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Environmental Impact Assessment Record of Determination

A85 Motorcycle PRIME Trial Phase 2 (2024/25)

Contents

Project Details

Description

BEAR Scotland has been commissioned by Transport Scotland to carry out installation of Motorcycle Perceptual Rider Information for Maximising Expertise and Enjoyment (PRIME) signage and associated road markings along the A85 carriageway.

Works involve installation of new road markings and replacement of existing signage at six separate locations across the A85. Some minor changes to the sign locations may be conducted with new posts dug in by hand.

For road markings, a 3M tape with embossed reflective pattern will be attached to the carriageway with a bitumen screed. Signs will be grounded using portland cement within excavated foundations. All excavated earth to be redistributed on site.

The total works area is approximately 1.1ha.

The works are currently programmed to be completed within the 2024/2025 financial year, commencing in June 2024. It is expected that the works will be completed during daytime programming in two phases, over ten days in total.

Traffic management (TM) will vary depending on the location and space available on site. All signing works to be carried out as verge works and road markings likely to be installed under STOP/GO boards or temporary traffic lights (TTLs).

Location

The scheme is spread across six individual sites on the A85 between Dalmally and Comrie within the Stirling, Perth and Kinross, and Argyll and Bute Council areas (Figure 1). The sign locations have the following National Grid References (NGRs):

Site	National Grid Reference	Local Authority
A85 Dunira East	NN 73340 23295	Perth and Kinross
A85 Ardveich House	NN 61940 24341	Stirling
A85 Dalmally	NN 14826 27605	Argyll and Bute
A85 Clifton	NN 32093 30934	Stirling

Site	National Grid Reference	Local Authority
A85 Strone Hill	NN 21804 27186	Argyll and Bute
A85 Dalchonzie	NN 73875 23062	Perth and Kinross

