



**TRANSPORT
SCOTLAND**
CÒMHDHAIL ALBA

Environmental Impact Assessment Record of Determination

M90 10-11 55 Friarton Bridge

**Pier 6 and Pier 7 Concrete
Repairs**

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Project Details

Description

BEAR Scotland has been commissioned by Transport Scotland to undertake concrete repairs on Pier 6 (NO 13036 21577) and Pier 7 (NO 13110 21737) of the M90 10-11 55 Friarton Bridge. With the aim being to repair the pier crossheads. In total 5.56 m² of concrete will be repaired on Pier 6 and 8.54 m² of concrete will be repaired on Pier 7.

Works will involve the following construction activities:

- install scaffolding around piers (sheeting or boarding will be installed on river side of piers to prevent debris falling into river),
- break out defective concrete on the crossheads on all faces, ensuring only quarter panels are removed at any one time to prevent any structural instability,
- remove debris from site,
- clean the rebar and prep for new concrete,
- install anodes,
- apply spray concrete to required thickness and to level finish,
- remove scaffolding.

Concrete repairs are required because principal and general inspections have highlighted that there is significant cracking and spalling of the concrete, particularly on the pier crossheads, which is attributed to salt particles from the river.

Machinery and equipment are limited to a mini telehandler, compressor, generator, scaffolding, mechanical hand tools (for breaking out concrete) and a specialist concrete sprayer.

Site compounds will be setup at both piers, but not at the same time e.g., works will be completed at Pier 6 prior to works commencing at Pier 7. At Pier 6 the compound will be setup at the bell mouth to the newly constructed field access entrance, and the compound for Pier 7 will setup next to the pier, with a laydown area setup in the small parking area next to the access bridge. At both locations, the site compound will be located on a hardstanding area. A welfare van will be used onsite. Access to Pier 7 will be via the A85 and access to Pier 6 will be via Friarton Road. There is no requirement for traffic management.

The concrete repair works are due to commence 29th April 2022 and are expected to be complete within 30-days (15-days at each pier), with works undertaken during daytime hours (07:00 - 17:00).

Location

The M90 10-11 55 Friarton Bridge is located on the M90 and spans the River Tay (Figure 1). Pier 6 and Pier 7 (Figure 2 and Figure 3) are the piers closest to the river's edge, and the River Tay lies approx. 10 m from the piers.

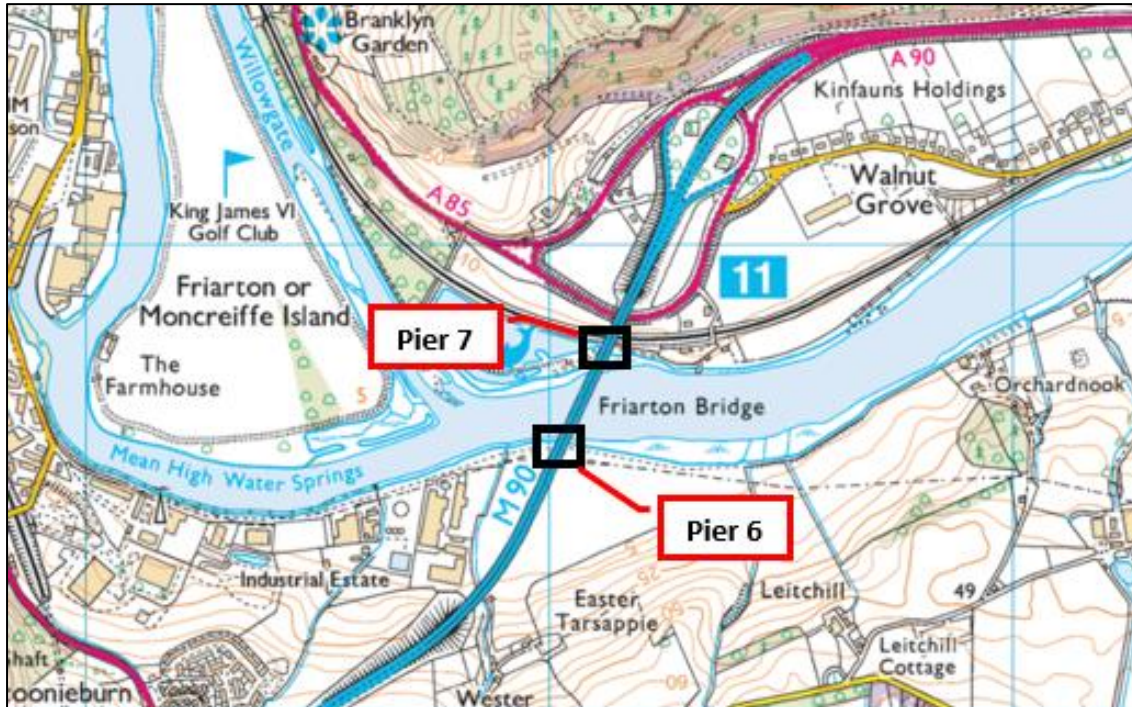


Figure 1. Location of Pier 6 and Pier 7 on the M90 10-11 55 Friarton Bridge.



