

Amey

Habitats Regulations Stage 1 Screening Appraisal

**M90 9-10 Bridge of Earn
24-NE-1201-26 / 01**

December 2024

Document Control Sheet

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First Issue	Name: Gina Bertolacci Signature: [Redacted] Date: 10/12/2024	Name: Gavin Boyd Signature: [Redacted] Date: 17/12/2024	Name: Melanie Roxburgh Signature: [Redacted] Date: 18/12/2024

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1. HRA Screening Matrix

The following table sets out the HRA Screening Matrix in accordance with LA115. Supporting information if provided in the Appendices.

Table 1 - Habitat Regulations Appraisal Screening Matrix

Project:		M90 9-10 Bridge of Earn
European Site under consideration:		River Tay Special Area of Conservation (SAC) – NatureScot Site Code: 8366 / EU Code: UK0030312 Firth of Tay and Eden Estuary SAC, Special Protection Area (SPA), and Ramsar – NatureScot Site Codes: 8257, 8501, and 8425 respectively. EU Codes: UK0030311, UK9004121 and UK13018
Date:	Author (Name/Organisation):	Verified (Name/Organisation):
10/12/2024	Amey Assistant Ecologist: Gina Bertolacci MSc	Amey Principal Ecologist, Melanie Roxburgh CEnv
Description of project		
Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the European Site by virtue of:		
Size and scale (road type and probable traffic volume)	<p>The Earn Bridge is a three span, box girder and composite R.C. deck structure constructed in 1979. The main span is supported by two main reinforced concrete piers at each end. The bridge carries the M90 over the River Earn (tidal section) approximately 2.5 miles south of Perth.</p> <p>There are defects in the waterproofing and drainage systems which are causing delamination and spalls exposing corroded rebars on the soffit of the concrete deck and cantilever which require repairs. Progress of the corroding will impact the structure safety. Existing parapet might not meet current standards, and the replacement might be required to preserve road users safety.</p> <p>The proposed works are located on the Earn Bridge outside Bridge of Earn, Perth and Kinross (NGR: NO 13750 18350).</p> <p>The Annual Average Daily Flow (AADF) in 2023 for the M90 carriageway within the proposed scheme extents (estimated count point: 40813), accounted for 35,604 vehicles, with 3,270 of these being Heavy Goods Vehicles (HGVs).</p>	
Land-take	No land take will be required, with all proposed works limited to the existing M90 carriageway and bridge deck.	

<p>Distance from the European Site or key features of the site (from edge of the project assessment corridor)</p>	<p>The proposed works are located 3.25km south of the River Tay SAC at their closest point, however there is direct hydrological connectivity as the River Earn flows directly under the proposed works into the River Tay SAC 10km downstream.</p> <p>Where the River Earn joins the River Tay 10km downstream of the proposed works is where the Firth of Tay and Eden Estuary SAC, SPA, and Ramsar are located. Therefore, there is direct hydrological connectivity between the proposed works and the Firth of Tay and Eden Estuary SAC, SPA, and Ramsar.</p>
<p>Resource requirements (from the European Site or from areas in proximity to the site, where of relevance to consideration of impacts)</p>	<p>None.</p>
<p>Emissions (e.g. polluted surface water runoff – both soluble and insoluble pollutants, atmospheric pollution)</p>	<p>The proposed works activities carry the potential to produce airborne particulate matter and generate emissions that may have a temporary impact on local air quality levels.</p> <p>Water pollution is also possible during construction. This may include the potential mobilisation of pollutants arising from the construction phase of the proposed works that could enter the surrounding carriage drainage system and River Earn which is directly connected downstream to the River Tay SAC and Firth of Tay and Eden Estuary SAC, SPA, and Ramsar.</p>
<p>Excavation requirements (e.g. impacts of local hydrogeology)</p>	<p>Minor excavations will be required for the road resurfacing, drainage gully replacement, and concrete works to the parapet beam and abutment walls. However, these are minor and confined to the existing carriageway and bridge deck boundary therefore there will be no impacts on the surrounding habitats or local hydrogeology.</p>
<p>Transportation requirements</p>	<p>Temporary traffic management (TM) arrangements will be in place which are likely to involve overnight lane closures Monday to Sunday 19:30-06:30 with day works on Sunday. This will include plant machinery such as pavers and wagons and chapter 8 cars.</p>
<p>Duration of construction, operation, etc.</p>	<p>The proposed works are scheduled to commence in April 2025 under the following time restrictions:</p> <p>Appendix 1/17-time restrictions under Schedule 5 of the Network Management Contract (NMC) apply so no works can take place within times below:</p> <ul style="list-style-type: none"> • 06:30 to 09:30 and 15:30 to 19:30 Mon-Thu, • 12:30 to 19:30 Friday • 12:00 to 19:30 Saturday <p>Proposed works are therefore likely to be undertaken as nightworks – Monday to Sunday 19.30-06.30 and dayworks on Sundays.</p>