Table 1 - Signage Locations

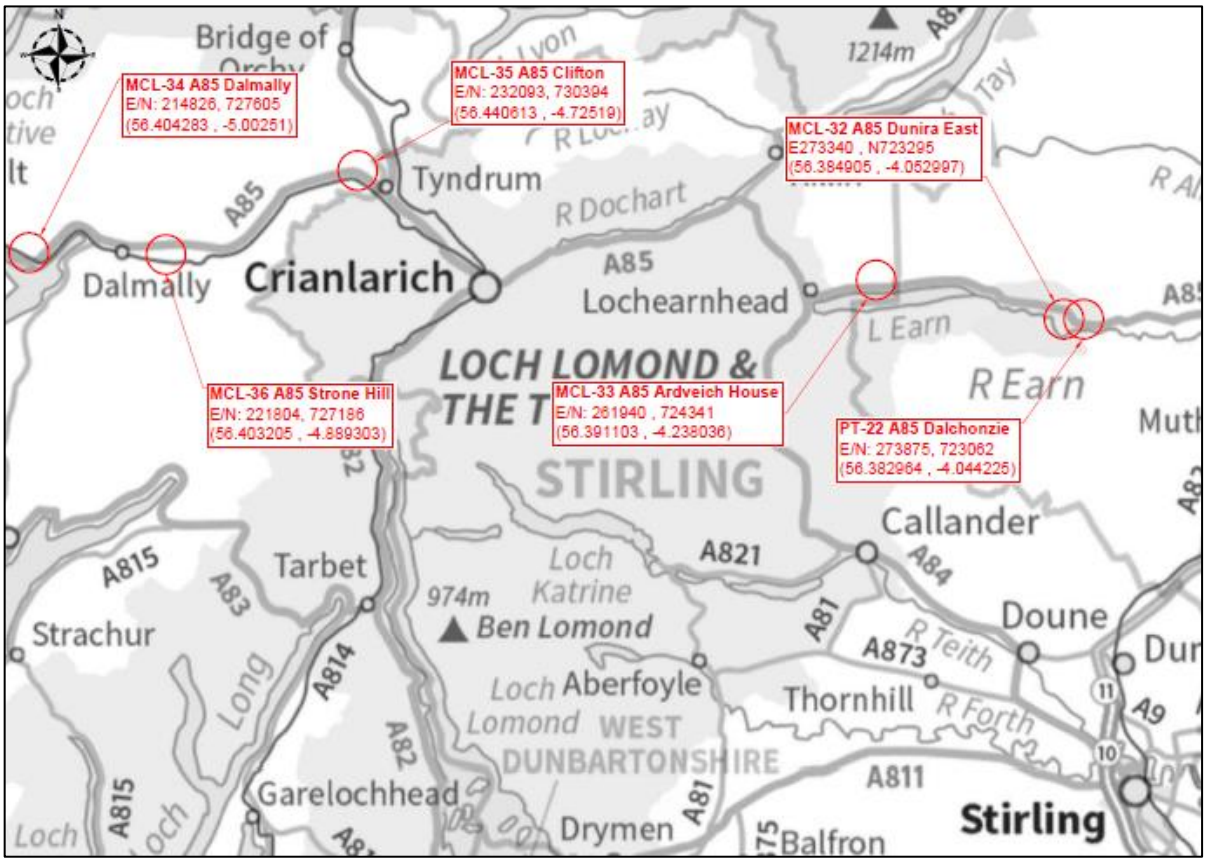

Figure 1. Scheme extent showing sign locations.

Description of local environment

Air quality

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

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

Baseline air quality in the study area is primarily influenced by vehicles travelling along the A85 trunk road. Secondary influences are likely derived from local agricultural and forestry activities.

In 2022, the average annual daily flow (AADF) of traffic was measured on a section of the A85 carriageway within the wider scheme extent (ID: 30775), and accounted for 2,694 vehicles, including 239 (10%) heavy goods vehicles (HGVs) (Road Traffic Statistics).

Cultural heritage

According to Pastmap, there are several cultural heritage features located within 300m of the scheme:

- Various Historic Environment Records (HERs) and Canmore database records lie within proximity the scheme extents at Strone Hill, Clifton, Dunira East, and Dalchonzie. The closest of these pertains to a record of the 'Dumbarton - Tarbet - Inveraray - Tyndrum Military Road' which is located within the Clifton site footprint. All other HER/Canmore records are found over 50m from the proposed sites.
- One Scheduled Monument (Tyndrum, Lead Mines) is located 210m south of the A85 Clifton site.
- One Listed Building is located 180m southeast of A85 Dalchonzie.
- The A85 Dunira East and Dalchonzie sites are both located within the Dunira Garden and Designed Landscape (GDL).

No cultural heritage records are found in proximity to the A85 Dalmally site.

There are no Conservation Areas, World Heritage Sites or Inventory Battlefields located within 300m of the scheme locations.

Landscape and visual effects

Two of the sites (Clifton and Ardveich) are located within the Loch Lomond and Trossachs National Park (LLTNP) (SiteLink). LLTNP has the following Special General Qualities:

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

- The easily accessible landscape splendour

Two further sites, Dalchonzie and Dunira East, are located within the River Earn (Comrie to St Fillans) National Scenic Area (NSA). This NSA has the following Special Qualities:

- A harmonious combination of highland and lowland
- An enclosed and unified strath
- The sinuous river at the heart of the NSA
- Rocky hillocks rising out of the level floodplain
- Diverse tree cover of woods and forests
- A managed, ordered landscape
- The spectacular De'ils Cauldron and Dunmore Hill
- The viewpoint of Dundurn, St Fillans Hill

The Dalmally and Strone Hill sites are not located within any sensitive areas.

The Landscape Character Types (NatureScot) recorded within the scheme are as follows:

- Upland Glens – Argyll (Type 37)
- Steep Ridges and Mountains (Type 34)
- Straths and Glens (Type 253)
- Straths and Glens with Lochs (Type 254)
- Lower Upland Glens (Type 372)

A85 Trunk Road 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 scheme is located within proximity of the following European designated biodiversity sites:

- Ben Lui Special Area of Conservation (SAC) (NatureScot Site Code: 8203), which is located 1.4km south east of the A85 Strone Hill site.

