EC DIRECTIVE 97/11 (as amended)

ROADS (SCOTLAND) ACT 1984 (as amended)

RECORD OF DETERMINATION

Name of Project:	**Location:**
A68 220 Earlston Bridge Expansion Joint Replacement	A68 220 Earlston Bridge: NGR 357217, 638140 (centre point)

DESCRIPTION OF PROJECT

BEAR Scotland (BEAR) has been commissioned by Transport Scotland to undertake carriageway resurfacing and expansion joint replacement on the A68 220 Earlston Bridge. The bridge spans Leader Water / Kelphope Burn (Cleekhimin Burn confluence to River Tweed), on the periphery of Earlston (Appendix A, Figure 1 and Figure 2).

The bridge deck and expansion joints require maintenance and upkeep to ensure operational and safety standards are maintained across the bridge. The work is split into Phase 1 and Phase 2 as follows:

Phase 1 Pavement (night shift):

- Approximately 350sq.m of bridge deck will be milled to depth of 40mm and resurfaced and road markings reinstated.

Phase 2 Structure (dayshift):

- Two asphaltic plug joints will be replaced. The northern joint will be replaced like-for-like and the southern joint will be replaced with a BEJ8 mechanical joint.

The works are programmed to begin in late March 2021 (date TBC) and will take 5 days (1 night + 4 days) to complete. Phase 1 will take 1 night to complete (20:00 - 06:00) and Phase 2 will take 4 days (08:00 - 17:00). Weekend working may be programmed to optimise weather and operational activities. Traffic Management (TM) will employ full closure of the A68 220 Earlston Bridge for Phase 1 works, with traffic diverted via the A699, A698, A6089 and A6105. The diversion will add 32 km onto existing journeys. Phase 2 TM will involve lane closure.

PROJECT PROCUREMENT

The scheme is executed by the operating company as site operations – 'As of Right' scheme.

DESCRIPTION OF LOCAL ENVIRONMENT

The sections below provide a brief description of the local environment in vicinity of the A68 220 Earlston Bridge. The baseline information is based on a review of currently available information obtained from a desk-based study and historical information provided by the previous Operating Company (Amey).

The headings have been set out to follow the recently updated Design Manual for Roads and Bridges (DMRB) chapters for environmental assessment and do not reflect a ranking of impact severity. Based on the nature of the

works, unless otherwise stated, the demarcation of the study area for the assessment of potential impacts is limited to all land within 300 m of the A68 220 Earlston Bridge.

1.0 Population and human health

Baseline information was collected through a desktop assessment containing data obtained from online web-based mapping tools including; Google Maps and Google Street View, Envirocheck, Ordnance Survey (OS), NatureScot, Scotland's Environment (SE), Scotland's Environment Scotland's Soils (SESS), SUSTRANS and the Road Traffic Statistic.

1.1 Properties (within distance bands)

Numerous residential properties, Earlston Medical Practice, five business premises, three greenspaces (playing fields and sports facility), one farmstead and a water treatment works lie within 300 m of the A68 220 Earlston Bridge. Properties closest to the bridge (within 50 m) are partially screened from the bridge by riparian woodland and shrub habitat (approx. 10 m wide) on the banks of the River Tweed. Properties and business premises further afield are screened from the bridge by a combination of intervening properties and/or woodland (approx. 40 m wide). The water treatment works lies 70 m east of the bridge and is screened by riparian woodland and shrub habitat (approx. 50 m wide) on the banks of the River Tweed. One playing field lies 110 m northeast of the bridge and the sports facility lies 240 m northeast of the bridge, and both are screened by intervening properties. A second playing field lies 175 m east of the scheme and is screened by riparian woodland and shrub habitat (approx. 20 m wide) on the banks of the River Tweed. The farmstead lies 180 m southwest of the bridge and is screened by woodland (approx. 80 m wide). Earlston Medical Practice lies 265 m north of the bridge and is screened by intervening properties.

1.2 Land use

The A68 220 Earlston Bridge spans Leader Water on the periphery of Earlston, within the Scottish Borders Council local authority. At the time of writing, there is one planning application within 300 m of the bridge[1]. Details of the planning application is outlined in Table 1.1.

Table 1.1. Planning applications within 300 m of A68 220 Earlston Bridge

Local Authority	Application Details	Decision Status
Scottish Borders	Part change of use and alterations to form residential apartment.	Awaiting decision

BEAR do not currently have any major projects programmed in vicinity of the bridge.

Land use within 2 km of the A68 220 Earlston bridge is categorised into the following[2]; (i) urban area, (ii) medieval town, (iii) industrial / commercial area, (iv) plantation, (v) designed landscape, (vi) managed woodland, (vii) recreation area, (viii) rectilinear fields & farms, and (ix) rough grazing. The national scale land capability for

[1] https://eplanning.scotborders.gov.uk/online-applications/spatialDisplay.do?action=display&searchType=Application (Scottish Borders Council) [Accessed 02/02/21]
[2] https://map.hlamap.org.uk (HLAmap) [Accessed 02/02/21]

agriculture[3] classifies land surrounding the bridge as being 'Class 3.1' – land capable of producing consistently high yields of a narrow range of crops and / or moderate yields of a wider range (short grass leys are common).

1.3 Non-motorised user & community facilities

There are no National Cycle Network[4] routes within 300 m of the A68 220 Earlston bridge. Core Path[5] (139) lies 120 m south of the bridge and pedestrian footpaths[6] run parallel and adjacent to the northbound and southbound carriageways at the bridge. There are no Public Rights of Way[7] (PRoW), bus stops, pedestrian crossing points (controlled or uncontrolled), bridle paths or other community assets within the study area. Street lighting is present directly north and south of the bridge.

1.4 Vehicle travellers

The A68 220 Earlston bridge is a single carriageway with an Annual Average Daily Traffic (AADT) flow (2019 data) of 9,954 (ID: 20745) comprised of:

- 93 two wheeled motor vehicles,
- 8,117 cars and taxis,
- 4 pedal cycles,
- 94 bus and coaches,
- 1,262 Light Goods Vehicles (LGVs), and
- 388 Heavy Goods Vehicles (HGVs).

2.0 Air quality

Baseline information was collected through a desktop assessment including data obtained from online web-based mapping tools including; Scotland's Environment (SE), Air Quality in Scotland (SEAQS), Google Maps and Google Street View, Envirocheck, EU Pollutant Release and Transfer Register (PRTR), and Ordnance Survey (OS).

There are no Air Quality Management Areas[8] (AQMAs) within 300 m of the scheme. Whilst no monitoring of air quality levels has been undertaken as part of this assessment, at the time of writing, automatic monitoring stations within the wider area record bandings in the 'green zone' (Low Index 1 - 2), and it is considered that these readings are representative of air quality within the scheme extents[9]. Readings in the 'green zone' suggest that National Air Quality Strategy (NAQS) objectives are likely to be met and that air quality in the area is relatively good. The European PRTR[10] online mapping tool did not identify any industrial or waste management sources within 1 km of the A68 220 Earlston bridge.

