scotland are committed to reducing their emissions by 75% by 2030 and to the above noted legally binding target of net-zero by 2045. Transport Scotland is committed to reducing carbon across Scotland's transport network and this commitment is being enacted through the Mission Zero for Transport (Mission Zero for transport | Transport Scotland).

Policies and plans

This Record of Determination has been undertaken in accordance with all relevant regulations, guidance, policies and plans, notably including the Environment and Sustainability Discipline of the Design Manual for Roads and Bridges (Design Manual for Roads and Bridges (DMRB)) and Transport Scotland's Environmental Impact Assessment Guidance (Guidance - Environmental Impact Assessments for road projects (transport.gov.scot)).

Description of main environmental impacts and proposed mitigation

Air quality

Construction activities associated with the proposed works have the potential to temporarily cause local air quality impacts. The main sources are likely to be from dust and exhaust emissions generated by excavation and vegetation management. There is also the potential for air quality impacts from exhaust emissions from ancillary plant and vehicles passing through the TM. As a result, there is potential for dust, particulate matter, and exhaust emissions to be emitted to the atmosphere. However, taking into account the nature and scale of the works and the following mitigation measures, the risk of significant impacts to air quality are considered to be low.

- A water-assisted dust sweeper will sweep the carriageway after dust-generating activities, and waste will be contained and removed from site as soon as is practicable.
- Materials that have a potential to produce dust will be removed from site as soon as possible.
- 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

There are no records of cultural heritage feature within the footprint of the scheme and no designated features within 300m.

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

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

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

Landscape and visual effects

The scheme is located wholly within LLTNP. The works will create a short-term impact on the landscape character and visual amenity during the construction period as a result of the presence of construction plant, vehicles, and TM. However, personnel, ancillary plant, vehicles, NRMM and materials will be restricted to the hardstanding and verge of the A85.

The embankment works will be undertaken during the daytime and there is vegetation clearance associated with the verge works. However, these works are of a localised scale, and within an area of plantation forestry which is already subject to cyclic major vegetation clearance. Upon completion, the verge will be dressed with top soil and grass seed, making it visually in keeping with verges further east and west along this section of road. There may be a minor beneficial visual effect on completion due better views of the River Dochart from the road as a result of tree felling.

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

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

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

Biodiversity

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

However, the scheme lies 380m upstream of the River Tay Special Area of Conservation (SAC; NatureScot Site Code: 8366). A HRA has been undertaken which concluded that with best practice measures in place, there will be no Likely Significant Effects on the qualifying features of the SAC due to the following considerations:

- Works are located over 300m from the SAC and therefore will not result in direct alteration or removal of any habitat features associated with the SAC.
- Pollution pathways between the works and wider water environment are limited due to sufficient distancing, nature of the works, and no requirement for in-water works.
- Some minor watercourses and drainage channels flow below/in proximity of the A85 carriageway near the works location which connect with River Dochart, however these do not provide suitable habitat/features to support any shelters (based on survey results).
- Species in this area are likely to be habituated to high levels of noise, lighting and vehicle movement due to existing levels of traffic on the A85, and the River Dochart offers abundant favourable foraging habitat in the wider area.

In general, activities associated with the works undertaken on site could potentially have a temporary adverse impact on biodiversity in the wider area as a result of an increased vehicle presence and the potential for noise and light disturbance to protected species and pollution of habitats. There is also the potential for additional adverse impacts associated with the embankment works due excavation and tree felling causing potential loss of habitat.

A PEA and PRA were conducted to assess the ecological features present, or potentially present, within the site boundary and its surrounding disturbance buffers. No potential roost features (PRFs) for bats, signs of nesting birds, invasive plant species, or field signs/shelters of protected mammal species were identified.

- Vegetation clearance will be restricted to the trunk road corridor, immediate embankment and associated SUDS features, where woodland edge habitat is already present along this section of the A85. The proposed works will push the edge of the woodland back from the road, but it will remain a feature of the road corridor in this area. Furthermore, areas of woodland and connectivity corridors (e.g., tree lines) will be retained in the wider landscape, so vegetation clearance will not result in fragmentation or loss of connectivity to surrounding woodland habitat. This area is also already subject to forestry management; small-scale vegetation clearance for these works is considered a minor overall impact to the area.
- 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 immediate carriageway embankment and any species in the area are likely to be accustomed to noise and visual disturbance pertaining to vehicle movements on the A85. The scheme is of relatively short duration (up to five weeks) and will be undertaken during the daytime working hours, with artificial lighting kept to a minimum as far as practicable and directed away from woodland. The potential for significant species disturbance within the area of construction is therefore considered to be low. In addition, the site survey undertaken by BEAR Scotland NW Environment team did not identify any signs of protected species within disturbance buffers of the works.