- River Tay SAC (NatureScot Site Code: 8366), which is located 720m from the A85 Clifton site.
- Upper Strathearn Oakwoods SAC (NatureScot Site Code: 10208), which is located 1.9km east of the A85 Dalchonzie site.

There are no locally or nationally designated protected sites located within 300m of the scheme, including Sites of Special Scientific Interest (SSSIs), National Nature Reserves (SiteLink).

It is possible that various invasive non-native species (INNS) of plants and injurious weeds may be present in the wider landscape of the scheme.

Transport Scotland's Asset Management Performance System (AMPS) records the following species within 300m of the scheme:

- Common ragwort *(Jacobaea vulgaris)*
- Rosebay willowherb *(Chamerion angustifolium)*

None of the records of these species lie within the scheme extents, with the nearest approximately 60m from the works (rosebay willowherb at A85 Dalmally).

Habitats surrounding the scheme include patches of mixed woodland types, commercial forestry, and some areas of agricultural grassland. Several rivers provide freshwater habitat corridors within 300m of the scheme.

No Tree Preservation Orders exist within 300m of the scheme, within either of the Argyll and Bute Council, Stirling Council, or the Perth and Kinross Council areas.

There are several areas of woodland within 300m of the scheme locations that are listed on the Ancient Woodland Inventory Scotland and located directly adjacent to the westbound carriageway, at A85 Dunira East (Scotland's Environment).

Considering the traffic density at the scheme extent, it is considered unlikely that any terrestrial mammal species of conservation importance are associated with permanent habitat or resting places within the area of likely construction disturbance. There is potential for mammal activity within adjacent tree lines, however it is unlikely that any permanent shelter features will be situated in close proximity to the A85. Furthermore, the scheme is of a minor, transient, and highly localised nature which will not increase disturbance levels within this section of the carriageway during the works. Therefore, a field survey has been ruled out, and a desktop study has been deemed sufficient for this assessment.

Geology and soils

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

Soil types within the scheme are recorded as a combination of the following (Scotland's Soils):

- Alluvial soils
- Brown earths with brown rankers with humus-iron podzols
- Peaty gleys with dystrophic semi-confined peat
- Mineral alluvial soils with peaty alluvial soils

Soil within the scheme is recorded as a mix of Class 0 (mineral soil with no peat or peatland vegetation), Class 3 (predominantly peaty soil with some peat soil and peatland with some heath) and Class 5 (peat soil with no peatland habitat recorded) (Scotland's Soils).

Bedrock within the scheme is recorded as a combination of the following:

- quartzite of the Carn Mairg Quartzite Formation
- pelite and graphitic of the Easdale Slate Formation
- psammite of the Auch Gleann Psammite Formation
- psammite and semipelite of the Pitlochry Schist Formation

Superficial deposits consist of various deposits of gravel, clay, silt, and sand (BGS Geology Viewer).

Material assets and waste

The proposed works involve installation of new signs and road markings within the A85 trunk road boundary. Materials used will consist of signposts, sign faces, tape, bitumen screed, and concrete.

Wastes are anticipated to be old signs/posts, which will be recycled, and excavated earth, which will be side-casted within the A85 verge.

The scheme value does not exceed £350,000 and as such a Site Waste Management Plan (SWMP) is not required for this scheme.

Noise and vibration

For sensitive receptors, refer to the 'Population and Human Health' section below.

The scheme is not located within a Candidate Noise Management Area (CNMA) as defined by the Transportation Noise Action Plan (TNAP).

There is no modelled noise level data (Lden and Lnight) for the A85 carriageway (or from other sources) available on Scotland's Noise Map within the scheme extents (Scotland's Noise Scotland's Environment).

Baseline noise levels are likely to be primarily influenced by traffic travelling along the A85 carriageway. Secondary sources are likely derived from local agricultural, forestry and recreational activities.

Population and human health

The following residential properties are located within 300m of the scheme:

- A85 Ardveich House – three properties, the closest of which is located 60m southeast.
- A85 Clifton – one property, 120m west.
- A85 Dalchonzie - one property, 170m east.