Figure 2. Pier 6 (looking south).
Source: BEAR Scotland



Figure 3. Pier 7 (looking north).
Source: BEAR Scotland

Description of local environment

Air quality

Pier 7 lies within the Perth [Air Quality Management Area](#) (AQMA), declared for particulate matter <10 µm (PM₁₀) and Nitrogen Dioxide (NO₂). Pier 6 lies out with the AQMA.

Two sites registered on the [Scottish Pollutant Release Inventory](#) (SPRI) lie within 1 km of the scheme (approx. 0.38 km south and 0.75 km west). These are as follow:

- Scotloo, Kinnoull House (waste and waste-water management)
- Viridor Enviroscot (waste and waste-water management)

Baseline air quality is mainly influenced by vehicles travelling along the motorway. Secondary sources are likely derived from day-to-day urban and agricultural land management activities. The Perth to Dundee railway line (with associated land) forms a corridor west to east, approximately 70 m north of Pier 7. Occasional train movement will therefore also have an impact. However, it is likely that train movements will be infrequent.

Cultural heritage

There are no world heritage sites, scheduled monuments, listed buildings, conservation areas, inventory battlefields or garden and designed landscapes within 300 m of the piers.

Of lesser cultural heritage value, thirteen undesignated cultural heritage assets (UCHA) lie within 300 m of Pier 6 and Pier 7. Two of these, pertain to Friarton Bridge. There is no connectivity between the scheme and the remaining UCHAs e.g., the nearest lies out with the motorway boundary.

Landscape and visual effects

The M90 10-11 55 Friarton Bridge is an 831 m long cantilever four-lane road bridge which is suspended 37 m above the River Tay. As such, the bridge forms a dominant linear landscape feature, which has a distinct character shaped by a large volume of fast-flowing traffic, road infrastructure, parapets, barriers, etc. The bridge is situated on undulating ground that slopes, at both ends of the bridge, to the River Tay. The bridge abutments are set-back from the river channel allowing for the continuation of the riparian corridor. The scale of the bridge creates a visual detractor in the context of the surrounding landscape, and as such contributes little to the quality and character of the area.

The scheme is not situated within a 'sensitive area' designated for landscape features e.g., National Park (NP), National Scenic Area (NSA), etc.

Land use within 2 km of the M90 10-11 55 Friarton Bridge is categorised into the following; (i) motorway, (ii) urban, (iii) recreation area, (iv) managed woodland, (v) plantation, (vi) designed landscape, (vii) rectilinear farms and fields, (viii) quarry.

The [national scale land capability for agriculture](#) classifies land surrounding Pier 6 as being 'Class 3.2' – land capable of average production though high yields of barley, oats and grass can be obtained (grass leys are common). Land surrounding Pier 7 is classified as 'Class 5.2' – land capable of use as improved grassland (few problems with pasture establishment but may be difficult to maintain).

Biodiversity

The River Tay Special Area of Conservation (SAC) (EU Site Code UK0030312) lies approximately 10 m from Pier 6 and Pier 7. The [River Tay SAC](#) is designated for its internationally important population of Otter (*Lutra lutra*), Atlantic salmon (*Salmo salar*), River lamprey (*Lampetra fluviatilis*), Brook lamprey (*Lampetra planeri*), Sea lamprey (*Petromyzon marinus*) and clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels.

A Preliminary Ecological Appraisal (PEA), undertaken on 24th August 2021, did not note any permanent habitat for any mammal species of conservation importance, within the area of likely construction disturbance.

A Preliminary Roost Assessment (PRA) was undertaken on the 6th of October 2021. The PRA was carried out from ground level using a powerful torch and binoculars. No evidence of bats, such as bat droppings, or bats were found or observed. The broken areas of concrete were also assessed as being too shallow to provide suitability for bats, and the bearing joint shelves were noted as being too exposed for bat roosting. Despite being in an excellent location for bats i.e., adjacent to the River Tay and woodland, Pier 6 and Pier 7 were considered to have negligible bat roosting potential. As such, there is no further requirement for additional bat surveys prior to works commencing.

The Integrated Roads Information System (IRIS) records no invasive non-native species (INNS), as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA) or invasive native perennials as listed in the Trunk Road Inventory Manual, within the scheme extents. One record of Common ragwort (*Senecio jacobaea*), an injurious weed as listed under the Weeds Act 1959, is recorded between Pier 6 and the rock armour of the River Tay. A PEA undertaken on 24th August 2021 recorded Giant Hogweed (*Heracleum Mantegazzianum*), an INNS, as listed on Schedule 9 of the WCA 1981 (as amended) around the base of Pier 6. Common Ragwort and Rosebay willowherb (*Chamerion angustifolium*), invasive native perennials, as listed in the Trunk Road Inventory Manual, are present at various locations in proximity to Pier 6 and Pier 7, but out with the works corridor. Himalayan Balsam (*Impatiens glandulifera*), an INNS, as listed on Schedule 9 of the WCA 1981 (as amended), is also recorded in proximity to Pier 7, but out with works corridor.