- No INNS were identified during the site survey. The scheme does not require permanent (or temporary) land-take, and standard good practice will be employed when importing topsoil. As such, there is limited potential to spread or introduce INNS on site.

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

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

- Works will be strictly limited to areas required for access and to carry out the works. Unnecessary encroachment onto terrestrial or aquatic areas will not be tolerated. Where works are required outwith 10m of the carriageway, ECoW may be required to ensure protected species are not adversely impacted.

- Trees to be removed will be recorded so that compensatory planting can be carried out in an appropriate area in future.

- Works will avoid the main breeding bird season (March to August inclusive) as far as possible. If works are delayed and will be carried out during this period, a nesting bird check will be conducted two weeks and no more than 48 hours prior to commencement of the works.

- A pre-works check will be conducted within two weeks of vegetation management works commencing. If nesting birds or protected mammal places of shelter are found, further consultation and/or licences will be sought if required. If required, all conditions of any licences will be adhered to.

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

- Vegetation clearance will be limited to the minimum amount necessary to enable embankment works.

- 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 animal has sufficiently moved on. Any sightings of protected species will be reported to the BEAR Scotland Environmental Team.
- 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 scheme is not located within a site of geological significance and all works are restricted to the trunk road boundary and verge. Although the embankment works include excavation, verge works and vegetation clearance, the works are confined to

the verge within 10m of the trunk road which is likely to have been previously modified. In addition, any excavations will be carried out with good practice measures detailed in the SEMP as follows:

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

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

Material assets and waste

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

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

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

- The waste hierarchy (Reduce, Reuse, Recycle and Dispose) will be employed throughout the construction works.
- The subcontractor will adhere to waste management legislation and ensure they comply with their Duty of Care.
- Containment measures will be in place to prevent debris or pollutants from entering the surrounding environment.
- Excavated material generated from embankment works will be re-used on site where possible.
- Felled vegetation material will be chipped on site or removed to a licensed facility.
- Biosecurity measures will be in place for any trees infected with ash dieback, these will be taken off-site and burned for biomass.
- All wastes and unused materials will be removed from site in a safe and legal manner by a licensed waste carrier upon completion of the works. The appointed waste carrier will have a valid SEPA waste carrier registration, a copy of which will be provided to and retained by BEAR Scotland as early as possible.
- All appropriate waste documentation will be present on site and be available for inspection. A copy of the Duty of Care paperwork will be provided and filed appropriately in accordance with the Code of Practice (as made under Section 34 of Environmental Protection Act 1990 as amended).
- Re-use and recycling of waste will be encouraged and the subcontractor will be required to fully outline their plans and provide documentary evidence for

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

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

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

Noise and vibration

Construction activities associated with the proposed works have the potential to cause noise and vibration impacts through the use of equipment and construction vehicles for the proposed activities. However, the works are not located within a CNMA, and there are no residential or commercial properties within 300m except a farmhouse which lies 300m west of the westernmost extent. Embankment works will be carried out during a daytime working pattern which will minimise disturbance. Works with the potential to induce worst-case scenario noise and vibration will also be intermittent, temporary, transient and short-lived.

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.
- 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 may have temporary adverse impacts on local residents, vehicle travellers, and non-motorised road users (NMUs) as a result of construction presence, and associated noise and delays due to traffic management measures. There are no access points or junctions within the scheme extent except the access point to the area of hardstanding which is to be used as a site compound. There are no other NMU provisions within the scheme and there is only one property in the vicinity which lies 300m west of the scheme and is accessed from further along the A85.