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[3] http://map.environment.gov.scot/Soil_maps/?layer=1# (Scotland's Environment Scotland's Soils) [accessed 02/02/21]
[4] The National Cycle Network (NCN) is a network of cycle routes comprising minor routes, disused railways, pedestrian routes, canal towpaths and traffic calmed routes, created by the charity Sustrans. Given the mixed nature of routes that make up the NCN, sections of the network are also designated as Core Paths or Public Rights of Way.
[5] Core Paths can include; Public Right of Ways, footpaths, cycle tracks, paths covered by path agreements / orders, waterways, or crossing land to facilitate, promote and manage the exercise of access rights under the Land Reform (Scotland) Act 2003 (Sections 20 and 21), and are identified as such in Local Authority Core Paths plans.
[6] Local paths hold no statutory designation and can be pavements adjacent to roads or off-road paths.
[7] The National Catalogue of Rights of Way is maintained by ScotWays in partnership with Scottish Natural Heritage and local authorities (who can also retain their own records). Access along Public Rights of Ways are protected by the Countryside (Scotland) Act 1967, Section 46.
[8] Under section 83(1) of the Environment Act 1995, Local Authorities have a duty to designate any relevant areas where air quality objectives are not (or are unlikely to be) being met as Air Quality Management Areas.
[9] http://www.scottishairquality.scot/latest/?la=falkirk (Air Quality in Scotland) [accessed 02/02/21]
[10] A pollutant release and transfer register (PRTR) is an inventory of pollution from industrial sites and other sources. A PRTR is a national or regional environmental database or inventory of potentially hazardous chemical substances and/or pollutants released to air, water and soil

Baseline air quality is mainly influenced by vehicles travelling along the trunk road. Secondary sources are derived from urban activities within Earlston, and day-to-day agricultural land management activities.

3.0 Cultural heritage assessment

Baseline information was collected through a desktop assessment including data obtained from online web-based mapping tools including; the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS), Ordnance Survey (OS), Google Maps and Google Street View.

Two listed buildings (Category B) and eighteen Canmore National Records (CNRs) lie within 300 m of the A68 220 Earlston bridge. The nearest listed building is the Category B listed '*Rhymer's Tower'* (LB2118), which lies 80 m north of the bridge. Neither of the listed buildings share direct connectivity with the bridge. Of lesser cultural heritage value, eighteen Canmore National Records (CNRs) lie within 300 m of the bridge. One of these, the *'Earlston, Melrose Road, New Bridge'*, pertains to the A68 220 Earlston bridge. There is no connectivity between the scheme and the remaining CNRs. Works are not located within 300 m of a World Heritage Site[11], Scheduled Monument, Conservation Area[12], Inventory Battlefield[13], Garden and Designed Landscape[14] or any other historically designated site.

4.0 Biodiversity

Baseline information was collected through a desktop assessment including data obtained from online web-based mapping tools including; Google Maps and Google Street View, Spatial Hub, Ordnance Survey (OS), NatureScot and Scotland's Environment (SE).

All environmental features have been assessed with reference to prior knowledge and experience of trunk road bridge refurbishment project construction methods, and the potential environmental impacts associated with these types of works in order to provide a robust impact assessment decision-making process. The assessment therefore aims to characterise environmental impacts rather than placing a reliance only on magnitude. The character of an impact is used to inform the determination of whether or not the impact on the feature in question is a significant one.

Invasive non-native flowering plant species (INNS) have been scoped out from ecological evaluation due to their lack of conservation status and so are not discussed further in that context. INNS are however discussed in the context of their potential as a risk to biodiversity and, under the Wildlife and Countryside Act 1981 (as amended) (WCA), regarding legal responsibilities to prevent their transfer.

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and transferred off-site for treatment or disposal. The industrial or business facility quantify and report the amounts of substances released to each environmental medium (air, water, soil) or transferred off-site for waste management or wastewater treatment. https://prtr.eea.europa.eu/#/home [accessed 02/02/21]

[11] World Heritage Sites are cultural and/or natural sites considered to be of 'Outstanding Universal Value', which are important across countries and generations and have been inscribed on the World Heritage List by the World Heritage Committee.

[12] Conservation areas "are areas of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance" (S.61 Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997).

[13] Scotland's Inventory of Historic Battlefields is a list of Scotland's most important historic battlefields. Battlefields are landscapes over which a battle was fought. When a battlefield is included on the inventory it becomes a material consideration in the planning process. This means that it has to be taken into account when deciding planning applications.

[14] Records of historic gardens and designed landscapes in Scotland are compiled and maintained by both Historic Scotland and NatureScot.

The study area for Natura 2000 (and other sensitive sites) was defined as an area extending to 2 km in all directions from the centre line of the A68 220 Earlston bridge.

The A68 220 Earlston bridge spans Leader Water / Kelphope Burn (Cleekhimin Burn confluence to River Tweed), which forms part of the River Tweed Special Area of Conservation (SAC) (EU Site Code: UK0012691[15]). The River Tweed is the principal river of the Scottish Borders and, at 155 km, is the fourth longest river in Scotland. At 4843 km^2, the River Tweed catchment (of the Solway Tweed river basin district) is the second largest in Scotland, with the main tributaries being the Lyne, Gala, Ettrick and Leader Waters, together with the River Teviot. The river rises at Tweed's Well, some 10 km north of Moffat, close to the boundary of the Scottish Borders with Dumfries and Galloway. The river flows north and then east, before draining into the North Sea at Berwick-upon-Tweed. The catchment contains one-hundred and thirty-five classified waterbodies, with 52% classified as 'Good or 'High', 38% classified as 'Moderate' and 10% classified as 'Poor'[16] (SEPA 2009). Current pressures on the catchment include agriculture, tourism, invasive species, recreation and development[17].

The SAC habitat conservation objectives are to avoid deterioration of the qualifying habitat[18] thus ensuring that the integrity of the site is maintained, and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features. The objective is also to ensure for the qualifying habitat that the following are maintained in the long-term: (i) extent of the habitat on site, (ii) distribution of the habitat within site, (iii) structure and function of the habitat, (iv) processes supporting the habitat, (v) distribution of typical species of the habitat, (vi) viability of typical species as components of the habitat, (vii) no significant disturbance of typical species of the habitat[19]. The SAC species conservation objectives are to avoid deterioration of the habitat of the qualifying species[20] or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and to ensure for the qualifying species that the following are maintained in the long-term: (i) population of the species, including range of genetic types for salmon, as a viable component of the site, (ii) distribution of the species within the site, (iii) distribution and extent of habitat supporting the species, (iv) structure, function and supporting processes of habitats supporting the species, and (v) no significant disturbance of the species[21].