Geology and soils

Pier 6 and Pier 7 are not located within a [Geological Conservation Review Site](#) (GCRS). The piers also do not lie within 300 m of a geological Site of Special Scientific Interest (SSSI) or Local Geodiversity Site (LGS).

The Generalised Soil Type at Pier 6 is Alluvial soils, and at Pier 7 is Mineral gleys. The Major Soil Group at Pier 6 is Alluvial soils, and at Pier 7 is Gleys.

Superficial geology underlying Pier 6 and Pier 7 is comprised of Alluvium (clay, silt, sand and gravel). Bedrock geology is comprised of Ochil Volcanic Formation (andesite, pyroxene).

Material assets and waste

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

The concrete repairs are anticipated to require consumption of 1 m³ of wet concrete, European Waste Catalogue Code 17 01 01. Approx. 1 m³ of concrete waste will also be removed and disposed to a licence facility in advance of concrete spraying.

Machinery and equipment are limited to a mini telehandler, compressor, generator, scaffolding, mechanical hand tools (for breaking out concrete) and a specialist concrete sprayer.

Noise and vibration

Works are not located within a [Candidate Noise Management Area](#) (CNMA) or [Candidate Quiet Area](#) (CQA).

The day-time modelled noise level (Lden) exceeds 80 decibels, with levels dropping to between 65 and 70 decibels at the nearest receptor (residential property).

Baseline noise levels are mainly influenced by vehicles travelling along the motorway. Secondary sources are likely derived from day-to-day urban and agricultural land management activities. The Perth to Dundee railway line (with associated land) forms a corridor west to east approximately 70 m north of the Pier 7. Occasional train movement will therefore also have an impact. However, it is likely that train movements will be infrequent.

Population and human health

The scheme lies within a semi-rural landscape, on the periphery of Perth, with land use dominated by transport infrastructure, urban development and agricultural land.

As such, only five properties (including three business premises) and an industrial estate lie within 300 m of the piers. The two residential properties lie between 150 m and 200 m of Pier 7 and are screened from the works corridor by broadleaved tree shelterbelt (approximately 15 m wide). One business premise lies 70 m west of Pier 7 and has no screening from the works corridor. The remaining two business premises lie more than 200 m from the works corridor and are screened by tree shelterbelt (approximately 15 m wide). The industrial estate lies 130 m southeast of Pier 6 and has limited screening, provided by coniferous tree shelterbelt (approximately 5 m wide). There are no sensitive receptors/land uses within 300 m of the piers.

Riverside Walk [Core Path](#) (ID: 20099) lies approximately 15 m north of Pier 7. There are no [National Cycle Network](#) routes, [Public Rights of Way](#) (PRoW), pedestrian footpaths, bus stops, pedestrian crossing points, bridle paths or other community assets within the study area. Street lighting is absent across the scheme extents.

The M90 10-11 55 Friarton Bridge is a two-lane motorway with the national speed limit applying throughout. The Annual Average Daily Traffic (AADT) flow (2020 data) is 25,626 (ID: 89303) and is comprised of:

- 59 two wheeled motor vehicles,
- 16,976 cars and taxis,
- 72 bus and coaches,
- 5,005 Light Goods Vehicles (LGVs), and
- 3,515 Heavy Goods Vehicles (HGVs).

The AADT flow recorded for pedal cycles (2020 data) was 0.

There are no congestion issues noted on the M90 10-11 55 Friarton Bridge during the proposed working hours.

Road drainage and the water environment

The M90 10-11 55 Friarton Bridge spans the River Tay (R Isla to R Earn Confluences), which is a classified surface waterbody (ID: 6498) in the River Tay catchment of the Scotland river basin district. The main stem is approximately 31.5 km in length. Pier 6 and Pier 7 are situated on the northern and southern banksides of the river, approximately 10 m from the river edge. The river has been assigned an overall Water Framework Directive 2000/60/EC (WFD) classification of 'Good' and 'High' for fish and fish migration. The river also possesses an ecological classification of 'Good'.

There are no small minor unclassified surface water features spanned, culverted beneath or which share direct connectivity with the scheme extents.

The concrete repair works will be undertaken within the boundary of the River Tay Mean High Water Springs (MHWS). As such, a Marine Licence is required under

Part 4 of the Marine (Scotland) Act 2010 and Part 4 of the Marine and Coastal Access Act 2009. A Marine Licence application was therefore submitted to Marine Scotland in June 2021 and was issued in March 2022.

The works lie on the 'Perth' and 'Isla and Lower Tay Sand and Gravel' groundwaters, which have been classified as 'Good'.

The works are located within the 'Strathmore and Fife' Nitrate Vulnerable Zone.

The [Scottish Environment Protection Agency](#) (SEPA) flood map records that the River Tay and its banks have a high risk of fluvial flooding (10% Annual Exceedance Probability (AEP), 10-year flood event). That said, communication with BEAR Scotland's Bridge Team has established that there are no records of the river having inundated Pier 6 or Pier 7.

Climate

The Climate Change (Scotland) Act 2009 creates mandatory climate change targets to reduce Scotland's greenhouse gas emissions. BEAR Scotland have a Carbon Management Policy in place with the core aim of reducing the carbon footprint that the company measures and reports annually.