All of the above properties benefit from an element of acoustic screening from interceding woodland.

No residential or sensitive properties are located within 300m of A85 Dunira East, A85 Dalmally, or A85 Strone Hill.

The Highland Main Railway Line travels nearby several of the works locations; at a distance of 50m at its closest point.

Drummond Estate Boat Hire and caravan site, a recreational facility, is located 130m south west of the A85 Ardveich House site.

In 2022, the average annual daily flow (AADF) of traffic was measured on a section of the A85 carriageway within the wider scheme extent (ID: 30775), and accounted for 2,694 vehicles, including 239 (10%) heavy goods vehicles (HGVs) (Road Traffic Statistics).

There are no National Cycle Network routes within 300m of the scheme locations (OSMaps).

One access point is located at the A85 Dunira East site, leading to Dunira Estate.

No paths listed on WalkHighlands are located within 300m of the scheme.

Two Core Paths are located within 300m of the works; one located 90m north of the Ardveich House site, and one located 55m south of the A85 Dunira East site (Scotland's Environment).

TM will consist of verge working where possible; where TM is required, it will be in form of single lane closures facilitated by temporary two-way traffic light system or Stop/Go boards.

A85 Trunk Road 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.

Road drainage and the water environment

The following classified waterbodies by Scottish Environment Protection Agency (SEPA) under the Water Framework Directive 2000/60/EC (WFD), lie within 300m of the work sites (SEPA):

- A85 Dalmally – River Orchy (ID: 10285) is located 205m north and is in Moderate condition.
- A85 Strone Hill – River Lochy (ID: 10286) is located 160m south, Moderate condition.
- A85 Ardveich House – Beich Burn (ID: 6822), located 260m west, Good condition; and Loch Earn (ID: 100251), 20m south, Moderate condition.
- A85 Dalchonzie – River Earn (ID: 6839) located 100m south, Moderate condition.

A number of unclassified minor watercourses and drainage channels lie within 300m of the scheme (SEPA).

The scheme lies within the following groundwater bodies (SEPA):

- Oban and Kintyre (ID: 150698) which was classified by SEPA in 2022 as being in 'Good' condition.
- Killin, Aberfeldy and Angus Glens (ID: 150699); Good condition.
- Strathearn Sand and Gravel (ID: 150811); Good condition.

These groundwater bodies are all recorded as Drinking Water Protected Areas (Ground) (SEPA). A85 Ardveich House falls within a surface water DWPA (ScotGov).

Road drainage within the scheme is provided via cut grips.

Numerous areas of the A85 carriageway within proximity of the works areas are recorded as being at medium to high risk (0.5%-10% chance of flooding each year) to of surface and river water flooding (SEPA Flood Maps).

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 included a target of reducing CO_2 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 (RoD) has been undertaken in accordance with all relevant regulations, guidance, policies and plans, notably including the Environment and Sustainability Discipline of the Design Manual for Roads and Bridges (Design Manual for Roads and Bridges (DMRB)) and Transport Scotland's Environmental Impact Assessment Guidance (Guidance - Environmental Impact Assessments for road projects (transport.gov.scot)).

Description of main environmental impacts and proposed mitigation

Air quality

Construction activities associated with the proposed works have the potential to temporarily cause local air quality impacts. Activities undertaken on site may cause dust and particulate matter to be emitted to the atmosphere. However, taking into account the nature and scale of the works and the following mitigation measures, the risk of significant impacts to air are considered to be low.

- When not in use, plant and vehicles will be switched off; there will be no idling vehicles.
- All plant, machinery and vehicles associated with the works will be maintained in order to minimise emissions, as per manufacturing and legal requirements. No significant dust, particulate matter, and exhaust emissions sources will be introduced by the works.
- Green driving techniques will be adopted, and effective route preparation and planning to be undertaken prior to works.
- 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.
- Activities will be appropriately managed to reduce the potential for dust creation. This will involve use of measures such as dampening down or on tool extraction where required.
- 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.
- Surfaces will be swept where loose material remains.

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 RoD.