Other	N/A
Description of avoidance and/or mitigation measures	
Describe any assumed (plainly established and uncontroversial) mitigation measures, including information on:	
Nature of proposals	Standard industry best practice measures are considered sufficient to reduce the effects of the proposed works. These are set out in Appendix A in full and in scheme specific Environmental Scoping Assessment.
Location	Industry standard best practice will be at the point of works.
Evidence for effectiveness	The standard measures follow recognised industry guidance, as set out in Appendix A and in scheme specific Environmental Scoping Assessment.
Mechanism for delivery (legal conditions, restrictions or other legally enforceable obligations)	None.
Characteristics of European Site(s)	
A brief description of the European Site to be produced, including information on:	
Name of European Site and its EU code	<p>River Tay SAC – NatureScot Site Code: 8366 / EU Code: UK0030312</p> <p>Firth of Tay and Eden Estuary SAC, SPA, and Ramsar – NatureScot Site Codes: 8257, 8501, and 8425 respectively. EU Codes: UK0030311, UK9004121 and UK13018</p>
European Site size	<p>River Tay SAC - 9461.63 ha</p> <p>Firth of Tay and Eden Estuary SAC - 15441.63 ha</p> <p>Firth of Tay and Eden Estuary SPA - 6947.62 ha</p> <p>Firth of Tay and Eden Estuary Ramsar - 6947.62 ha</p>
Key features of the European Site including the primary reasons for selection and any other qualifying interests	<p><u>River Tay SAC</u></p> <ul style="list-style-type: none"> • Atlantic salmon (<i>Salmo salar</i>) – Favourable maintained (as of 2011) • Brook lamprey (<i>Lampetra planeri</i>) – Favourable maintained (as of 2007) • River lamprey (<i>Lampetra fluviatilis</i>) - Favourable maintained (as of 2007) • Sea lamprey (<i>Petromyzon marinus</i>) – Favourable maintained (as of 2007)

- Eurasian otter (*Lutra lutra*) – Favourable maintained (as of 2012)
- Clear water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels – Favourable maintained (as of 2009)

Firth of Tay and Eden Estuary SAC

- Estuaries – Not assessed
- Harbour seal (*Phoca vitulina*) – unfavourable declining (as of 2021)
- Intertidal mudflats and sandflats – favourable maintained (as of 2002)
- Subtidal sandbanks – favourable maintained (as of 2002)

Firth of Tay and Eden Estuary SPA and Ramsar

- Bar-tailed godwit (*Limosa lapponica*) – non-breeding
- Common scoter (*Melanitta nigra*) – non-breeding
- Cormorant (*Phalacrocorax carbo*) – non-breeding
- Dunlin (*Calidris alpina alpina*) – non-breeding
- Eider (*Somateria mollissima*) – non-breeding
- Goldeneye (*Bucephala clangula*) – non-breeding
- Goosander (*Mergus merganser*) – non-breeding
- Grey plover (*Pluvialis squatarola*) – non-breeding
- Greylag goose (*Anser anser*) – non-breeding
- Icelandic black-tailed godwit (*Limosa limosa islandica*) – non-breeding
- Little tern (*Sternula albifrons*), breeding
- Long-tailed duck (*Clangula hyemalis*) – non-breeding
- Marsh harrier (*Circus aeruginosus*) – non-breeding
- Oystercatcher (*Haematopus ostralegus*) – non-breeding
- Pink footed goose (*Anser brachyrhynchus*) – non-breeding
- Red-breasted merganser (*Mergus serrator*) – non-breeding
- Redshank (*Tringa totanus*) – non-breeding
- Sanderling (*Calidris alba*) – non-breeding