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.

Description of main environmental impacts and proposed mitigation

Air quality

During the construction phase, activities undertaken on site could potentially have some minor 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 (NRMM) which will contribute to local dust and air pollutants. The main sources are likely to be dust generated by breaking-out defective concrete, as well as exhaust emissions from ancillary plant and vehicles.

Given the proximity to sensitive receptors, nature of the works, and consideration of mitigation detailed below, the proposed works impacts on local air quality levels during the construction period are assessed to be negligible adverse in magnitude.

Upon completion of the works, no residual air quality impacts are anticipated.

Proposed air quality mitigation measures:

- Vehicle equipment and NRMM will be switched off when stationary to prevent exhaust emissions. If any emissions of dark smoke should occur (except at start up), the vehicle equipment or NRMM involved will be taken out of service immediately and any defect rectified before use.
- All ancillary plant, vehicles and NRMM 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.
- If powered generators are required, the use of diesel or petrol will be avoided and mains electricity or battery powered ancillary plant 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 local exhaust ventilation system that fits directly onto tools.
- Materials that have a potential to produce dust will be removed from site as soon as possible.
- 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 include: (a) minimizing cutting and grinding on-site, (b) reducing the operating hours, (c) changing the method of working, etc.

Cultural heritage

Scoped out. There are no features of cultural heritage significance that require planning permission or consent. Works are also like-for-like and will not impact the cultural heritage or material assets of the M90 10-11 55 Friarton Bridge which is recorded as a CNR/HER.

Landscape and visual effects

No vegetation will be removed as a result of the proposed works.

Construction activities associated with the works, including the use of work compounds, will result in a temporary localised visual impact along the River Tay at the M90 10-11 55 Friarton Bridge. However, due to the nature and duration of the works, and consideration of mitigation below, impacts on landscape are assessed as temporary negligible adverse in magnitude.

Upon completion of the works, no residual impacts are anticipated e.g. the works only involve like-for-like concrete repairs.

Proposed landscape and visual effects mitigation measures:

- Construction vehicles will not be left in places where soil or vegetation can be damaged. If damage to soil or vegetation occurs, this will be lightly cultivated or graded (upon completion of the works) to allow natural recolonization by local species and promote integration with existing landscape character.

Biodiversity

Habitat immediately bordering Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge, is of low intrinsic value because the bridge piers are subject to cyclic maintenance e.g., grass cutting, weed control, etc. Land surrounding the bridge piers therefore have extremely limited vegetation cover or shelter available for any mammal species of conservation importance and it is therefore considered unlikely that any mammal species of conservation importance are associated with permanent habitat or resting places within the area of likely construction disturbance. A PEA, undertaken on 24th August 2021, supports these findings e.g. the PEA did not note any permanent habitat for any mammal species of conservation importance within the area of likely construction disturbance.

All works are also restricted to areas of made-ground at Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge, with only like-for-like minor concrete repairs being undertaken. As such, there is no direct hydrological connectivity between the scheme and the River Tay, therefore the river will retain its present flow characteristics and will continue to allow fish passage. Restricting works to Pier 6 and Pier 7 also ensures that the works do not involve any physical altering or removal of habitat or result in any habitat fragmentation. Any species in the area are also likely to be accustomed to road noise on the M90 and the scheme is of short duration (30-days) utilising a daytime working pattern, negating the requirement for

artificial lighting. Road space and proximity of agricultural land and urban development also limit the surrounding areas habitat potential.

While works will not result in a direct impact on the River Tay SAC, potential indirect risk exists. A loss of containment e.g. fuel, oil, chemicals (i.e. hydraulic fluid), or concrete/cement wash could have a significant adverse environmental impact if it entered the River Tay, the severity being contingent on the substance and quantity lost. However, the works will be undertaken approximately 10 m from the SAC, with vegetation acting as a buffer if an accidental loss of containment were to occur. Materials will also be stored in the compound and the accidental release of pollutants is also extremely unlikely. Pollution prevention measures will be strictly enforced onsite and Pollution Prevention Guidance (PPGs) and Guidance for Pollution Prevention (GPP) will be strictly adhered to, reducing the likelihood of a loss of containment occurring.

Any accidental encroachment of the workforce into areas containing Giant Hogweed, and any other invasive or injurious flowering plant species, could lead to the spread of these species. That said, the likelihood of any spread of invasive or injurious flowering plant species will be mitigated through controlling/treating, by cultural methods and/or chemical weed control, prior to works commencing.

The proposed works also have the potential to cause noise and visual disturbance impacts to the qualifying interests of the River Tay SAC. The works will, for example, require a range of ancillary plant, vehicles and NRMM which will emit noise and create potential disturbance. The works will also require delivery of materials and the presence of personnel to facilitate installation and removal of scaffolding and specialist equipment for spraying concrete to the M90 10-11 55 Friarton Bridge piers. However, disturbance will be localised to Pier 6 and Pier 7, the compound, and the immediate surrounding area.