Cultural Heritage

Although there are records of cultural heritage interest within the scheme and within 300m of the scheme extents, any excavation works associated with the scheme are restricted to the already engineered carriageway boundary, and as such the potential for exposure of cultural heritage features is considered to be negligible. Construction of the A85 road corridor is likely to have removed any archaeological remains that may have been present.

Works are restricted to the A85 carriageway boundary and will be in keeping with surrounding street furniture; as such no change to the local landscape quality or the Dunira GDL.

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 Environment Team contacted for advice.
- People, plant, and materials shall, 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.

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 is potential for minor visual impacts to the local landscape during the construction phase as a result of obstructed views due to vehicles and machinery. Residual change will occur due to installation of new signs/road markings, however these will be minor. Works will be restricted to the A85 carriageway boundary and will entail signing works, which will not alter the visual character of the trunk road, with new signage installation/road markings being the only change. The new signage will be limited to the minimum necessary to comply with road safety standards and will be in keeping with existing road signage on the A85. The works are essential road safety upgrades and will be undertaken over a daytime working pattern on a

rolling programme. As such, no negative impact on the local landscape, or LLTNP or River Earn NSA are expected.

Land use will not change as a result of the works, and the works will not result in any significant residual change to the visual amenity of the local landscape. 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.
- Works will avoid encroaching on land and areas where work is not required or is 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 shall be reinstated as much as is practicable.

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

While some protected species are likely to be present in the vicinity of the scheme, it is unlikely that they will be encountered due to the restriction of works to the trunk road and its verges during the daytime. As such, limited best practice methods are outlined in the Site Environmental Management Plan (SEMP).

The scheme is located in proximity to various areas designated for biodiversity features, including Ben Lui SAC, River Tay SAC, and Upper Strathearn Oakwoods SAC. It was concluded that the works do not have the potential to result in LSE on these SACs due to the following factors:

- Works are localised entirely to the existing trunk road and its verges, with no works taking place within any of the SACs or any land-take required.
- All works are minor, transient, highly localised, and restricted to the A85 carriageway boundary with only sign installation and/or replacement and road marking being undertaken. There will be no in-stream works; therefore, no direct impacts to any of the freshwater features of the above European sites are anticipated.
- The main avenue for impacts to habitat features within the various SACs would be through pollution incidents. However, following standard pollution prevention measures a pollution incident is not considered likely. In addition, the significant distancing, very minor and localised scale of works and the lack

of connectivity to the SAC means that a pollution incident is unlikely to impact the SAC or its features.

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 A85 carriageway boundary, and the number of construction vehicles and construction operatives required onsite is low given the scale and scope of works. The standard good practice measures to prevent pollution and reduce noise and lighting (as noted above) will be in place across the full scheme extent. In addition, any species in the area are likely to be accustomed to noise and visual disturbance pertaining to vehicle movements on the A85 and the scheme is of short duration, transient in nature, and will be undertaken during daytime programming. The potential for significant species disturbance within the area of likely construction disturbance is therefore considered to be low.

Works will be required within the A85 carriageway soft verge, therefore there is potential for operatives to encounter INNS. There is no requirement to import topsoil and the small amounts of excavated soil required for new signposts will be spread within the road verge at the scheme extents. As such, there is limited potential to spread or introduce INNS, invasive native perennials, or injurious flowering plant species.

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

- Site personnel will remain vigilant for the presence of potentially unrecorded instances of INNS or injurious weeds in road verges throughout the works period. Should any INNS be identified in working areas, no works shall take place within 7m of these areas until the BEAR Scotland Environment Team can provide further advice on additional mitigation measures.
- Works will be strictly limited to areas required for access and resurfacing works. Unnecessary encroachment onto terrestrial or aquatic areas will not be tolerated.
- Site personnel will remain vigilant for the presence of any protected species throughout the works period. Should a protected species be noted during construction, works will temporarily halt until the species has sufficiently moved on. Any sightings of protected species shall be reported to the BEAR Scotland Environment Team.
- 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.