	<ul style="list-style-type: none"> • Shelduck (<i>Tadorna tadorna</i>) – non-breeding • Velvet scoter (<i>Melanitta fusca</i>) – non-breeding • Waterfowl assemblage – non-breeding
<p>Vulnerability of the European Site – any information available from the standard data forms on potential effect pathways</p>	<p>The standard data forms for the designated sites list the following potential effect pathways and ranks their corresponding vulnerability to these pathways.</p> <p><u>River Tay SAC</u></p> <p>Low</p> <ul style="list-style-type: none"> • B02 - Forest and Plantation management & use • A04 - Grazing • A02 - Modification of cultivation practices • E01 - Urbanised areas, human habitation • A06 - Annual and perennial non-timber crops <p>Medium</p> <ul style="list-style-type: none"> • F02 - Fishing and harvesting aquatic resources • D01 - Roads, paths and railroads • H04 - Air pollution, air-borne pollutants • C03 - Renewable abiotic energy use • F01 - Marine and Freshwater Aquaculture • D02 - Utility and service lines • K01 - Abiotic (slow) natural processes • K03 - Interspecific faunal relations • A07 - Use of biocides, hormones and chemicals • F03 - Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.) • I03 - Introduced genetic material, GMO • M02 - Changes in biotic conditions • C01 - Mining and quarrying • H03 - Marine water pollution • M01 - Changes in abiotic conditions

	<p>High</p> <ul style="list-style-type: none"> • H01 - Pollution to surface waters (limnic & terrestrial, marine & brackish) • I01 - Invasive non-native species • E03 - Discharges • J02 - Human induced changes in hydraulic conditions • J03 - Other ecosystem modifications <p><u>Firth of Tay and Eden Estuary SAC</u></p> <p>Low</p> <ul style="list-style-type: none"> • C01 - Mining and quarrying • M02 - Changes in biotic conditions • G04 - Military use and civil unrest • G01 - Outdoor sports and leisure activities, recreational activities • D02 - Utility and service lines • G02 - Sport and leisure structures • M01 - Changes in abiotic conditions <p>Medium</p> <ul style="list-style-type: none"> • H06 - Excess energy • H01 - Pollution to surface waters (limnic & terrestrial, marine & brackish) • D03 - Shipping lanes, ports, marine constructions • E01 - Urbanised areas, human habitation • C02 - Exploration and extraction of oil or gas • K01 - Abiotic (slow) natural processes • K02 - Biocenotic evolution, succession • K03 - Interspecific faunal relations • I03 - Introduced genetic material, GMO • E03 - Discharges • E02 - Industrial or commercial areas • K04 - Interspecific floral relations • J02 - Human induced changes in hydraulic conditions <p>High</p>
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- F01 - Marine and Freshwater Aquaculture
- I01 - Invasive non-native species
- F02 - Fishing and harvesting aquatic resources
- H03 - Marine water pollution
- G05 - Other human intrusions and disturbances

Firth of Tay and Eden Estuary SPA and Ramsar

Low

- C03 - Renewable abiotic energy use
- J02 - Human induced changes in hydraulic conditions
- A01 - Cultivation
- F01 - Marine and Freshwater Aquaculture
- H03 - Marine water pollution

Medium

- F02 - Fishing and harvesting aquatic resources
- H07 - Other forms of pollution
- M01 - Changes in abiotic conditions
- H01 - Pollution to surface waters (limnic & terrestrial, marine & brackish)
- I01 - Invasive non-native species

High

- F03 - Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)
- M02 - Changes in biotic conditions
- G01 - Outdoor sports and leisure activities, recreational activities
- K03 - Interspecific faunal relations
- J03 - Other ecosystem modifications