Considering the nature, short-term duration, size and scale of the scheme, and the mitigation detailed below, the potential for significant species disturbance within the area of likely construction disturbance is somewhat diminished. The proposed works impacts on biodiversity throughout the construction period are therefore assessed to be temporary minor adverse in magnitude.

Upon completion of the works, no residual impacts are anticipated in relation to biodiversity.

Proposed biodiversity mitigation measures:

- All mitigation measures detailed within 'Noise' and 'road drainage and water environment' will be adhered to.
- Due to the proximity of the River Tay SAC, the concrete repair works have been subject to a Habitats Regulations Appraisal (HRA) Stage 1 Screening, which concluded that no likely significant effects (LSEs) are anticipated on the SAC. The HRA Stage 1 Screening has been shared with NatureScot who are in agreement with the conclusions.
- All site personnel will be made aware of the protected status of the River Tay SAC.

- Giant Hogweed (and any other invasive or injurious flowering plant species) will be controlled/treated by cultural methods and/or chemical weed control prior to works commencing. Biosecurity measures (e.g. exclusion zones) will also be in place to ensure the workforce are excluded from areas containing invasive or injurious flowering plant species out with the works corridor.
- There will be no ancillary plant, vehicles, NRMM stored within 10 m of the River Tay.
- To reduce disturbance, standard construction hours will be 08:00 - 17:00 (Monday to Friday). If any works are required out with the agreed working hours, BEAR Scotland's Environmental Team will be contacted to discuss.
- 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. The EnvCoW will also brief all site personnel as part of the induction process with regard to the potential presence of protected species and sensitive habitats, the mitigation measures, their legal obligations and any licensing conditions imposed on them. Following the initial day-one site visit, site visits are anticipated to be arranged weekly.
- The Contractor will utilise a Site Environmental Management Plan (SEMP), which will detail the mitigation to be implemented and how this will be monitored. The SEMP will include best practice construction methods and include the use of appropriate pollution controls (i.e., PPGs and GPPs).
- Toolbox Talks, as appended to the SEMP, will be delivered to all site personnel prior to works commencing. The Toolbox Talks will provide details of protected species that have the potential to be impacted by the works and any mitigation measures required to prevent disturbance. Toolbox Talks will also cover the presence of working with injurious weeds and invasive plants.
- Site personnel will remain vigilant for protected species and will be instructed to no approach or touch any animals seen on site. Any sightings of protected species will also be reported to BEARs Environmental Team. Should a protected species be encountered or move within 50 m of the active works (including compounds), works will be temporarily halted until the animal(s) move at least 50 m away from the construction site, or until BEARs Environmental Team can provide advice.
- The Contractor will employ 'soft-start' techniques for all noisy activity to avoid sudden and unexpected disturbance during works. Each time the activity is started up after a period of inactivity, the noise levels will be gradually increased over a period of 30 minutes to permit animals (and birds) to move away from the disturbance.
- The works corridor will be minimised as far as possible and ancillary plant, vehicles, NRMM and personnel will be constrained to this area through the use of temporary barriers to minimise damage to habitat adjacent to the works corridor. The works corridor will comprise Pier 6 and Pier 7, the compound and an area under the bridge required to facilitate concrete repairs.

- All equipment stored onsite will be checked at the start of each workday to ensure protected species are not present. Any storage containers/shed within the compound will also be secured overnight to prevent exploration by otter (and any or other mammal species). Any areas where an animal could become trapped (e.g. storage containers) will also be covered at the end of each working day, to avoid mammals falling in and becoming trapped.
- If fencing is utilised at the compound (or anywhere else), a gap of 200 mm from ground level will be provided, allowing free passage for mammals and preventing entrapment.
- Sheeting (or boarding) will be installed on the scaffolding to prevent debris escaping.
- Breakout of the defective concrete will be by mechanical equipment only e.g., no hydro-demolition.

Geology and soils

Works are restricted to areas of made-ground at Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge and works only entail minor like-for-like concrete repairs, with access to the piers gained via local roads. Scaffolding will also be erected on Pier 6 and Pier 7 concrete foundations and site compounds will be located on a hardstanding areas. As a result, the risk of damaging soil, or features of geological interest, is assessed to be temporary minor adverse in magnitude.

Upon completion of the works, no residual impacts are anticipated on geology and soils.

Material assets and waste

The scheme will require the use of materials and natural resources. However, works are limited to minor like-for-like concrete repairs therefore impacts are assessed to be negligible adverse in magnitude. Waste will also be produced as a result of the works. However, given the minimal amount of waste anticipated to be produced, the impacts on waste are assessed to be negligible adverse in magnitude.

Works are restricted to areas of made-ground at Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge therefore it is considered that there is a low risk of contamination / hazardous materials being present. However, if any contaminated land requiring remediation were encountered, it will be contained and/or removed in a safe and controlled manner to the standards required by SEPA. Any removal of potentially hazardous material is likely to constitute a net positive impact as this will remove the risk of any future contamination.

Upon completion of the works, no residual impacts are anticipated on materials or waste.

