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# Environmental Impact Assessment Record of Determination

## A84 30 Bridge of Teith – Damage to Crown Property (DCP)

# Contents

# Project Details

## Description

BEAR Scotland, on behalf of Transport Scotland, has been commissioned to undertake reinstatement of the damaged retaining wall and parapet on the A84 30 Bridge of Teith, south of Doune (Figure 1; National Grid Reference: NN 72169 01267).

A car strike on 28/09/2023 caused damage to the retaining wall and parapet on the northwest corner of the A84 30 Bridge of Teith. The damage has exposed the backfill of the retaining wall, which over time, will be eroded by surface water and could start to undermine the road construction. As such, BEAR Scotland are progressing these works on an emergency basis, with a view to protecting the structure from further failure / collapse.

The works will reuse existing stone where possible. Where required, supplemental like-for-like stone will be imported.

Most of the works will be undertaken from the A84 carriageway; however, scaffolding adjacent to the northwest corner of the bridge will also be necessary to complete the works. Any required scaffolding will not be placed within the River Teith and will be located outside the boundary of the River Teith Special Area of Conservation (SAC), which is adjacent to the working area.

In summer 2022, BEAR Scotland completed re-construction works on the retaining wall adjacent to this area of damage. As the bridge is a Listed Building, Listed Building Consent (LBC) was granted by Stirling Council to permit these works (21/00326/LBC).

To repair the new damage caused in September 2023, BEAR Scotland are proposing to use the same sub-contractor, materials, and techniques as for the previous repair works, which were done under the LBC. The materials used during previous works were sourced following lime mortar analysis and petrographic stone analysis to ensure that new stone and mortar used would match the existing stone of the bridge.

BEAR Scotland are progressing these works on an emergency basis, with a view to protecting the structure from further failure / collapse with a start date expected to commence on 23rd October 2023. Works are expected to be completed over up to 5 weeks, operating between the hours of 09:00 and 17:00. Changes in the programme may result in alteration to the proposed start date.

The missing section of the parapet is currently protected with a temporary safety barrier and three-way temporary traffic signals have also been installed to manage traffic flows. It is expected that traffic management (TM) will remain the same during the construction works. The site compound and mobile welfare unit will be located within the lane closure/traffic management. Where required, alternative pedestrian routes will be included in the TM setup.

# Location

The scheme is located on the A84 30 Bridge of Teith, south of Doune within the Stirling Council area (Figure 1; National Grid Reference: NN 72169 01267).