The NBN online mapping tool records no mammal species of conservation importance within 300 m of the scheme (in the last 10 years) within 10 km grid square NT53. However, a Preliminary Roost Assessment (PRA) and Preliminary Ecological Appraisal (PEA), undertaken by RSK Biocensus Ltd on the 13th of July 2020 (on behalf of the previous Operating Company - Amey), recorded two potential bat roost features on the bridge, at each end of

[15] https://sitelink.nature.scot/map (NatureScot) [Accessed 02/02/21]
[16] https://www.sepa.org.uk/media/38116/tweed_area-management-plan.pdf (SEPA) [Accessed 02/02/21]
[17] https://tweedforum.org/wp-content/uploads/2018/09/Tweed_full_CMP_web.pdf (Tweed Forum) [Accessed 02/02/21]
[18] https://apps.snh.gov.uk/sitelink-api/v1/sites/8369/documents/22 (NatureScot) [Accessed 02/02/21]
[19] https://apps.snh.gov.uk/sitelink-api/v1/sites/8369/documents/29 (NatureScot) [Accessed 02/02/21]
[20] https://apps.snh.gov.uk/sitelink-api/v1/sites/8369/documents/22 (NatureScot) [Accessed 02/02/21]
[21] https://apps.snh.gov.uk/sitelink-api/v1/sites/8369/documents/29 (NatureScot) [Accessed 02/02/21]

the abutments. However, these features were very wet with pools of water visible, making them unsuitable for roosting bats. Four abandoned bird nests were also identified on the steel girders on the underside of the bridge.

The NBN online mapping tool records no invasive non-native species (INNS), as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA), within 300 m of the A68 220 Earlston Bridge (in the last 10 years) within 10 km grid square NT53. However, a PEA, undertaken by RSK Biocensus Ltd on the 13th of July 2020 (on behalf of the previous Operating Company - Amey), recorded a small area of Himalayan balsam and Japanese knotweed underneath the bridge. A PEA, undertaken by BEARs Environmental team on 8th and 19th February 2021, recorded no Himalayan balsam underneath the bridge, but did record a small area (< 10 m^2) of Himalayan balsam on the riverbank at the abutment adjacent to the bridge.

5.0 Landscape & visual effects

Baseline information was collected through a desktop assessment including data obtained from online web-based mapping tools including; Google Maps and Google Street View, Inventory of Gardens and Designed Landscapes, Ordnance Survey (OS), NatureScot and Scotland's Environment (SE).

The A68 220 Earlston bridge spans Leader Water / Kelphope Burn. Views north of the bridge are of urban development linked to Earlston. This aside, the main view from the bridge is of Leader Water / Kelphope Burn and riparian habitat associated with the river. 5.42 ha of broadleaved ancient woodland[22] is positioned on White Hill 300 m east of the bridge and 0.71 ha of broadleaved woodland lies 190 m west of the bridge. There are no trees covered by a Tree Preservation Order within 300 m of the scheme.

The A68 and A68 220 Earlston bridge are prominent landscape features, with both having a distinct character shaped by fast-flowing traffic, road markings, safety barriers (or parapets), and signage. The scale of these features detracts from the quality and character of the wider landscape.

6.0 Noise & vibration

Baseline information was collected through a desktop assessment including data obtained from online web-based mapping tools including; Scotland's Noise, Ordnance Survey (OS), Google Maps and Google Street View.

The A68 220 Earlston Bridge does not fall within a Candidate Noise Management Area (CNMA), as defined by the Transportation Noise Action Plan Road Maps[23]. Scotland's strategic noise maps show that there is no noise data pertaining to the trunk road at the A68 220 Earlston bridge. However, given the rural nature of the wider area and the low AADT flow, it is considered likely that noise levels will be low, with noise mainly influenced by vehicles travelling along the trunk road. Secondary sources are derived from urban activities within Earlston, and day-to-day agricultural land management activities.

[22] There are two types of ancient woodland: ancient semi-natural woodland and ancient replanted woodland. Ancient semi-natural woodland are sites that have retained the native tree and shrub cover and have not been planted (although it may have been managed by coppicing or felling and allowed to regenerate naturally). Ancient replanted woodland are sites where the original native tree cover has been felled and replaced by planting, usually with conifers and usually this century.

[23] https://noise.environment.gov.scot/action-planning-round-two.html (Scotland's Environment Scotland's Noise) [Accessed 02/02/21]

7.0 Road drainage & the water environment

Baseline information was collected through a desktop assessment including data obtained from online web-based mapping tools including; Drinking Water Quality Regulator for Scotland (DWQRS), Google Maps and Google Street View, Ordnance Survey (OS), SEPA Flood Maps, SEPA Water Environment Hub, UK Soil Observatory and Scotland's Environment (SE).

The A68 220 Earlston Bridge spans Leader Water / Kelphope Burn (Cleekhimin Burn confluence to River Tweed), which is a classified[24] waterbody (ID: 5266). The river is a waterbody in the River Tweed catchment of the Solway Tweed river basin district, and the main stem is approx. 23.2 km in length. The river possesses an overall and ecological classification of 'Moderate' and the waterbody has been assigned a Water Framework Directive 2000/60/EC (WFD) classification of 'High' for fish migration. The Scottish Environment Protection Agency (SEPA) records that Leader Water / Kelphope Burn, and the riparian habitat surrounding the waterbody, has a 'High' river flooding potential.

A PEA, undertaken by BEAR's Environmental team on 8th February 2021, determined that Leader Water / Kelphope Burn ranges between 10 and 20 m wide, with an average width of 15 m at the bridge. The watercourse depth could not be ascertained but is likely to be < 0.5 m, although several small pools could be up to 1.0 m deep. The channel bedform comprises a predominantly mobile boulder, cobble, pebble and gravel substrate, with boulders providing bed and bank controls and areas for steps and pools. Directly underneath the bridge depositional bars and sandbanks are prominent features. The burn flows through relatively flat pasture therefore its cobble, pebble and gravel substrate, and flat gradient, make it suitable for a variety of species. Leader Water / Kelphope Burn flows in a southernly direction for approx. 3.5 km, where it merges with the River Tweed (Ettrick Water to St Boswells Burn confluences) (ID: 5202).

Turfford Burn, a classified waterbody (ID: 5268) in the River Tweed catchment of the Solway Tweed river basin district, lies 280 m east of the bridge. The main stem is approx. 7.8 km in length and the river possesses an overall and ecological classification of 'Moderate'. The waterbody has been assigned a WFD classification of 'High' for fish migration. SEPA records that Turfford Burn, and the riparian habitat surrounding the burn, have a 'High' river flooding potential.

Two small minor unclassified surface waterbodies, considered to be minor tributaries or drainage channels, herein referred to as Drain1 and Clatteringford Dean, lie within 300 m of the A68 220 Earlston Bridge. Drain1 lies 65 m west of the bridge and Clatteringford Dean lies 190 m west of the bridge. There is no direct connectivity between the scheme and these minor surface waterbodies, and both are considered too small (in terms of catchment area) to be classified as main stem waterbodies by SEPA under the WFD.

[24] The Scottish Environment Protection Agency have developed a surface waterbody classification system in line with the requirements of the River Basin Management Plan in accordance with Annex V of the European Union Water Framework Directive 2000/60/EC, which is applied to all significant surface waterbodies in Scotland. This system is based on an assessment of key chemical and ecological indicators. The classification system categorizes waterbodies into the following bands; High, Good, Moderate, Poor, Bad.

The works lie on the 'Peebles, Galashiels and Hawick' groundwater, which has been classified 'Good'[25]. The bridge is also located within the 'Edinburgh, East Lothian and Borders' Nitrate Vulnerable Zone[26].

Communication with the Design Engineer confirmed that there is no road drainage system on the A68 220 Earlston Bridge. Road runoff on the bridge drains to roadside gullies positioned on the A68, either end of the bridge. The PEA, undertaken by BEAR's Environmental team on 8th February 2021, determined that there are piped outlets on both embankments of Leader Water / Kelphope Burn directly adjacent to the bridge. It is assumed that these outlets are associated with road the road drainage system.