<p>European Site conservation objectives – where these are readily available</p>	<p><u>River Tay SAC</u></p> <p>To ensure that the qualifying features of River Tay SAC are in favourable condition and make an appropriate contribution to achieving favourable conservation status.</p> <p>To ensure that the integrity of the River Tay is maintained by meeting objectives 2a, 2b and 2c for each qualifying feature.</p> <p>2a. Maintain the population of the lamprey species’ as viable components of the site</p> <p>2b. Maintain the distribution of the lamprey species’ throughout the site</p> <p>2c. Maintain the habitats supporting the lamprey species’ within the site, and availability of food</p> <p>Repeated for each designated species.</p> <p><u>Firth of Tay and Eden Estuary SAC</u></p> <p>1. To ensure that the qualifying features of Firth of Tay and Eden Estuary SAC are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status.</p> <p>2.To ensure that the integrity of Firth of Tay and Eden Estuary SAC is maintained in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature:</p> <p>Estuaries, intertidal mudflat and sandflats, subtidal sandbanks:</p> <p>2a. Extent and distribution of the habitat within the site.</p> <p>2b. Structure and function of the habitat and the supporting environment on which it relies.</p> <p>2c. Distribution and viability of typical species of the habitat.</p> <p>Harbour seal:</p> <p>2a. Harbour seal within the Firth of Tay and Eden Estuary SAC are not at significant risk from injury or mortality.</p> <p>2b. The distribution of harbour seal throughout the site is maintained by avoiding significant disturbance.</p> <p>2c. The supporting habitats and processes relevant to harbour seal are maintained.</p> <p><u>Firth of Tay and Eden Estuary SPA and Ramsar</u></p> <p>To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and</p>
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	<p>To ensure for the qualifying species that the following are maintained in the long term:</p> <ul style="list-style-type: none"> • Population of the species as a viable component of the site • Distribution of the species within site • Distribution and extent of habitats supporting the species • Structure, function and supporting processes of habitats supporting the species • No significant disturbance of the species
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Assessment criteria

Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the European Site.

Earn Bridge is a three span, box girder and composite R.C. deck structure constructed in 1979. The main span is supported by two main reinforced concrete piers at each end. The bridge carries the M90 over the River Earn (tidal section) approximately 2.5 miles south of Perth.

There are defects in the waterproofing and drainage systems which are causing delamination and spalls exposing corroded rebars on the soffit of the concrete deck and cantilever which require repairs. Progress of the corroding will impact the structure safety. Existing parapet might not meet current standards, and the replacement might be required to preserve road users safety.

Proposed works at the structure include:

- Replacing the waterproofing on the bridge deck
- Resurfacing
- Replacing gullies and drainage system
- Concrete works to the parapet beam and to the abutment walls
- Replacing the parapet (new TSIA 25 assessment to be carried to confirm the parapet replacement requirement)

Plant that may be used to construct the proposed works includes:

- Excavators
- Milling machines
- Asphalt pavers
- Tipper trucks
- Drum rollers
- Road planers
- Lifters

The proposed works are localised and confined to the existing highways boundaries. As such, the potential impacts of the proposed scheme on the designated site will be short term and restricted to the construction phase. There will be a negligible change from baseline during operation.

The noise and vibration assessment states:

Baseline noise levels surrounding scheme extents is likely to be influenced by high traffic flow along the M90 trunk road, agricultural, residential and rail activities. The Annual Average Daily Flow (AADF) in 2023 for the M90 carriageway within the proposed scheme extents (estimated count point: 40813), accounted for 35,604 vehicles, with 3,270 of these being Heavy Goods Vehicles (HGVs)¹.

There are six noise sensitive receptors (NSRs) located within 300m, all of which are residential receptors located to the southwest of the bridge. The closest is located 150m southwest at NO 13616 18200.

Scotland's Noise Map records day-evening-night levels (Lden) on the bridge at >65 to 70dB, with levels just north and south of the bridge along the M90 modelled at > 75 to 80dB. Modelled night levels (Lnight) for the same area are >60 to 65dB.

The works, and proposed diversion route do not fall within a Candidate Noise Management Area (CNMA), as defined by the Transportation Noise Action Plan (Road Maps) Transportation Noise Action Plan (TNAP).

Construction activities associated with the proposed works including resurfacing, concrete repairs etc. have the potential to cause noise and vibration impacts through the use of machinery and construction vehicles. This potential disturbance will likely impact NSRs surrounding scheme extents, and those along the proposed diversion route, likely increasing noise levels from ambient levels.

The works will take place during both day and night-time working hours, and this may potentially increase noise levels from ambient night levels.