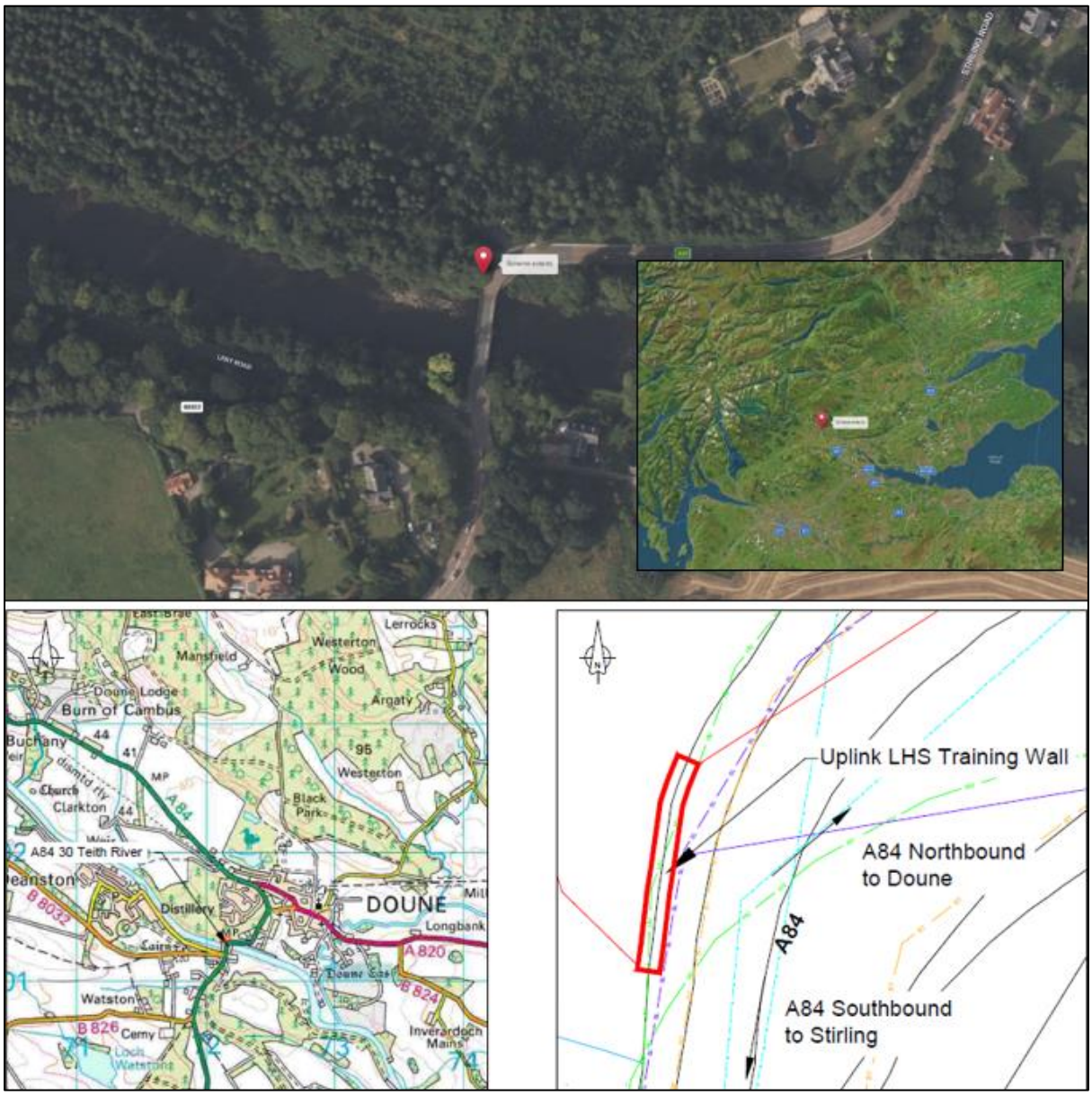


Figure 1. Location and scheme extent of the proposed DCP works at the A84 30 Bridge of Teith. Source: BEAR Scotland. F108 - Environmental Assessment Request (Scheme ref: DCP-23-NW-199).

# Description of local environment

## Air quality

The scheme does not fall within any Air Quality Management Areas (AQMA) (Air Quality Scotland), the nearest AQMA 'Falkirk Town Centre' lies 26km southeast and is declared to monitor levels of Nitrogen dioxide ($NO_2$) and (Particulate Matter $PM_{10}$). The nearest air quality monitoring site to the scheme is in Stirling, approximately 5km southeast of the scheme, which records local concentrations of Nitric oxide (NO), and Particulate Matter ($PM_1$, $PM_{2.5}$ and $PM_{10}$). The levels at the time of the search were recorded as low (Air Quality Scotland). Pollution levels in the general vicinity of works are anticipated to be lower than levels at Stirling due to the less dense urbanisation of the surrounding area.

One facility has been registered within the Scottish Pollutant Release Inventory (SPRI) within 10km of the scheme (Scotland's Environment):

- Scotbeef Ltd, Longleys Farm, Bridge of Allan - animal and vegetable products from the food and beverage sector (lies 9.8km from the scheme).

Average Annual Daily Flow (AADF) for the A84 carriageway 0.2km south of the scheme accounted for 8,024 vehicles in 2022, of which 7.2% were heavy goods vehicles (HGV) (Road Traffic Statistics).

Baseline air quality is likely to be primarily influenced by traffic along the A84 trunk road, with secondary sources likely to arise from urban activities within Doune and vehicles travelling along the local road network.

## Cultural heritage

According to Pastmap (PastMap) the A84 30 Bridge of Teith is a category A Listed Building 'Bridge of Teith' (LB24668). The A84 30 Bridge of Teith is a two semi-circular-arched bridge of 1535 construction, founded by Robert Spittal. The bridge underwent widening and repairs in 1866. The bridge features a coat of arms panel and large inscribed panel (1866 replica opposite) on the eastern parapet. The bridge is also noted as a Historic Environment Record and a Canmore feature.

The scheme extent lies within the 'Doune' Conservation Area.