8.0 Geology & soils

Baseline information was collected through a desktop assessment including data obtained from online web-based mapping tools including; Spatial Hub, British Geological Survey (BGS) Superficial and Bedrock Geological map viewer, BGS Geoviewer, BGS UK Hydrogeology viewer and UK Soil Observatory Soils map viewer.

The bedrock geology under the A68 220 Earlston Bridge is recorded as Hawick Group (Wacke) which has a lithological description of 'thin to medium-bedded greywacke and interbedded silty mudstone with thin red mudstone beds in Carghidown formation and laminated fossiliferous carbonaceous siltstone beds in Ross formation'[27]. The superficial geology under the bridge is recorded as Alluvium (silt, sand and gravel) which has a lithological description of 'unconsolidated detrital material deposited by a river, stream or other body of running water as a sorted or semi-sorted sediment in the bed of the stream or on its floodplain or delta, or as a cone or fan at the base of a mountain slope'[28]

9.0 Material assets & waste

Baseline data has been obtained from the Design Engineer.

The scheme is executed by the operating company as site operations e.g. 'As-of-Right' scheme of value less than £350,000 therefore a Site Waste Management Plan (SWMP) is not required.

The following materials will be used during construction:

- Expansion joints,
- Hot rolled asphalt,
- Tack/Bond coat, paving grade bitumen to seal vertical faces
- Eurolite thermoplastic road markings
- Bitumen emulsion
- Marker paint
- Cold bitumen sealant
- Bitumen bound road planings
- Concrete repair material

[25] https://map.environment.gov.scot/sewebmap/ (Scotland's Environment) [Accessed 01/02/21]
[26] A Nitrate Vulnerable Zone defines areas designated under the EU Nitrates Directive that are at risk of pollution from nitrates used in agricultural practice.
[27] https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=HWK (BGS) [Accessed 02/02/21]
[28] https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=ALV (BGS) [Accessed 02/02/21]

The following equipment/fleet will be used during the scheme construction:

- Planer
- Paver
- JCB 3CX
- Rollers
- Sweeper
- Bond coat tanker
- Pickup trucks
- Welfare van or portable chemical toilet
- 20 tonne tippers
- Lining machine
- Hand tools (including hot air lance and pneumatic breaker),
- Cars and Vans,

The following fuel and/or chemicals will be stored on site for the duration of the scheme:

- Diesel
- Petrol
- Gas
- Oil
- Tar Glue Remover.

The main waste produced during the construction phase will be 36 tonnes of bituminous material, European Waste Catalogue Code: 17 03 02.

10.0 Climate

Fuel will be required for transport to and from the scheme which will lead to greenhouse gas emissions. Any release of greenhouse gas emissions can contribute to climate change. The scheme is unlikely to be affected by the impacts of climate change, other than increasing likelihood of extreme weather events leading to issues with work taking place on site.

DESCRIPTION OF THE MAIN ENVIRONMENTAL IMPACTS OF THE PROJECT AND PROPOSED MITIGATION

As a result of a desktop study and site visit, issues requiring consideration have been identified and potential effects, their magnitude and overall significance (based on the sensitivity of receptor) have been considered in terms of both construction and operational effects. Residual effects are based on consideration of potential impacts (i.e. impacts in the absence of mitigation, and with mitigation implemented). Compliance with environmental mitigation measures detailed in the Site Environmental Management Plan (SEMP) will form part of the mitigation measures in place to minimise environmental impacts.

Headings have been set out to follow the recently updated DMRB chapters for environmental assessment and do not reflect a ranking of impact severity. Based on the nature of the works, unless otherwise stated, the demarcation of the study area for the assessment of potential impacts is limited to all land within 300 m of the A68 220 Earlston Bridge.

11.0 Population and human health (properties, land use, vehicle travellers, NMU & community facilities)

No access will be restricted to properties during the works and there will be no loss of land or change in land use as a result of the works.

The works require overnight closure of the A68 220 Earlston Bridge for 1 night (20:00 - 06:00), followed by dayshift lane closure for 4 days (08:00 - 17:00). However, AADT flow is low, TM will only be in place for 5 days, and there are no congestion issues noted during the proposed construction hours. As such, no significant effects on traffic movement are predicted during the works. Carriageway lane closures also permits material lay-down and welfare facilities to be accommodated within the closure, thus ensuring safety of the workforce.

The following mitigation measures will reduce impacts of works on non-motorised users[29] (NMUs) using the bridge during the construction phase:

- Construction lighting will take into account the need to avoid illuminating surrounding properties, to avoid a nuisance at night, and non-essential lighting will be switched off at night.
- Through access will be maintained at all times on the dedicated footpaths which utilise the A68 220 Earlston Bridge. Appropriate measures will also be implemented to permit the safe passage of pedestrians and cyclists of all abilities through the site.
- 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.
- Advanced signage will be strategically placed on the trunk road to notify stakeholders that the road will be closed, with diversion implemented. Signage will be installed at least 7 days in advance of road closures.

[29] For the purposes of this report, NMUs are considered to be all non-motorised traffic, including pedestrians, cyclists and equestrians (with particular consideration of the needs of those with disabilities).

- Journey planning information will be made available for drivers online at the trafficscotland.org website. Journey planning information will also be available for drivers online through BEARs social media platforms.

The works will provide a permanent safety improvement for all NMUs utilising the bridge, and no residual impacts are anticipated at the operational phase of the proposed scheme.

12.0 Air quality

During the construction phase, activities undertaken on site could potentially have some localised and short-term air quality impacts in proximity to the works. The construction phase will, for example, require a range of ancillary plant, vehicles and non-road mobile machinery[30] (NRMM) which will contribute to local dust and air pollutants. There is also the potential for fugitive dust emissions associated with replacement of expansion joints.

However, with mitigation in place following 'Best Practicable Means' and 'Best Practice Guidelines'[31], effects on air quality during construction are not anticipated to be significant, and any minor impacts will also be intermittent, temporary and short-lived. The following mitigation measures will also be implemented to ensure potential impacts are not significant:

- A water-assisted dust sweeper will sweep the bridge-deck after dust-generating activities.
- Materials that have a potential to produce dust will be removed from site as soon as possible, unless being re-used on site.
- Vehicles that remove cold-milled material from site will have sheeted covers.
- A designated laydown area for plant, material and welfare facilities will be established on the A68, at least 10 m from Leader Water / Kelphope Burn and road gullies.
- Good housekeeping will also be employed throughout the works.
- All construction vehicles will comply with relevant EU standards e.g. (i) vehicles will be maintained, ensuring engines and catalysts work efficiently, and (ii) all vehicles will comply with MOT emission standards.
- Vehicle and machinery engines will be switched off when stationary to prevent exhaust emissions. If any emissions of dark smoke should occur (except at start up), the vehicle or machinery involved will be taken out of service immediately and any defect rectified before use.
- Wherever possible, ancillary plant and NRMM will be shut-down when stationary. All ancillary plant and NRMM will also have been regularly maintained, paying attention to the integrity of exhaust systems.
- If powered generators are required, the use of diesel or petrol will be avoided and the use of mains electricity or battery powered equipment will be used (where practicable).
- Cutting, grinding and sawing equipment will be fitted or used in conjunction with suitable dust suppression techniques e.g. water spray or exhaust ventilation system that fits directly onto tools.
- Regular monitoring (e.g. by engineer or Clerk of Works) will take place when dust, particulate matter and exhaust emissions (DPMEE) generating activities are occurring. In the unlikely event that unacceptable DPMEE are emanating from the site, the operation will, where practicable, be modified and re-checked to verify that the corrective action has been effective. Actions to be considered

[30] Non-Road Mobile Machinery is a broad category which includes mobile machines, and transportable industrial equipment or vehicles which are fitted with either an internal spark ignition petrol engine, or a compression ignition diesel engine and not intended for transporting goods or passengers on roads. Examples of non-road mobile machinery include, but are not limited to: (i) generators, (ii) bulldozers, (iii) pumps, (iv) construction machinery, (v) mobile cranes, etc.