Proposed material and waste mitigation measures:

- Good materials management methods (e.g. 'just-in-time' delivery) will be implemented wherever possible.
- Care will be taken to order the correct quantity of concrete (and any other material) to prevent the disposal of unused materials.
- Bulk material will be ordered/delivered to site, without packaging where possible.
- The Contractor will comply with all 'Duty of Care' requirements, ensuring that all surplus materials and waste are stored, transported, treated, used and disposed of safely without endangering human health or harming the environment. Material transfer notes and/or waste exemption certificates (if required) will also be completed and retained.
- All material removed from Pier 6 and Pier 7 will be taken to a licensed recycling facility.
- Designated areas will be identified, within which all materials and personnel, including construction compounds, will be contained to limit environmental disturbance 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 and surface waterbodies. Stockpiled materials with leachate potential, for example, will be stored away from road drainage to prevent cross-contamination with other materials, wastes or groundwater.
- Materials will be stored with the appropriate security to prevent loss, theft or vandalism.
- The site will be monitored regularly for signs of litter and other potential contaminants and litter will be removed before and after works take place. The site will be also be left clean and tidy.
- Wastewater from welfare facilities (if required) will be subject to effluent treatment followed by tanker removal.
- If hazardous substances are used onsite, each substance will be subject to assessment under the Control of Substances Hazardous to Health (COSHH) Regulations 2002. Hazardous substances will also be clearly labelled and disposed of, in line with COSHH safety data sheets. COSHH waste must also not be mixed with general waste and/or other recyclables.

Noise and vibration

Given the nature of the works, no ground-borne vibration impacts have been forecast.

During the construction phase, activities undertaken onsite could potentially have some localised and short-term noise impacts in proximity to the works. The works will, for example, require a range of equipment, vehicles, and NRMM. Any temporary short-term increase in noise levels could cause disturbance to local wildlife. However, the works are anticipated to only take 30-days to complete (15-days at each pier), with works programmed to take place between 07:00 and 17:00. Given

the short-term duration and time of day, proximity to sensitive receptors, nature of the works, and in consideration of the mitigation below, the proposed scheme impacts on noise levels throughout the construction period are assessed to be temporary negligible adverse in magnitude.

Upon completion of the works, no residual impacts are anticipated in relation to noise.

Proposed noise mitigation measures:

- 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 equipment, (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 and 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 BEARs 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.
- The use of percussive hand-tools, 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.
- Drop heights from vehicles and NRMM will be kept to a minimum to minimise noise when unloading.
- All ancillary plant, vehicles and NRMM used onsite will have been regularly maintained, paying attention to the integrity of silencers and acoustic enclosures.
- All compressors will be 'sound-reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed when in use.
- HGV, 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.

Population and human health

Works are restricted to areas of made-ground at Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge and works do not require any private land acquisition. The works will also not affect the integrity of the current or future land use within the local area.

As such, the proposed scheme is assessed as having no impacts on residential, commercial, or community land.

Traffic Management (TM) is not required on the M90 10-11 55 Friarton Bridge, or below the bridge-deck e.g. works restricted to areas of made-ground at Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge.

The Riverside Walk Core Path (ID: 20099) will remain open and will not require a diversion during the works.

Concrete repairs may impact the local population through increased construction traffic utilising local roads to gain access Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge. However, the number of construction vehicles required onsite is low given the scale and scope of works. The number of construction operatives is also limited given the scope of works, and all work will be undertaken utilising a day-time working pattern. The presence of a small workforce, and limited construction traffic, is therefore unlikely to cause significant disturbance in vicinity of the works.

Due to the nature of the works, distance from receptors, and in consideration of the mitigation below, impacts on population and human health are assessed as temporary minor adverse in magnitude.

Upon completion of the works, no residual impacts are anticipated in relation to population and human health:

Proposed population and human health mitigation measures:

- All mitigation measures detailed within 'Air quality' and 'Noise and vibration' will be adhered to.
- Any changes of schedule (e.g. change to night-time works programme) must be communicated to local residents throughout the programme.
- Access to the Riverside Walk Core Path (ID: 20099), will be maintained at all times. If access must be restricted, then alternative provision must be provided.
- Journey planning information will be available for drivers online at the [trafficscotland.org](https://www.trafficscotland.org) website. Journey planning information will also be available for drivers online through BEARs social media platforms.

Road drainage and the water environment

While works at Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge will not result in a direct impact on the River Tay, potential indirect risk exists. A loss of containment e.g. fuel, oil, chemicals (i.e. hydraulic fluid), or concrete/cement wash could have a significant adverse environmental impact if it entered the River Tay, the severity being contingent on the substance and quantity lost. The works could also pose a risk of pollution into the River Tay from works associated with removing concrete and from sprayed concrete reinstatement works. However, all works are restricted to areas of made-ground at Pier 6 and Pier 7 (approximately 10 m from the River Tay), with vegetation acting as a buffer if an accidental loss of containment were to occur. As such, there is no direct hydrological connectivity between the scheme and the River Tay. The river will also retain its present flow characteristics.