The following cultural heritage features are located within 300m of the scheme extents:

- Category B Listed Buildings: ‘Bridgend of Teith’ (LB13676), which lies 120m south of the scheme; ‘Auchendoun’ (LB24654), which lies 230m northeast; and ‘Blair Drummond North Lodge ("Chain Lodge")’ (LB8249), which lies 180m south.
- ‘Deanston’ Conservation Area, which lies 5m southwest of the scheme.
- ‘Blair Drummond’ Garden and Designed Landscape (GDL00060), which lies 45m southeast of the scheme.
- Of lesser cultural heritage value, numerous Historic Environment Records and Canmore features also lie within and within 300m of the bridge. The nearest of these is a HER record of a well and a chapel, which lies 45m south of the scheme.

There are no World Heritage Sites, Scheduled Monuments or Inventory Battlefields identified within 300m of the scheme extents.

## Landscape and visual effects

The scheme is not located within an area designated as a National Park or National Scenic Area (Sitelink).

The Landscape Character Type (LCT) within the scheme extents is categorized as ‘Lowland River Valleys – Central’ (no. 152) (Scottish Landscape Character Types), which is characterised by:

- The narrow valley of the River Teith, which winds its way eastwards from its origin just outside Callander along the base of the broad expanse of the Braes of Doune.
- The valley of the Allan Water, including the uppermost stretch of its valley to the north-east of the Forth valley, bordered to the west by the Braes of Doune, and to the east by the hill fringes of the Ochils.
- The middle Devon Water valley on the south-easternmost edge of the Ochils, which includes the strongly undulating low hills, bluffs and spurs which enclose and conceal the middle stretches of the River Devon and adjoin the steep, rounded southeasternmost edge of the Ochils.
- The valleys of Strath Blane, Endrick Water, Blane Water, and Middle Endrick Water which surround the north and eastern flank Campsie Fells. From its origin in the Strath Blane Hills, the Blane Water cuts a course north-westwards between the commanding presence of the Campsie Fells and the rugged rock outcrops and steep slopes edging the moorland fringes of the Kilpatrick Hills, while to the north Endrick Water/Blane Water consists of a strongly rolling terrain landscape that encloses the lower Endrick Water at its

confluence with the Blane Water to the north-west of the Campsie Fells. Middle Endrick Water comprises the landscape towards the head of the middle Endrick valley, west of its hill-top origin, where the river is pinched between and dominated by the volcanic masses of the Fintry Hills to the north and the Campsie Fells to the south, before flowing westwards towards Drymen.

- The valley containing the Upper Carron and Middle Carron lying to the south of the Gargunnock, Fintry and Kilsyth Hills and the urban fringe of Falkirk/Denny to the west, and the flat floodplain of the Forth. The Carron Valley sits astride the southern boundary of the area, nestling within and enclosed by the volcanic masses of the Campsie Fells and Gargunnock, Fintry and Kilsyth Hills, running eastwards leaving the Touch and Kilsyth Hills, and descending to the urban fringe of Falkirk/Denny where it meets its major tributary, the Bonny Water.

- The northern side of the Avon Valley, south of Grangemouth (the southern side is in West Lothian and has a separate Lowland River Corridor Landscape Character Type description).

Historic Environment Scotland's HLAMap (HLAMap) has highlighted that the surrounding landscape is a mixture between urban land, designed landscapes, woodland and rectilinear fields and farms.

## Biodiversity

The works are located adjacent to the River Teith SAC (SiteLink). A Habitats Regulations Assessment (HRA) has been undertaken to establish the potential for the works to result in Likely Significant Effects (LSE) on the designated features of the SAC.

The NBN Atlas holds records of numerous bird species within 2km over a 10-year period. Under the Wildlife and Countryside Act 1981, all wild birds and their active nests are protected.

The NBN Atlas does not hold records of invasive non-native species (INNS) of plants, as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA), and injurious weeds, as listed under the Weeds Act 1959, or invasive native perennials, as listed in the Trunk Road Inventory Manual under the same criteria. Similarly, Transport Scotland's Asset Management Performance System (AMPS) also does not hold any records of INNS, injurious weeds or native invasive perennials along the A84 in proximity to the A84 30 Bridge of Teith.

Woodland listed on the Ancient Woodland Inventory (AWI) (Scotland's Environment) as long-established (of plantation origin) lies directly north of the scheme.