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

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

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

- Notification will be issued to local residents and local public transport operators prior to commencement of the works, advising of any proposed works and expected restrictions. Information will provide contact details (office phone number and e-mail address) for the Project Engineer as well as a 24-hour contact number for the BEAR Scotland Control Room.
- Local access will be granted as required.
- Any changes of schedule (e.g. change from day-time works to night-time works) will be communicated to local residents throughout the programme.
- Appropriate provisions / measures will be implemented within the traffic management to allow the safe passage of NMUs of all abilities through the site.
- Journey planning information will be available for drivers online at the trafficscotland.org website. Journey planning information will also be available for drivers online through BEAR's social media platforms.

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

Road drainage and the water environment

There is potential for temporary impacts on the water environment due to embankment and culvert works and the operation of plant within proximity to watercourses and freshwater bodies which may lead to potential changes in water quality from pollution events (either by accidental spillage of sediments, particulate matter, chemicals, fuels or by mobilisation of these in surface water caused by rain). Although in-water works will be required for extensions of the culverts, there is no requirement for the abstraction or transfers of water from, or discharges to, a waterbody. The minor watercourses which are culverted within the scheme were not deemed suitable for aquatic species, and straw bales will be placed downstream to contain any silt produced.

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, silt containment, 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:

- Standard working practices to comply with Environmental Authorisations (Scotland) Regulations 2018 (EASR) (including General Binding Rules) for works in or near water will be detailed in the SEMP and adhered to on site.
- No discharges into any watercourses or drainage systems will be permitted. Appropriate containment measures will be in place to prevent any loss of construction materials into the water environment.
- An incident response (contingency) plan will be put in place to reduce the risk from pollution incidents or accidental spillages. All necessary containment equipment, including suitable spill kits (for oil and chemicals) will be available on site, quickly accessible if needed, and staff trained in their use.
- All spills will be logged and reported. In the event of any spills into the water environment, all works will stop and the incident will be reported to the project manager and the BEAR Scotland Environmental Team. SEPA will be informed of any such incident as soon as possible using the SEPA Pollution Hotline.

- Felled vegetation material (where necessary) will be disposed of appropriately in line with the NW NMC (Schedule 5, Appendix 0/1, 3010SR Maintenance of Established Trees and Shrubs).
- Chipping will be conducted at least 10m away from watercourses, drains and waterbodies. If left on site, chippings will remain 10m away from any watercourse, drain or waterbody.
- Any vegetation cuttings will not be disposed of in the watercourse. Where cuttings do not contain any invasive species, they will be left to compost in piles at a suitable area on-site at least 10m away from any watercourses or surface water drains.
- Tree stumps will be left in place following tree felling, to minimise erosion of the embankment.
- The 'Silt Pollution' toolbox talk will be briefed to all operatives before the commencement of works.
- All plant and equipment will be regularly inspected for any signs of damage and leaks. A checklist will be present to make sure that the checks have been carried out.
- Storage of hazardous material, oil and fuel containers will be distanced more than 10m away from any watercourses.
- If required, a designated refuelling area will be identified. Fuel bowsers will be stored on an impermeable area and be fully bunded. This will be distanced more than 10m from any watercourses.
- During refuelling of smaller mobile plant, a funnel will be used, and drip trays will be in place. Care will be taken to reduce the chance of spillages. Spill kits will be quickly accessible to capture any spills should they occur. The ground / stone around the site of a spill will be removed, double bagged and taken off site as special waste.
- Generators and static plant may have the potential to leak fuel and / or other hydrocarbons and will have bunding with a capacity of 110%. If these are not bunded then drip trays will also be supplied beneath the equipment with a capacity of 110%.

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

Climate

Construction activities associated with the proposed schemes have the potential to cause local air quality impacts as a result of the emission of greenhouse gases through the use of vehicles and machinery, material use and production, and transportation of materials to and from site. Works involve removal of trees and any trees to be felled will be recorded to inform future compensatory planting, which will help offset any loss of carbon storage resulting from the scheme. 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.
- Trees removed from the trunk road boundary will be recorded to inform future compensatory planting.

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

Vulnerability of the project to risks

There will be no change to the likelihood of flooding on the A85 within the scheme extents upon completion of the works. Although the trees along the verges participate in flooding reduction by slowing down the flow of rainwater, absorbing rainwater and reducing erosion, it is not expected that removal of the trees will significantly impact local flooding due to the presence of drainage and additional vegetation. Works will be programmed as far as is reasonably practicable to avoid periods of adverse weather or heavy rainfall.