The works are also minor in nature e.g. like-for-like concrete repairs. Ancillary plant, vehicles and NRMM will also be stored in the compound and the accidental release of pollutants is also extremely unlikely. Pollution prevention measures, for example, will be enforced onsite and Pollution Prevention Guidance (PPGs) and Guidance for Pollution Prevention (GGP) will be strictly adhered to, reducing the likelihood of a loss of containment occurring.

Considering the nature, short-term duration, size and scale of the scheme, and with implementation of the mitigation detailed below, the proposed works impacts on the road drainage and water environment are assessed as temporary minor adverse in magnitude.

Upon completion of the works, no residual impacts are anticipated in relation to the road drainage and water environment.

Proposed road drainage and water environment mitigation measures:

- No marine licensable activities will take place until the Marine Licence has been approved (submitted to Marine Scotland in June 2021). Moreover, all conditions of the Marine Licence will be adhered to.
- No work will take place within the River Tay.
- The abstraction or transfers of water, or the washing of tools in the River Tay is not permitted.
- No discharges into the River Tay (or drainage systems) will be permitted.
- The Contractor will submit a RAMS (for approval) prior to works commencing which details how pollution control measures will be managed (including how the control measures will be installed, inspected and maintained to prevent failure during the work). The Contractor will also inspect the control measures daily for movement, leakage and general deterioration and will take immediate remedial action to rectify any defects.
- The Contractor will monitor the weather forecast and flows/water levels throughout the works, and during periods of extreme weather or high flow events that threaten to 'inundate' Pier 6 or Pier 7, the works will be temporarily postponed.
- The Contractor will develop an Incident (Emergency) Response Plan (IRP) which describes the procedures, lines of authority and processes that will be followed to ensure that incident response efforts are prompt, efficient, and suitable for particular circumstances. The IRP will detail the procedures to be undertaken in the event of the release of any sediment into the River Tay, serious spillage of chemical, fuel or other hazardous wastes (e.g. concrete), non-compliance incident with any permit or license, or other such risks that could lead to a pollution incident, including flood risks.
- All conditions of SEPA's General Binding Rules (GBRs) for good practice measures for working in or near water will be followed. In particular, GBR9: operating any vehicle, plant or other equipment (machinery) in or near any surface water or wetland for the purpose of undertaking any other GBR activity or

for the purpose of maintaining an existing man-made structure in or near any surface water or wetland.

- Sheeting or boarding will be present on the scaffolding to prevent debris falling down.
- Breakout of the defective concrete will be by mechanical equipment only e.g., no hydro-demolition.
- Concrete batching (if required) will be undertaken on an impermeable surface, and a minimum of 10 m from the River Tay and drainage systems.
- 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 Site Supervisor. 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 or other authorities. However, all such incidents must to be recorded and reported to BEAR Scotland's Environmental Team. In the event of a 'serious incident', SEPA 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.
- All waste, vehicles, ancillary plant, NRMM and fuels will be stored in the compound(s) or laydown area and will be secured and located, if space is available, at least 10 m from drainage entry points and the River Tay, 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 the River Tay, where practicable). Spill kits will also be available within all site vehicles and spill kits will be replenished onsite when required. Only designated trained and competent operatives will be authorised 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 must 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 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. Any vehicles, ancillary plant, and NRMM not in operation will (where possible) be sited in the laydown area.
- Regular visual pollution inspections of the designated laydown area and work site will be conducted (e.g. site walkover by engineer or Site Supervisor), especially during periods of heavy rain.
- All vehicles and NRMM 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.
- When the works are complete, but before pollution control measures are removed, the Contractor will ensure that all materials, debris, tools, plant and equipment are removed from the work area. The Contractor will also check the

area thoroughly for spillages or potential pollution sources and remove or clean-up anything found.

Climate

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. Works to refurbish Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge will also extend the maintenance intervals required for future works. In doing so, the service life of the structure is also extended.

During works there is potential for impacts as a result of the emission of greenhouse gases through the use of equipment, vehicles, and NRMM, material use and production, and transportation of material/waste. However, considering the nature, short-term duration, size and scale of the scheme, and the mitigation detailed below, the risk of significant impacts to climate are considered to be negligible adverse in magnitude.

Upon completion of the proposed scheme no residual impacts are anticipated on the climate.

Proposed climate mitigation measures:

- All mitigation measures detailed within 'Air Quality' and 'Material Assets and Waste' will be adhered to.
- The works will be undertaken utilising a day-time work pattern (07:00 – 17:00) and there is no requirement for additional lighting. 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.
- BEAR Scotland will adhere to its Carbon Management Policy.
- Where possible, materials will be sourced locally to reduce greenhouse gas emissions associated with materials movement, and waste will be disposed at local landfill.

Vulnerability of the Project to Major Accidents and Disasters

SEPA records indicate that the River Tay and its banks have a high risk of fluvial flooding (10% AEP, 10-year flood event). However, the SEPA flood map is a 'predictive' model which show areas forecast to be inundated during a theoretical or 'design' flood event with an estimated probability of occurrence, rather than information for actual floods that have occurred in the past. Communication with BEAR Scotland's Bridge Team has established that there are no records of the River Tay having inundated Pier 6 or Pier 7. As such, the impact of flooding on the works have been assessed to be of negligible magnitude. The likelihood of any risks from

flooding will also be minimised by ensuring works do not take place during an extreme weather or high flow event that threatens to 'inundate' Pier 6 or Pier 7.