[31] Institute of Air Quality Management. (2014). Guidance on the assessment of dust from demolition and construction (version 1.1).

include: (a) minimizing cutting and grinding on-site, (b) reducing the operating hours, (c) changing the method of working, etc.
- Upon completion of the works, the working area will be cleaned.

The works will not result in any significant impacts on air quality during the operational phase.

13.0 Cultural heritage assessment

Works are purely maintenance and restricted to upgrading and strengthening, on a like-for-like basis, essential bridge components. As such, no significant adverse impacts on the cultural heritage or material assets of the A68 220 Earlston Bridge, which is recorded as a CNR.

There is no connectivity between the scheme and the two listed buildings within 300 m of the bridge. Moreover, the works do not include any alterations that would affect the historic and architectural character of these features. As such, application for listed building consent is not required.

14.0 Biodiversity

A Habitats Regulations Screening and Appropriate Assessment have shown that there is enough information and assessment evidence to conclude that, with the implementation of mitigation and control measures, the scheme will not cause a LSE on the River Tweed SAC, either alone or in-combination with other projects or plans.

All works are restricted to the A68 220 Earlston Bridge deck therefore no direct land take or clearance within the designated sites is required, and the works will therefore not result in loss or function (e.g. habitat loss or species fragmentation) of the designated sites. There is also no requirement for resources from the designated sites. Carriageway lane closures also permits material lay-down and welfare facilities to be accommodated within the closure, thus minimising risk to Leader Water / Kelphope Burn, and by association the River Tweed SAC. As works are restricted to the bridge deck, there is also no connectivity between the scheme and the Himalayan balsam on the riverbank at the abutment adjacent to the bridge.

In the absence of mitigation there is potential for pollution and/or sediment laden runoff on the bridge-deck to enter road gullies, positioned at either end of the A68 220 Earlston Bridge. Pollution and/or sediment laden runoff would thereafter have a pathway to enter Leader Water / Kelphope Burn, via drainage outlets on Leader Water / Kelphope Burn embankments, and by association the River Tweed SAC. Although there would be dilution of any pollutants/sediment laden runoff within the river system, mitigation will be required to provided pollution control measures and ensure no Likely Significant Effects (LSE). Refer to Section 17.0 ‘Road drainage and the water environment’ for details.

It is likely that ancillary plant, vehicles and NRMM as part of the work processes will lead to a slight increase in noise in the area surrounding the works. This could potentially disturb local wildlife. However, considering the nature, duration, size and scale of the scheme, and the good site practice mitigation measures which will be followed during the construction phase, the desktop and PEAs have confirmed that it is unlikely that works will pose a significant environmental risk.

The following 'Best Practicable Means' and 'Best Practice Guidelines' mitigation measures will also be implemented to ensure potential impacts on wildlife and the SAC are not significant.

- All mitigation measures detailed within Section 12.0 'Air quality', Section 16.0 'Noise and vibration' and Section 17.0 'Road drainage and the water environment' will be followed to protect wildlife and designated sites.
- Material, ancillary plant, vehicles, NRMM and personnel will be constrained to the laydown area, thereby eliminating damage to designated sites and potential direct mortality and disturbance to species.
- BEAR Scotland will appoint an Environmental Clerk of Works (EnvCoW) to visit the site periodically to supervise operations onsite during critical work phases and to ensure appropriate environmental safeguards are being adhered to. The EnvCoW will undertake an initial day-one site visit to review site management practices and provide toolbox talks. Following this, site visits are anticipated to be arranged during deck joint installation and carriageway resurfacing.
- If during works unforeseen disturbance of protected species becomes evident, works will cease in this area, and appropriate mitigation measures will be discussed, agreed and implemented with stakeholders e.g. NatureScot, SEPA, Fishery Board, etc.
- BEAR Scotland's Environmental Team will be contacted to allow consideration of potential environmental effects if:
    - Unforeseen site clearance is required.
    - Unplanned works must be undertaken outwith the carriageway boundary.
    - There is any deviation from the agreed plan, programme and/or method of working.
    - Breeding birds / nests are found onsite.
- BEAR Scotland's Control Room will be contacted if there is a pollution incident.

Based on the like-for-like maintenance nature of the works, there will be no operational impacts to the A68 220 Earlston Bridge upon completion of the works. As such, it is not anticipated that there will be any impacts on designated sites or their qualifying features during the operational phase.

15.0 Landscape & visual effects

During the 5-day construction period, there will be intermittent short-term impacts on the visual amenity of the area due to the presence of ancillary plant, vehicles and NRMM on the A68 220 Earlston Bridge.

The following mitigation measures will reduce the visual impacts of the works:

- During all stages of the works, the site will be kept clean and tidy, with ancillary plant, vehicles, NRMM, materials and wastes stored appropriately in the designated laydown area on the A68 trunk road.
- Good housekeeping will also be employed throughout the works.

Based on the like-for-like maintenance nature of the works, there will be no operational impacts to the A68 220 Earlston Bridge upon completion of the works.

16.0 Noise & vibration

During the construction phase, activities undertaken on site could potentially have some localised and short-term noise impacts in proximity to the works. The works will, for example, require a range of ancillary plant, vehicles and NRMM, and noise will also be generated through the use of grinders, impact wrenches, chipping hammers, etc. Any temporary short-term increase in noise levels may cause disturbance to local wildlife and NSRs. However, residential properties are screened from the bridge, and any increases will be intermittent and will only last for the duration of the works (5 days).

With mitigation in place following 'Best Practicable Means' and 'Best Practice Guidelines', as described within BS 5228-1[32] and BS 5228-2[33], effects on noise and vibration during construction are not anticipated to be significant, and any minor impacts will also be intermittent, temporary and short-lived. Given the nature of the works, and the height of the bridge above the River Tweed, no ground-borne vibration impacts have been forecast.