Works are restricted to areas within 10m of the trunk road, with access to the scheme gained via the A85. TM for scheme works will involve lane closures with two-way temporary traffic lights. Local residents will be notified of working hours and provided with appropriate contact information. There are no pedestrian facilities located within the scheme extents, however, pedestrians or other NMUs will be accommodated within the TM setup where required.

The works will result in slight positive change in vulnerability of the A85 carriageway, and reduce the severity of major accidents/disasters due to widening and regrading

of the embankment reducing the chance and severity of errant vehicles falling down the slope.

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

Assessment of cumulative effects

The proposed works are not anticipated to result in significant environmental effects. Due to the nature of the proposed works, no cumulative effects are anticipated with any other developments in the vicinity.

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 (Scottish Road Works) 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.

The following vegetation clearance/tree felling schemes are currently programmed by BEAR Scotland on the A85:

- A85 Glen Ogle Embankment
- A85 Ben More Layby Provision
- A828 Connel Bridge Junction with A85 NMU Improvements
- A85 East of Lochearnhead
- A85 Loch Earn Slopes Geotechnical Assessment
- A85 Trowan 120 W87

Trees to be removed across the various schemes conflict with the trunk road infrastructure, improvement works, and/or have a likelihood to fall due to high wind events. Tree removal will be limited to the minimum number required to ensure the safety of road users and will be focused on the trunk road corridor, which is likely to provide sub-optimal habitat for adjacent trees due to the proximity of the trunk road and exposure to salt and other runoff from the road. Furthermore, the vast majority of trees to be removed as part of the West of Lix Toll scheme are non-native spruce trees that have been planted for commercial purposes so are not considered to be of high biodiversity value. The total quantity of trees to be removed from the A85 trunk road has been assessed as negligible in the context of both the local and wider landscape, with woodland remaining a dominant feature along the trunk road corridor for much of the extent. In addition, the cumulative number of trees/vegetation to be

removed will be considered and recorded for future compensatory planting in appropriate locations. Suitable locations for replanting are highly limited within the trunk road boundary in proximity to these schemes; therefore, BEAR Scotland will seek to identify alternative suitable locations for compensatory planting, in discussion and consultation with Transport Scotland.

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.

The HRA Proforma completed to assess potential impacts of the works has concluded that there will be no LSE on the qualifying features of the River Tay 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 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:

- Embankment works are restricted to an area of 0.6ha and a length of 400m.
- Works are not expected to result in significant disturbance to nearby receptors or protected species that may be present in the wider area.
- Works will be temporary, localised and of short duration, with embankment works completed during day time hours.

- There is hydrological connectivity to the River Tay SAC and additional mitigation measures to prevent water pollution will be detailed in the SEMP.
- Ecological surveys to date have identified no signs or shelters of protected species within survey buffers. A pre-construction check will be undertaken prior to vegetation management. Nesting bird checks will also be undertaken prior to vegetation management works if works are to be undertaken during bird breeding season (March to August inclusive).
- The risk of major accidents or disasters is considered to be low.
- Any potential impacts of the works are expected to be temporary, short-term, non-significant, and limited to the construction phase.
- Residual impacts are considered to be beneficial for the travelling public which may use this stretch of carriageway as embankment works will provide lateral restraint to the A85 carriageway and deter cracking of the road surface.

Location of the scheme:

- The scheme will be located within the A85 carriageway verge, with some works outwith the trunk road boundary.
- The scheme is located within the Loch Lomond and the Trossachs National Park. Following the embankment works, the local landscape will largely remain the same, as the felled regraded verge will be in keeping with the verges further east and west along the carriageway on this section. The Loch Lomond and the Trossachs National Park Authority will be consulted on the works.
- The River Dochart, which forms part of the River Tay SAC, lies 380m downstream of works. The HRA Proforma concluded that the works would not result in any LSE on the qualifying features of this site
- The site compound will be located on made ground out with the trunk road.

Characteristics of potential impacts of the scheme:

- Containment measures will be in place to prevent debris or pollutants from entering the surrounding environment.
- Measures will be in place to ensure appropriate removal and disposal of waste.
- Residual visual impacts will be localised to the existing A85 and eastbound verge and are not considered to be significant.

- Works are programmed to be of short duration (five weeks) and embankment works will be carried out during the day.
- 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.
- 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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