Works are restricted to areas of made-ground at Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge, with access to the piers gained via local roads. As such, the proposed works impacts on road traffic accidents is assessed to be of negligible magnitude.

A SEMP will be produced by BEAR Scotland which sets out a framework to reduce the risk of adverse impacts from construction activities on sensitive environmental receptors. The Contractor will comply with all conditions of the SEMP during works and may be subject to audit throughout the contract. A Designer's Risk Register will also be prepared by BEAR Scotland, which addresses potential environmental risks. A Method Statement will also be produced by the Contractor and will recognise and highlight the environmental risks and detail how these will be addressed, as well as contingency plans to deal with environmental incidents. The Contractor will submit the RAMS (for approval) prior to works commencing. As such, the proposed works impacts on the vulnerability of the project to environmental risk is considered to temporary minor adverse in magnitude.

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

Assessment cumulative effects

There are no anticipated 'in-combination' effects based on the information currently available. Discussion with BEAR Design Teams, for example, established that there are no projects confirmed that may result in an 'in-combination' effect.

A search using [Perth & Kinross Council 'Simple Search'](#) identified that there are two planning applications within 300 m of the scheme.

Planning applications within 300m of Pier 6 and Pier 7

Perth and Kinross Council

- Mixed use development comprising museum (including ancillary shop and café), hotel and holiday lodge accommodation (including ancillary shop and café functions), complementary retail and associated access, parking, public realm, open space and landscaping works (in principle) (LDP site RT1). Awaiting decision.
- S42 Application to modify condition 3 (temporary permission) of permission 18/02149/FLL. Awaiting decision.

Due to the early stages of these planning applications, and the minor works being undertaken by BEAR, there will be no 'in-combination' effect.

Assessments of the environmental effects

As detailed in Description of Main Environmental Impacts and Proposed Mitigation section, there are no significant effects on any environmental receptors as a result of the proposed scheme. An HRA Stage 1 Screening has been prepared and submitted to NatureScot for the proposed works which has concluded that no LSEs are anticipated on the River Tay SAC. As no LSEs were identified, no Appropriate Assessment (AA) is required.

The concrete repair works will also be undertaken within the boundary of the River Tay MHWS. As such, a Marine Licence is required under Part 4 of the Marine (Scotland) Act 2010 and Part 4 of the Marine and Coastal Access Act 2009. A Marine Licence application was therefore submitted to Marine Scotland in June 2021 and was issued in March 2022. All conditions of the Marine Licence will be adhered to.

No further assessment of environmental effects or consultation with statutory bodies is required.

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

This is a relevant project in terms of section 55A(16) of the Roads (Scotland) Act 1984 as it is a project for the improvement of a road and the completed works (together with any area occupied by apparatus, equipment, machinery, materials, plant, spoil heaps, or other such facilities or stores required during the period of construction) are situated in whole, or in part, in the River Tay 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 is required under the Roads (Scotland) Act 1984 (as amended by The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017). Screening using Annex III criteria, reference to consultations undertaken and review of available information has not identified the need for a statutory EIA.

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

Characteristics of the scheme:

- The total working area is less than 1 ha.
- Works are limited to concrete repairs on Pier 6 and Pier 7 and works will be delivered on a 'like-for-like' basis.

- Where possible, materials will be derived from recycled, secondary or re-used origin within design specifications.
- Works are anticipated to only take 30-days to complete (15-days at each pier), with works programmed to take place between 07:00 and 17:00.
- The working areas will be contained to Pier 6 and Pier 7 on the M90 10-11 55 Friarton Bridge, and no works are required within the River Tay.
- Concrete repair works will protect against future deterioration of the structure, thus minimising the extent of future works required on the M90 10-11 55 Friarton Bridge.

Location of the scheme:

- The scheme does not lie within any sites of historical, cultural or archaeological significance.
- The scheme is not located within any areas designated for landscape interests.
- Land use will not change as a result of the works.
- The works do not require any private land acquisition.
- Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge lie approximately 10 m from the from River Tay, which forms part of the River Tay SAC.
- The scheme does not lie within any sites designated for their geology or soils.
- The scheme is not located within a densely populated area.

Characteristics of potential impacts of the scheme:

- A Marine Licence application has been submitted to Marine Scotland (June 2021) and was issued in March 2022.
- An HRA Stage 1 Screening has shown that there is sufficient information and assessment evidence to conclude that the proposed scheme will not cause a LSE on the River Tay SAC, either alone or in-combination with other projects and plans. Therefore, no further stages of HRA are considered necessary for this scheme.
- 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.
- There will be no impact on NMUs.
- There will be limited consumption of materials and natural resources, and limited waste or generation associated with the works. Measures will also be in place to ensure appropriate removal and disposal of waste.
- As the works are limited to concrete repairs on Pier 6 and Pier 7 of the M90 10-11 55 Friarton Bridge, there is no change to the vulnerability of the 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.

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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