Habitats surrounding the scheme comprise a mixture of woodland and freshwater habitat.

**Field surveys**

Jacobs UK previously carried out a suite of ecology surveys between 2018 and 2022 to inform previous works on the bridge. The most recent surveys were carried out in May 2022.

As per the standards of NatureScot, all the results of the surveys are valid for 18 - 24 months (based on professional judgement). No in-stream works will be carried out and the relevant surveys for terrestrial protected species are valid until May 2024; however, a pre-construction ecological survey will be carried out to identify any protected species in the vicinity of works.

# Geology and soils

The scheme does not lie within a Geological Conservation Review Site (GCRS) or geological Site of Special Scientific Interest (SSSI) (SiteLink).

The Generalised Soil Type at the scheme location is identified as brown soils (Scotland's Soils).

A desktop study using the British Geological Survey Map (BGS GeoIndex) identifies the local geology type as a combination of the following:

Bedrock Geology:

- Teith Sandstone Formation (sandstone), which is a sedimentary bedrock.

Superficial Deposits:

- River Terrace Deposits (gravel, sand, silt and clay), which is a sedimentary superficial deposit.

# Material assets and waste

The proposed works will include reinstatement of the damaged section of the bridge retaining wall and parapet. The works will reuse existing stone where possible. Where required, supplemental like-for-like stone will be imported. Materials used will consist of:

- Lime mortar
- Stone

The waste will include unusable stone and lime mortar.

As the value of the scheme does not exceed £350,000, a Site Waste Management Plan (SWMP) is not required for this scheme.

## Noise and vibration

Numerous residential and commercial properties are located within 300m of the scheme. These are suitably screened from the scheme extents by woodland with only glimpses being observed in a distance.

The works do not fall within a Candidate Noise Management Area (CNMA) as defined by the Transportation Noise Action Plan (TNAP).

Scotland's strategic noise maps show no data regarding the noise at the scheme extents (Scotland's Noise Scotland's Environment).

Baseline noise levels at the scheme location are likely to be primarily influenced by traffic along the A84 trunk road, with secondary sources likely to arise from urban activities within Doune and vehicles travelling along the local road network.

## Population and human health

The scheme lies on the outskirts of Doune with numerous residential and commercial properties located within 300m of the scheme. The nearest of these is a residential property 'The Old Manse', which lies 90m southeast of the scheme and is screened by riparian tree belts flanking the River Teith. These are screened from the scheme extents by woodland.

An access point to a track road, which is noted as a Core Path (ID: 25250) (Scotland's Environment) is located 5m north of the scheme.

The A84 30 Bridge of Teith has very narrow pedestrian pavements either side of the carriageway.

There are no National Cycle Network (NCN) routes (OS Maps) or walking routes as listed on WalkHighlands (WalkHighland) within the scheme extents.

The A84 Trunk Road connects Stirling with Doune, Calendar and Lochearnhead. It commences from its junction with the M9 at and including the eastern most roundabout at Craigforth Stirling (M9 Junction 10) leading generally north-westwards

for a distance of 44.7 kilometres to its junction with the A85 in Lochearnhead. The A84 is a single carriageway along its length.

## Road drainage and the water environment

A84 30 Bridge of Teith spans the River Teith (ID: 6834), which is a classified waterbody by the Scottish Environment Protection Agency (SEPA) under the Water Framework Directive 2000/60/EC (WFD). The River Teith is a river in the River Forth catchment of the Scotland river basin district. The main stem is approximately 22.6 kilometres in length. The River Teith was classified by SEPA in 2020 as being of 'moderate' overall status (Water Classification Hub).

Ashmill Burn (unclassified) and numerous minor unclassified waterbodies lie within 300m of the scheme. There may also be roadside drains in the vicinity of the A84 30 Bridge of Teith within the scheme extent.

The scheme falls within the 'Callander' and 'Teith and Forth Valleys' groundwater bodies which are classified by SEPA in 2020 as having an overall status of 'Good' (Water Classification Hub) and are also Drinking Water Protected Areas (Ground) (DWPA).

There are no surface water flooding risks recorded on the A84 carriageway at the scheme extents, however the banks of the River Teith are recorded as having a high level of fluvial flooding risk (SEPA Flood Map), which means that each year these areas have 10% chance of flooding.