- Relevant toolbox talks for working with protected species will be included in the SEMP.
- 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

All works are confined to the A85 carriageway boundary and are restricted to signage and road marking works. The scheme is not located within a site of geological significance and no significant earthworks are expected as part of these works and excavated soil material will be side casted within the site. The following measures will be applied to on site:

- The parking of machinery/personnel and storage of equipment on road verges will not be permitted.
- Mitigation measures to prevent contamination of soils through loss of containment will be strictly adhered to.
- Standard good practice measures, like containment measures for working near water, to prevent water and soil pollution will be detailed in the SEMP and adhered to on site.

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.
- All wastes and unused materials will be removed from site in a safe and legal manner by a licensed waste carrier upon completion of the works. The appointed waste carrier will have a valid SEPA waste carrier registration, a copy of which will be provided to and retained by BEAR Scotland as early as possible.
- All appropriate waste documentation will be present on site and will be available for inspection. A copy of the Duty of Care paperwork must be provided and filed appropriately in accordance with the Code of Practice (as made under Section 34 of Environmental Protection Act 1990 as amended).
- Re-use and recycling of waste will be encouraged and undertaken where possible, and the subcontractor will be required to fully outline their plans and provide documentary evidence for waste arising from the works (e.g., waste carrier's licence, transfer notes, and waste exemption certificates).
- Staff will be informed that littering will not be tolerated. Staff will be encouraged to collect any litter seen on site.

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. The works will employ a day-time working pattern, and several properties fall within 300m of the schemes. Due to the short duration and localised nature of the works, any noise increases are considered to be negligible during the construction programme. 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 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. One access point is located at the A85 Dunira East site; however no other features are recorded within proximity of the works sites. Local access will be granted where required, and provisions for NMUs will be included within TM. The works will be of limited duration and will move progressively along the full scheme extent.

Increased journey times may occur due to TM requirements, but these are not considered to be significant due to the localised nature of the works. Traffic flow will be appropriately managed by operatives on site.

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

- Any changes of schedule (e.g. change from daytime 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 Scotland's social media platforms.

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

Road drainage and the water environment

During the works, there is potential for temporary impacts on the water environment. Potential changes in water quality from pollution events (either by accidental spillage of sediments, particulate matter, chemicals, fuels or by mobilisation of these in surface water caused by rain/flooding) during works have the potential to have a direct or indirect effect on the surrounding waterbodies. The following mitigation measures will be put in place to reduce the risk of pollution incidents as a result of works:

- The scheme will not entail any in-stream works.
- Standard working practices to comply with The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) for works in or near water are detailed in the SEMP and will be adhered to on site.
- No discharges into any watercourses or drainage systems are permitted. Appropriate containment measures will be in place to prevent any loss of construction materials into the water environment.
- An incident response (contingency) plan will be put in place to reduce the risk from pollution incidents or accidental spillages. All necessary containment equipment, including suitable spill kits (for oil and chemicals) will be available on site, quickly accessible if needed, and staff trained in their use.
- All spills will be logged and reported. In the event of any spills into the water environment, all works will stop, and the incident will be reported to the project manager and the BEAR Scotland Environmental Team. SEPA will be informed of any such incident as soon as possible using the SEPA Pollution Hotline.
- All plant and equipment will be regularly inspected for any signs of damage and leaks. A checklist will be present to make sure that the checks have been carried out.

- Storage of hazardous material, oil and fuel containers will be distanced more than 10m away from any watercourses.
- If required, a designated refuelling area will be identified. Fuel bowsers will be stored on an impermeable area and will be fully bunded. This will be distanced more than 10m from any watercourses.
- During refuelling of smaller mobile plant, a funnel will be used, and drip trays will be in place. Care will be taken to reduce the chance of spillages. Spill kits will be quickly accessible to capture any spills should they occur. The ground / stone around the site of a spill will be removed, double bagged and taken off site as special contaminated waste.
- Generators and static plant may have the potential to leak fuel and / or other hydrocarbons and will have bunding with a capacity of 110%. If these are not bunded then drip trays must also be supplied beneath the equipment with a capacity of 110%.