The following mitigation measures will also be implemented to ensure potential impacts are not significant:

- Where possible, the noisiest work operations (e.g. cold milling, using breakers (jackhammers), chipping hammers, etc.) will be completed before 23:00.
- If unacceptable noise is emanating from the site the operation will, where possible, be modified and re-checked to verify that the corrective action has been effective. Actions to be considered include (a) minimizing cutting and grinding on-site, (b) reducing the operating hours, (c) repositioning ancillary plant, (d) changing the method of working etc. Corrective actions will be actioned through the non-conformance reporting procedure, which ensures a root-cause analysis is carried out on each incident. The non-conformance procedure also ensures that appropriate corrective and preventative action measures are agreed and implemented in a timely fashion with all parties and are recorded, actioned through to closeout, and fully auditable and traceable.
- If ancillary plant, vehicles or NRMM not assessed by this RoD are required to complete the works, then an immediate review will take place between the Clerk of Works, Senior Engineer and BEAR's Environmental Team, as appropriate.
- Ancillary plant, vehicles and NRMM with directional noise characteristic will (where practical) be shut down in intervening periods between site operations.
- Drop heights from vehicles and NRMM will be kept to a minimum to minimise noise when unloading.
- Ancillary plant, vehicles and NRMM will be started sequentially rather than all together.
- All ancillary plant, vehicles and NRMM used onsite will have been regularly maintained, paying attention to the integrity of silencers and acoustic enclosures.
- The use of paving breakers (jackhammers), grinders, impact wrench's, chipping hammers, etc. will be avoided (except where there is an overriding justification), and if used will be fitted with mufflers or silencers of the type recommended by the manufacturer.
- All compressors will be 'sound-reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed when in use.
- Reversing warning systems of HGVs, site vehicles and NRMM will be switched to the minimum setting required by HSE and, where possible, will utilise 'broadband non-tonal' or 'directional sound reversing' alarms. Speed limits will also be reduced through the works.

The works will not result in any significant impacts on noise during the operational phase.

[32] BS 5228-1:2009+A1:2014. Code of practice for noise and vibration control on construction and open sites. Noise.
[33] BS 5228-2:2009+A1:2014. Code of practice for noise and vibration control on construction and open sites. Vibration.

17.0 Road drainage & the water environment

Any construction work above a waterbody has inherent risk factors. Potential risks to Leader Water / Kelphope Burn (Cleekhimin Burn confluence to River Tweed), which forms part of the River Tweed SAC, include spills from ancillary plant, vehicles and NRMM, and dirty water runoff from the designated laydown area. There is also a risk that material, ancillary plant and NRMM could fall into the River Tweed during the works. The risk factor has however been somewhat reduced through the installation of an edge protection system (EPS) before works commence. Ancillary plant, fuel, oils, generators etc. will also be bunded appropriately in the designated laydown area. Provided the following mitigation measures are adhered to during the works, potential risk factors are not anticipated to be significant. The likelihood of flooding on the A68 220 Earlston Bridge is also not a risk factor, due to the bridge deck's height above Leader Water / Kelphope Burn. There is also no requirement for in-water works.

Provided the following mitigation measures are adhered to during the works, potential risk factors are not anticipated to be significant:

- An EPS will be utilised to prevent material, ancillary plant, debris, sediment, etc., escaping over the A68 220 Earlston Bridge deck during works (Figure 4). Sandbags will be located at the bottom of the containment systems and debris netting will cover the EPS.

Figure 1. Edge Protection System

- The Contractor will implement measures to minimise the risk of sediment or accidental spillages entering the road drainage system (and by association Leader Water / Kelphope Burn) e.g. prior to works commencing, any roadside gullies within 10 m of work activities will be bunded to ensure full segregation of the works from the road drainage system (and by association Leader Water / Kelphope Burn). The Contractor will inspect bunds periodically to ensure that they have not been removed, damaged or interfered with and they will be cleaned of silt and debris as necessary. If it is identified that bunds are not up to standard, the works will not commence until they have been reinstated to the condition, they were originally in.
- The Site Supervisor and/or Clerk of Works will undertake regular visual inspections of the designated laydown area (located on the A68, at least 10 m from Leader Water / Kelphope Burn and road gullies) and work site (especially during periods of heavy rain). The Site Supervisor and/or Clerk of Works is also responsible for undertaking prompt remedial action to prevent any pollution from entering Leader Water / Kelphope Burn.

- The abstraction or transfers of water, or the washing of tools in the Leader Water / Kelphope Burn is not permitted. No discharges into the Leader Water / Kelphope Burn will be permitted.
- All site personnel will be made aware of site spillage response procedures and in the event of a spill, all works associated with the spill will stop, and the incident reported to the Clerk of Works. Small spills that did not leave the site boundary and are cleaned up without material environmental harm or residual environmental impact would most likely not be required to be notified to SEPA, NatureScot or other stakeholders. However, all such incidents will be recorded and reported to BEAR Scotland's Environmental Team. In the event of a 'serious incident'34, SEPA and NatureScot will be notified without delay. Such notification will include: (i) the time and duration of the incident, (ii) a description of the cause of the incident, (iii) any effect on the environment as a result of the incident, and (iv) any measures taken to minimise or mitigate the effect and prevent a recurrence.
- Spill kits will be available and replenished onsite when required.
- All waste, vehicles, ancillary plant, NRMM and fuels will be stored in the laydown area and will be secured and located, if space is available, at least 10 m from drainage entry points and Leader Water / Kelphope Burn, in order to comply with GPP 5 'works and maintenance in or near water'. Refuelling will only be undertaken at designated refuelling areas (e.g. on hardstanding, with spill kits available, and >10 m from drainage entry points and Leader Water / Kelphope Burn) where practicable. Spill kits will also be replenished onsite when required. Only designated trained and competent operatives will be authorized to refuel plant. Generators, and other ancillary plant and NRMM, where there is a risk of leakage of oil or fuel, will have internal bunding OR will have a secondary containment system (e.g. drip trays, plant nappies, etc.) placed beneath them that meets 110% capacity requirements. Containment systems will also be emptied regularly. All material, waste, vehicles, ancillary plant, NRMM and fuels will also be stored in a manner that ensures they are protected from damage by collision or extremes of weather.
- All vehicles and and NRMM used onsite will have been regularly maintained, paying attention to the integrity of oil tanks, coolant systems, gaskets etc. A checklist will be present to make sure that the checks have been carried out.
- Any vehicles and NRMM not in operation will (where possible) be sited in the laydown area.
- Vehicle washing will take place in approved vehicle washing areas with access to appropriate drainage.
- Consideration will be given to work patterns in relation to wet weather. Periods of heavy rainfall will be avoided and after heavy rainfall, inspection and maintenance of all controls will be undertaken.
- **Toolbox Talk TTN 012 'Sediment Pollution'** will be briefed to all personnel on-site prior to works commencing.

18.0 Geology & soils

As the works will take place entirely on the A68 220 Earlston Bridge, and due to the structure's height above Leader Water / Kelphope Burn, there will be no impact on geology and soils.

19.0 Material assets & waste

There will be limited consumption of materials and natural resources or generation of waste associated with the works and none of the maintenance activities will require any resources from the SAC.

The schemes are executed by the operating company as site operations e.g. 'As-of-Right' schemes of values less than £350,000, therefore a Site Waste Management Plan is not required.

[34] 'serious incident' means: (i) any accident, spillages, or uncontrolled discharge which has had, or could have, an adverse impact on the water environment, or (ii) any malfunction, breakdown or failure of plant or techniques which has had an adverse impact on the water environment, or (iii) any event, such as force majeure or action taken to save human life or limb, which results, or is likely to result, in a breach of contract or any condition of a licence.