## Climate

The Climate Change (Scotland) Act 2009 sets out the target and vision set by the Scottish Government for tackling and responding to climate change (The Climate Change (Scotland) Act 2009). The Act includes a target of reducing $CO_2$ 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.

- All plant, machinery and vehicles associated with the scheme will be maintained in order to minimise emissions, as per manufacturing and legal requirements. No significant dust, particulate matter, and exhaust emissions (DPMEE) sources will be introduced by the works.
- Works will be undertaken by hand as far as reasonably practicable.
- Green driving techniques will be adopted, and effective route preparation and planning will 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.
- 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

The A84 30 Bridge of Teith is a category A listed structure (LB24668); however, consultation with Stirling Council undertaken on 04/10/2023 confirmed that LBC is not required due to the proposal to undertake like-for-like repairs using suitable stone and lime mortar (as per lime mortar and petrographic stone analysis results for

previous works) and due to the emergency nature of the works. In addition, the works do not require significant earthworks (minor excavation may be required for installation of scaffolding) or vegetation clearance, and construction of the A84 30 Bridge of Teith, the A84 road corridor and previous work packages to the bridge are likely to have removed any archaeological remains that may have been present. Therefore, the potential for the presence of unknown archaeological remains in the study area has been assessed to be low. The works do not include any alterations that would affect the historic and architectural character of the noted cultural heritage records or features or would have the potential to expose any undiscovered features of cultural heritage.

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

- The works will include like-for-like reinstatement of the bridge retaining wall and parapet. Any alteration to original materials and design (if required) will be approved by the Stirling Council.
- There will be no storage of vehicles, plant, or materials against any buildings, walls or fences.
- Original stones from the wall will be salvaged and reused wherever possible. The rebuilt section of wall will be integrated into the original masonry.
- Any required replacement stone used in the reconstruction of the wall (i.e. where original stones cannot be salvaged) will be sourced to match the original stones (as informed by petrographic analysis carried out for previous works).
- Mortar used in the wall reconstruction will match the original.
- 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 will, as much as is reasonably practicable, only be present on areas of made / engineered ground. Where access outwith 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, temporary visual impacts to the local landscape during the construction phase as a result of installed scaffolding and obstructed views due to vehicles and machinery. Proposed works will be restricted to like-for-like reinstatement of the A84 30 Bridge of Teith retaining wall and parapet and will be carried out over up to 5 weeks. Minor visual changes will occur due to the freshly repaired bridge wall and parapet; however, these will remain within the existing bridge design and will be in keeping with surrounding character. Over time, repaired section of the wall will weather and blend with the rest of the bridge.

Land use will not change as a result of the works, and the works will not result in any residual change to the visual amenity of the local landscape. 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 temporary adverse 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 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

### Designated Sites

The A84 30 Bridge of Teith spans the River Teith SAC which is directly adjacent to the works. Therefore, an HRA Proforma has been undertaken to assess the impact of works on the SAC. The HRA Proforma concluded that the work activities would not result in Likely Significant Effects (LSE) on the qualifying features of the River Teith SAC due to the nature of the works and limited pathway to effect. All standard good practice measures will be adhered to. These measures will be detailed in the Site Environmental Management Plan (SEMP) and adhered to during works. As such, the works are not expected to result in LSE on the qualifying features of the SAC by virtue of the following factors:

- All works are restricted to the A84 30 Bridge of Teith damaged section, with only ‘like-for-like’ reinstatement of the wall and parapet being undertaken. There will be no in-stream works; therefore, no direct impacts to the site are anticipated.
- There is no requirement for land take (or resources) or site clearance from within the site and no works are required within any part of the site boundaries.
- The works will not involve any in-stream works or any discharges to the natural water environment, and therefore there will be no change to water quality or impact on qualifying features.
- Good practice measures to prevent pollution will be in place to comply with The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended). Therefore, the risk of indirect effects on the SAC as a result of pollution incidents is limited.
- Hand tools will be used during works; therefore, the potential for works to result in noise or vibration disturbance to aquatic species is limited.
- Works will be undertaken during daylight hours, which will reduce the need for any artificial lighting on site.
- Works will not promote the known negative pressure on the various designated species.
- No significant dust, particulate matter, and exhaust emissions (DPMEE) sources will be introduced by the works, and standard pollution prevention measures will be in place during works.
- Good practice measures will be adhered to as standard to protect the water environment. Therefore, the risk to fish species, their food sources, and supporting habitat within the working areas is considered to be low, and it is expected that the conservation objectives will be met. The water environment and associated habitat for qualifying species will remain unchanged as a result of the works.