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

Climate

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

- BEAR Scotland will adhere to their Carbon Management Policy.
- Local contractors and suppliers will be used as far as practicable to reduce fuel use and greenhouse gas emitted as part of the works.
- Where possible, materials will be sourced locally to reduce greenhouse gas emissions associated with materials movement, and waste will be disposed at local landfill.

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

Vulnerability of the project to risks

Numerous areas of the A85 carriageway within the works location are recorded as being between medium and high risk (0.5 - 10% chance each year) of surface and river water flooding. Works will be programmed as far as is reasonably practicable to avoid periods of adverse weather or heavy rainfall.

Works are restricted to the boundary of the A85 carriageway and traffic management will be designed in line with existing guidance. Verge TM will be prioritised however if TM on live carriageway lines is required, it will consist of lane closures facilitated by two-way temporary traffic lights or Stop/Go boards. Where required, alternative NMU provisions/routes will be included in the traffic management setup, to minimise impact of the works on NMUs.

A Traffic Management Plan (TMP), which includes measures to avoid or reduce disruption to road traffic, will be produced in accordance with the Traffic Signs Manual (Department of Transport 2009). The TMP will ensure that there is no severance of community assets, access routes or residential development.

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

Assessment of cumulative effects

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

A search of relevant online council Planning Portals has not been undertaken, however due to the transient and minor nature of the works, the scheme is not considered to create any significant disruption to traffic flows or noise levels, thus would not introduce any cumulative effects where nearby works may be occurring.

A search of the Scottish Roads Works Commissioner website (Map Search) has identified that no other roadworks are currently ongoing, or noted as being planned, on the trunk road at the same time as this scheme. Due to the nature of the proposed works, no cumulative effects are anticipated with any other developments in the vicinity.

BEAR Scotland programme all of their proposed works in line with appropriate guidance and contractual requirements. All schemes are programmed to take into account existing and future planned works, with a view of limiting any cumulative

effects relating to TM. As a result of this exercise, where a potential for cumulative impacts is identified, BEAR Scotland will reprogramme schemes to avoid / limit any cumulative effects or will utilise existing TM to complete multiple schemes at once. This approach allows BEAR Scotland to effectively manage the potential cumulative effects as a result of TM, resulting in minimal disruption to users of the Scottish trunk road network.

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

Assessments of the environmental effects

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

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

This is a relevant project in terms of 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 over 1ha in area, and are situated in part within the Loch Lomond and Trossachs National Park and the River Earn National Scenic Area, which are both sensitive areas 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 (EIA) 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 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:

- The total working area is restricted to the 1.1ha of existing carriageway boundary.

- The works include signage works across six separate localised areas of the A85 with all works restricted to the carriageway verges and existing surfacing.
- The works will be temporary, transient, highly localised, and completed during day-time hours on a rolling programme.
- Works are not expected to result in significant disturbance to protected species that may be present in the wider area.
- The risk of major accidents or disasters is considered to be low.
- No impacts on the environment are expected during the operational phase as a result of works. The works are expected to result in positive impacts on road users during the operational phase.
- Measures will be in place to ensure appropriate removal and disposal of waste.
- Works are programmed to only take 10 days to complete on a rolling programme.

Location of the works:

- The Ben Lui SAC, River Tay SAC, and Upper Strathearn Oakwoods SAC lie within 2km of the scheme. An assessment under the Habitats Regulations concluded that the scheme does not have the potential to result in Likely Significant Effects on either of these sites.
- The scheme extent is located within the Loch Lomond and Trossachs National Park and the River Earn National Scenic Area.
- The scheme will be confined within the existing carriageway boundary and as a result will not require any land take or alter any local land uses or habitats.

Characteristics of potential impacts of the works:

- Any residual impacts to the local landscape during the construction phase will be minor and will not result in significant visual changes to the A85 road corridor.
- Any impacts during the construction period are expected to be temporary, short-term, and non-significant.
- Measures will be in place to ensure appropriate removal and disposal of waste.
- Residual impacts are considered to be beneficial for the travelling public which may use this stretch of carriageway.
- The SEMP will include plans to address environmental incidents.
- Mitigation measures detailed above and in the SEMP are 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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