The Contractor will be responsible for the disposal of road planings (European Waste Catalogue Code: 17-03-02), and this will be undertaken in accordance with the Paragraph 13 exemption[35] , as described in Schedule 3 of the Waste Management Licensing Regulations 2011. However, SEPA's website is currently closed due to an international hacking incident therefore Paragraph 13 exemption registration identification numbers are currently not being issued.

All wastes removed from site will be consigned, transported and disposed of in full accordance with all relevant UK legislation e.g. Duty of Care[36] requirements apply e.g. evidence of material transfer notes and/or waste exemption certificates will be supplied by a licenced waste carrier.

Provided the following mitigation measures are followed, environment impacts from the use of materials and natural resources and disposal of waste during the construction phase are not anticipated to be significant:

- Good materials management methods (e.g. use of 'just-in-time' delivery), will be implemented wherever possible.
- Designated areas will be identified (outwith the bridge deck), within which all materials and personnel, including construction compounds, will be contained to minimize environmental risk during construction works. This will include a designated area (if required) for segregation and reuse of waste materials.
- The selection of areas for materials stockpiling will avoid sensitive locations such as road drainage entry points, the edge of the bridge deck and Leader Water / Kelphope Burn. Stockpiled materials with leachate potential, for example, will be stored away from road drainage and to prevent cross-contamination with other materials, wastes or groundwater.
- Materials must be stored with the appropriate security to prevent loss, theft or vandalism.
- All temporary road signs and traffic cones must be removed from site on completion of works.
- The site must be monitored regularly for signs of litter and other potential contaminants and litter must be removed before and after works take place. The site must be also be left clean and tidy.
- Wastewater from welfare facilities (if required) must be emptied, followed by tanker removal for effluent treatment offsite.
- If hazardous substances must be used on site, each substance will be required to undergo assessment under the Control of Substances Hazardous to Health (COSHH) Regulations 2002. Hazardous substances (if required) must also be clearly labelled and stored in line with COSHH safety data sheets within the designated laydown area, at least 10 m from surface drains (where possible).
- COSHH waste should NOT be mixed with general waste and/or other recyclables.
- COSHH waste and/or special waste (if required) will be removed from site by a specialised waste carrier.
- If any substance used on site displays the 'Dangerous to the Environment' COSHH symbol, then the following controls will be implemented: (i) the substance will not be permitted to enter surface drains (ii) any spillages will be contained using bunding and then absorbed with an absorbent material (e.g. dry sand or earth) and then collected and stored in a suitable container which is properly labelled and sealed securely in preparation for disposal, (iii) spillages or uncontrolled discharges will be immediately reported to SEPA.

[35] A Paragraph 13 exemption states that prior to commencement of planing operations, the main contractor, or the planing sub-contractor, must establish that there is an identified and certain end-use for the milled asphalt road planings

[36] The 'Duty of Care' requires that a waste holder (producer, carrier or disposer) takes all reasonable steps to ensure that waste is described in a way that permits its safe handling and management and that any transfer of waste is accompanied by a written description of the waste, including an EWC code.

20.0 Climate

The Climate Change (Scotland) Act sets out the target and vision set by the Scottish Government for tackling and responding to climate change. The Act includes a net-zero target for greenhouse gas emissions before 2045 (from the baseline year 1990)[37]. In response, BEAR Scotland, working on behalf of Transport Scotland, undertake carbon monitoring of our major projects and operational activities. Emissions from our activities are recorded using Transport Scotland's Carbon Management System. BEAR Scotland also undertakes resource efficiency activities to manage and reduce emissions contributing to climate change. Actions and considerations for this scheme are detailed in Section 19 'Material assets & waste''.

There is minimal requirement for additional power generated tower lighting along the project extents, as night-working on the bridge is only required for 1-night (20:00 - 06:00), therefore impacts from tower lighting along the bridge will not be significant. In addition, local contractors and suppliers will be used as far as practicable to reduce fuel use and greenhouse gas emitted as part of the works.

Works to refurbish the A69 220 Earlston Bridge will extend the maintenance intervals required for future works on the bridge. In doing so, the service life of the structure is also extended.

21.0 Risk of major accidents or disasters

The A68 220 Earlston Bridge is not located within a geographical region that is subject to natural disasters and there is no likelihood of flooding on the bridge due to its height above the River Tweed.

AADT flow is low and traffic management will only be utilised for 5 days during the works, therefore any risk of collision from errant vehicles within traffic management will be temporary and short-lived.

Release of pollutants during works, or as a result of an accidental spillage, have the potential to affect all habitats and species present within the Leader Water / Kelphope Burn (and by association the River Tweed SAC). The key issue with respect to pollution is the procedures put in place to minimise the risk of contaminants entering Leader Water / Kelphope Burn in sufficient concentrations to cause adverse effects the SACs integrity. A SEMP will therefore be produced by BEAR Scotland which will set out a framework to reduce the risk of adverse impacts from construction activities on sensitive environmental receptors. The SEMP will set-out a process for recording environmental risks, commitments and constraints and will identify the procedures and measures that will be used to manage and control these aspects. In addition, the SEMP seeks to ensure compliance with environmental legislation, government policy, and scheme-specific environmental objectives. The SEMP will also formalise a mechanism for monitoring, reviewing and auditing environmental performance and compliance. As such, any sub-contractors contracted for the works will comply with all conditions of the SEMP and may be subject to audit throughout the contract.

[37] The Climate Change Act was amended in Scotland in 2019 from an 80% reduction by 2050, to a net-zero target by 2045.

A Designer's Risk Register will also be prepared by BEAR Scotland, which addresses potential environmental risks. Activity-specific RAMS will also be produced and will recognise and highlight environmental risks and detail how these will be addressed, as well as contingency plans to deal with environmental incidents. RAMS produced by sub-contractors (if required) will also be approved by BEAR Scotland prior to works commencing.

Considering the above, it is judged that the residual effects of the scheme to risks from major accidents or disasters is low.

22.0 Cumulative effects

There are no known external projects currently planned, or recently completed, that have the potential to contribute to in-combination or cumulative effects on the River Tweed SAC[38].

There are no major projects currently at the planning stage that will be carried out by BEAR Scotland or sub-contractors on the A68 220 Earlston Bridge, or in immediate vicinity of the bridge during 2021, that could result in 'in-combination' or 'cumulative effects'. Bridge refurbishment works also improve safety on the bridge and protect against future deterioration of the structure. Maintenance therefore extends the period between major interventions on the bridge. As the bridge deck refurbishment works on their own are not anticipated have a significant effect, there will be no 'in-combination' or 'cumulative effects' of the works given that mitigation measures and standard best practice will be in place to avoid environmental impacts.

EXTENT OF EIA WORK UNDERTAKEN AND DETAILS OF CONSULTATION

The following environmental parameters have been considered within this RoD:

- Population and human health (properties, land use, NMU & community facilities)
- Air quality
- Cultural heritage assessment
- Biodiversity
- Landscape & visual effects
- Noise & vibration
- Road drainage & the water environment
- Geology & soils
- Material assets & waste
- Climate
- Risk of major accidents or disasters
- Cumulative effects.