**Ecology**

The most recent ecology surveys undertaken in May 2022 did not record any protected species resting places within relevant disturbance buffers of the working area. These surveys are still within the 18-month validity period; however, an updated pre-construction survey will be carried out prior to works to identify any newly active resting places within the vicinity of works.

It is not anticipated that any works or access routes will be required within areas of identified INNS to the northeast and south of the bridge. If works or access are

required within these areas, or if INNS are noted within 7m of the works area, than relevant biosecurity measures will be implemented.

As noted above, the potential for works to result in disturbance to aquatic species is limited due to the use of hand tools and programming of works during daylight hours.

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

- Works will be strictly limited to areas required for access and bridge wall and parapet reinstatement works. Unnecessary encroachment onto terrestrial or aquatic areas will not be tolerated.
- No tree felling or in-stream works will be permitted.
- If works are delayed until a bird breeding season (March to August inclusive), then nesting bird checks will be undertaken prior to works commencing.
- All construction operatives will be briefed through toolbox talks prior to works commencing. The toolbox talks will provide information on the legislation, general ecology, and best practice measures for relevant protected species and INNS.
- Site personnel will remain vigilant for the presence of any protected species throughout the works period. Should a protected species be noted during construction, works will temporarily halt until the species has sufficiently moved on. Any sightings of protected species will be reported to the BEAR Scotland Environmental Team.
- Artificial lighting used during periods of low light levels (if required) will be directed away from road verges, woodland, and waterbodies as far as is safe and 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

Although installation of the scaffolding may include minor excavation of embankment material, construction activities are restricted to localised areas and all excavated material will be reused within the working areas. Therefore, the works are not anticipated to have an adverse impact on geology and soils. With the following mitigation measures in place, the likelihood of significant impacts on the geology and soils is low.

- Excavated material will be kept to a minimum and spread evenly within the scheme extents.
- The parking of machinery/vehicles and storage of equipment on road verges will be minimised as far as is reasonably practicable.
- Upon completion of the works, any damage to the local landscape (i.e., damage to the River Teith embankment) will be reinstated as much as is practicable.
- Mitigation measures to prevent contamination of soils through loss of containment will be strictly adhered to
- All relevant soil management toolbox talks will be included in the SEMP and sediment control measures will be in place to prevent soil eroding into the River Teith.
- Additional pollution prevention measures as outlined in Road drainage and the water environment will be adhered to during construction.

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:

- All imported materials used for rebuilding of the damaged bridge section will be like-for-like with the original material.
- 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, unless otherwise stated. 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. Works will be undertaken over up to 5 weeks by utilising a daytime working programme. The proposed scheme is anticipated to result

in temporary minor adverse noise impacts. The following mitigation measures will be put in place:

- The Best Practice 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.
- The works will be undertaken by hand were reasonably practicable.
- 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.
- Local residents will be notified of works via letter drop (if deemed necessary) and road users will be informed of works through a media release, which will provide details of construction dates and times.
- All plant will be operated in such a way that minimises noise emissions and will have been maintained regularly to the appropriate standards.
- Where fitted, and where permitted under Health and Safety requirements, white noise reversing alarms will be utilised during construction.
- Where ancillary plant such as generators are required, they will be positioned so as to cause minimum noise disturbance. Where deemed necessary, acoustic screens will be utilised.

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

## Population and human health

During construction, activities undertaken on site may have temporary adverse impacts on vehicle travellers and non-motorised road users (NMUs) as a result of vehicle noise and delays due to traffic management measures. Road users will be informed of works through a media release, which will provide details of construction dates and times and the diversion route. The works will be of a relatively short duration (up to 5 weeks). With the following mitigation measures in place, the risk of significant impacts on population and human health is considered to be low:

- The damage to the bridge retaining wall and parapet has caused significant structural concerns regarding the stability of the road and the bridge, therefore the works will ensure the A84 remains in safe condition for public use.
- Reinstatement of the damaged section of the bridge will allow to open both traffic lanes to the public, eliminating temporary traffic lights.