A PRA and PEA were undertaken by RSK Biocensus Ltd on 13th of July 2020 (on behalf of the previous Operating Company - Amey), and PEAs were undertaken by BEAR's Environmental team on 8th and 19th February 2021.

A Habitat Regulations Appraisal (HRA) Screening and Appropriate Assessment (AA) was undertaken to evaluate if the project could have Likely Significant Effects (LSE) on the River Tweed SAC. Consultation was undertaken

[38] https://eplanning.scotborders.gov.uk/online-applications/spatialDisplay.do?action=display&searchType=Application (Scottish Borders Council) [Accessed 02/02/21]

with NatureScot Area Officer for the Scottish Borders[39] (March 2021) regarding the HRA Screening and AA conclusions. The Area Officer stated that he has read through the HRA, AA and SEMP and is '*happy with the content and conclusion*s'.

STATEMENT OF CASE IN SUPPORT OF A DETERMINATION THAT A FORMAL EIA AND ENVIRONMENTAL STATEMENT IS NOT REQUIRED

The works are considered to constitute a relevant project falling within Annex II of the Environmental Impact Assessment Directive 2014/52/EU because the A68 220 Earlston Bridge spans, and therefore has connectivity to, the River Tweed SAC.

Maintenance works have been subject to screening using the Annex III criteria to determine if a formal Environmental Impact Assessment (EIA) is required under the Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017. Screening using Annex III criteria, reference to consultation undertaken, and review of available information has not identified the need for an EIA.

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

- **Characteristics of the scheme**
  - Works are limited to bridge-deck resurfacing and replacement of two asphaltic plug joints. The northern joint will be replaced 'like-for-like' and the southern joint will be replaced with a BEJ8 mechanical joint.
- **Location of the scheme**
  - The A68 220 Earlston Bridge spans Leader Water / Kelphope Burn (Cleekhimin Burn confluence to River Tweed) which forms part of the River Tweed SAC.
- **Characteristics of potential impacts of the scheme**
  - Impacts during construction will be temporary and short-lived since the construction period is forecast to be completed over 1 night and 4 days.
  - Works are contained exclusively to the A68 220 Earlston Bridge deck (< 1 ha) therefore land use will not change as a result of the works.
  - The AA has shown that there is sufficient information and assessment evidence to conclude that the project will not cause a LSE on the River Tweed SAC with the implementation of mitigation and control measures, as outlined in this RoD, either alone or in-combination with other projects and plans. Therefore, no further stages of HRA are considered necessary for this project.
  - With good practice pollution prevention measures implemented onsite, there is a negligible risk of a pollution event e.g. the SEMP, Designer's Risk Register, and activity-specific method statements include plans to address environmental incidents.
  - Measures will be in place to limit any short-term impacts on NMUs.
  - There will be limited consumption of materials and natural resources or generation of waste associated with the works e.g. road planings will be fully recycled in accordance with Guidance on the Production for Fully Recovered Asphalt Road Planings.
  - Measures will be in place to ensure appropriate removal and disposal of waste.

[39] Stuart Macpherson | Area Officer | NatureScot | Anderson's Chambers | Market Street | Galashiels, TD1 3AF | 01738457069 Stuart.Macpherson@nature.scot

- As the works are limited to bridge-deck resurfacing and replacement of expansion joints, there is no change to the vulnerability of the A68 220 Earlston Bridge to the risk (or severity) of major accidents or disasters that could impact the environment.
- No impacts on the environment are expected during the operational phase.

File references of supporting documentation

- BEAR Environmental Screening Report
- BEAR Habitats Regulation Appraisal Screening and Appropriate Assessment
- Preliminary Roost Assessment and Preliminary Ecological Appraisal (RSK Biocensus Ltd No. 2480875 – Rev 00).

Appendix A: Scheme location and site photographs

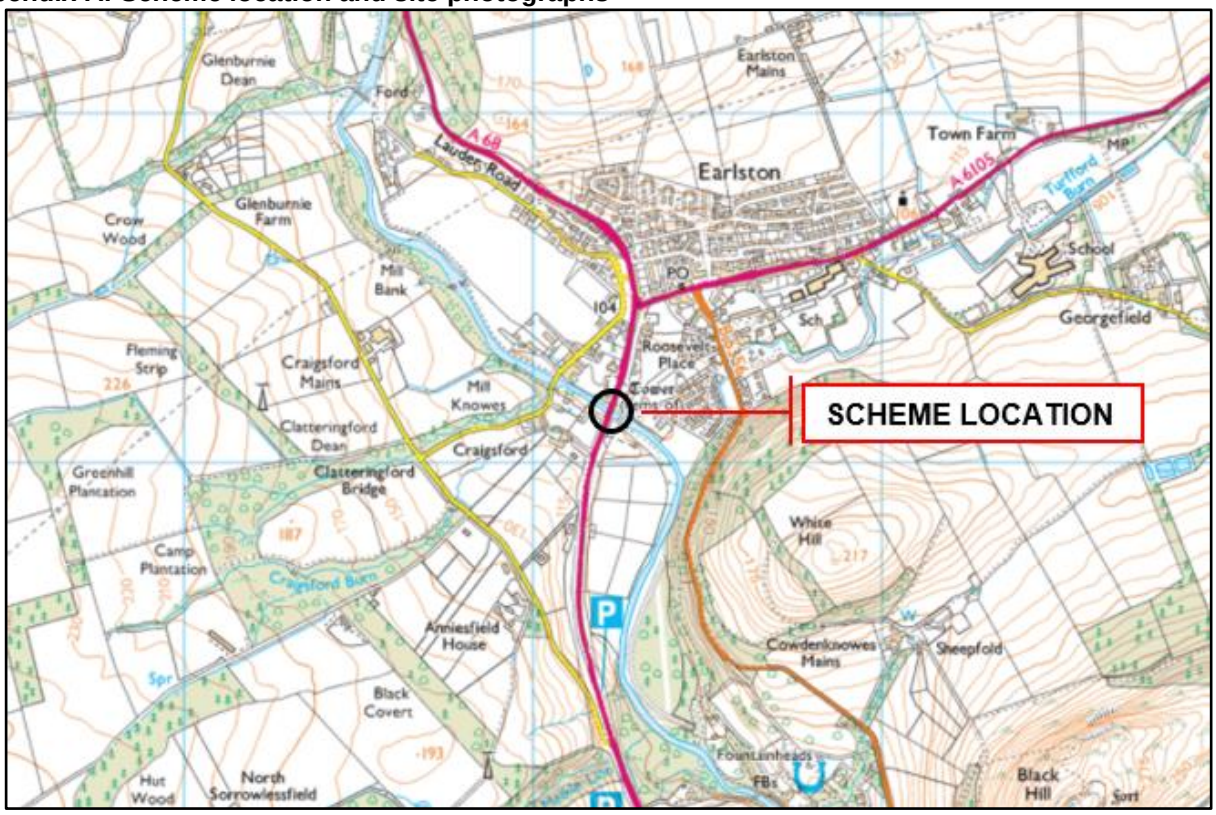

Figure 2. A68 220 Earlston Bridge (highlighting scheme extents). Source: Grid Reference Finder. Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown Copyright and database right 2020.

Figure 3. The A68 220 Earlston Bridge (looking north). Source: BEAR Scotland.