- Construction lighting during periods of low light levels will take into account the need to avoid illuminating surrounding properties to avoid creating a nuisance, and non-essential lighting will be switched off.
- Where appropriate, a communication strategy (e.g., social media, consultation with local authority and other stakeholders, letter drop, etc.) will be initiated to keep local residents and/or businesses informed of the proposed working schedule, particularly the times and durations of noisy construction activities. The communication strategy will also provide a 24-hour contact number for the BEAR Scotland Control Room.
- Journey planning information will be available for drivers online at the trafficscotland.org website. Journey planning information will also be available for drivers online through BEAR's social media platforms.

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

## Road drainage and the water environment

During these 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 or tidal movements) 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:

- Standard working practices to comply with The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) for works near water are detailed in the SEMP and will be adhered to on site.
- The scheme will not entail any in-stream works.
- 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 or sediment 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 be fully bunded. This shall be distanced more than 10m from any watercourses.
- During refuelling of smaller mobile plant, a funnel will be used, and drip trays will be in place. Care will be taken to reduce the chance of spillages. 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 shall also be supplied beneath the equipment with a capacity of 110%.

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

## Climate

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.
- The requirement for additional lighting will be reduced as far as reasonably practicable.
- 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 material 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.

## Major Accidents and Disasters

The banks of the River Teith have been noted to have a high level of fluvial flooding risk, which indicates that each year these sections have a 10% chance of flooding per year.

BEAR Scotland are progressing these works on an emergency basis, with a view to protecting the structure from further failure / collapse. The missing section of the parapet is currently protected with a temporary safety barrier and 24-hour TM to manage traffic flows. The TM is designed in line with existing guidance and will remain until the bridge wall and parapet is repaired. Pedestrians are accommodated within the TM. The proposed works are anticipated to last up to 5 weeks.

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

The proposed works are not anticipated to result in significant environmental effects. A search of the Stirling Council Planning (Map Search) did not identify planning applications within 300m of the scheme location.

A search of the Scottish Roads Works Commissioner's website (Map Search) has identified that no other roadworks are currently ongoing or noted as being planned on the trunk road in the near future. Furthermore, the works will enable removal of the temporary traffic lights installed due to the damaged bridge, therefore allowing other roadworks to take place within the proximity of the bridge. No cumulative effects are anticipated with any other developments in the vicinity.

BEAR Scotland programmes all of their proposed works in line with appropriate guidance and contractual requirements. However, the damaged section of the bridge is considered as 'emergency works', which requires 24-hour TM in operation to ensure public safety along the section of the A84. Due to the nature of the TM, BEAR will reprogramme other 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, the proposed works will not 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) which is located adjacent to the River Teith SAC 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 (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 less than 1 ha.

- No impacts on the environment are expected during the operational phase as a result of works. The works are expected to result in positive impacts on road users during the operational phase.
- As the works are emergency like-for-like reinstatement of the damaged section of the bridge, there is no change to the vulnerability of the road to the risk or severity of major accidents/disasters that would impact on the environment.
- Any potential impacts of the works are expected to be temporary, transient, short-term, non-significant, and limited to the construction phase.
- Works are not expected to result in significant disturbance to protected species that may be present in the wider area.
- No in-combination effects have been identified.
- The risk of major accidents or disasters is considered to be low.

**Location of the scheme:**

- Works will not result in any alteration to the original bridge design and character, and as such will not result in a change to the local landscape or the Listed Building and 'Doune' Conservation Area.
- Consultation with the Local Authority confirmed that the works do not require LBC.
- Although the works lie adjacent to the River Teith SAC, the HRA Proforma concluded that the works will not result in LSE on the qualifying features of the SAC.
- The works are not expected to result in any alteration to existing features or exposure of potentially undiscovered features of cultural heritage.
- 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.

**Characteristics of potential impacts of the scheme:**

- Measures will be in place to ensure appropriate removal and disposal of waste.
- The SEMP will include plans to address environmental incidents.
- Containment measures of the working area will be in place to prevent debris or pollutants from entering the surrounding environment.
- In the event that INNS are found on site, measures to prevent potential INNS spread will be implemented.

- 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.

# References of supporting documentation

A84 30 Bridge of Teith DCP – HRA Proforma

# Annex A

"sensitive area" means any of the following:

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

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Published by Transport Scotland, October 2023

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