A letter drop will be delivered to residents within 300m to notify them of upcoming works, TM arrangements timings and duration.

Perth & Kinross Council's Environmental Health Team have been contacted to notify of night-time programming no further comments or mitigations.

Amey's Noise and Vibration environmental briefing will be delivered to all site operatives before works start.

The biodiversity assessment states:

The M90 carriageway within the proposed scheme extents contains a small area of mixed plantation woodland that is surrounded by agricultural land and the River Earn passes directly under the M90 within the scheme extents.

The proposed works are located 3.25km south of the River Tay SAC overland at their closest point, however there is direct hydrological connectivity from the River Earn directly under the proposed works to the very end of the River Tay SAC 10km downstream of the proposed works. There is also direct downstream hydrological connectivity between the proposed works and the Firth of Tay and Eden Estuary SAC, SPA, and RAMSAR.

NBN Atlas highlights the following protected species records within 2km of the proposed works;

- Beaver (*Castor fiber*)
- Eurasian badger (*Meles meles*)
- Eurasian otter (*Lutra lutra*)
- Eurasian red squirrel (*Sciurus vulgaris*)
- Pine marten (*Martes martes*)

¹ Road traffic statistics - Manual count point: 40813 (accessed 10/12/2024)

In addition to 94 bird species, including kingfisher (*Alceio atthis*) which is listed under Schedule 1 of The Wildlife and Countryside Act 1981². The Amey Environment NE NMC Species Road Casualty Map (August 2022 – Present) did not highlight any protected species roadkill records within 500m of the proposed works³.

NBN Atlas also highlighted the following invasive non native species within 2km of the proposed works;

- Eastern grey squirrel (*Sciurus carolinensis*)
- Giant hogweed (*Heracleum mantegazzianum*) – closest recorded stand within 400m of the proposed works
- Japanese knotweed (*Fallopia japonica*) – closest recorded stand within 1km of the proposed works
- Himalayan balsam (*Impatiens glandulifera*) – closest recorded stand within 50m of the proposed works

A preliminary ecological walkover was carried out by Amey qualified ecologists on 10th December 2024 to determine the requirement for additional surveys or methods statements.

One stand of giant hogweed was identified on the southwestern banks of the river earn located approximately 23m from the proposed works (NGR: NO 13718 18319). One stand of rhododendron (*Rhododendron ponticum*) was located on the northwestern bank 12m from the proposed works (NGR: NO 13716 18394).

No potential otter holts or spraint were identified within 30m of the proposed works are, however one potential otter footprint was identified on the riverbank underneath the overbridge.

A potential badger footprint was identified on the riverbank underneath the overbridge. No other badger field signs were identified on site or within 30m of the proposed works.

On the condition that best practice measures are adhered to, the residual significance of effect on local biodiversity is determined to be neutral. No further assessment is required.

The geology and soils assessment states:

The scheme does not lie within or have connectivity to any Geological Conservation Review Sites (GCRs), geological SSSIs, or Local Geodiversity Sites (LGS)⁴.

The local soil type to the north and south of the bridge is record as alluvial soils⁵.

Bedrock geology beneath the bridge to the north and south is comprised of sedimentary bedrock of the Glenvale Sandstone Formation (sandstone) formed between 382.7 and 358.8 million years ago (Mya) during the Devonian period⁶.

Superficial deposits to the north and south of the bridge is comprised of sedimentary superficial deposits of alluvium (clay, silt, sand and gravel) formed between 11.8 thousand years ago and the present during the Quaternary period.

Works will be restricted to the existing bridge structure, with no earthworks required as part of the scheme, and as such are not anticipated to result in change to or have an adverse impact on geology and soils.

If required, upon completion of the works, any damage to the local landscape will be reinstated as much as is practicable.

With mitigation measures in place there is no significant impact anticipated to geology and soils. Therefore, in accordance with DMRB Guidance document LA 109: Geology and Soils no further assessment is required.

² Wildlife and Countryside Act 1981 (accessed 10/12/2024)

³ North East Environmental Data - Google My Maps (accessed 10/12/2024)

⁴ SiteLink - Map Search (accessed 17/12/2024)

⁵ Scotland's Soils - soil maps (accessed 17/12/2024)

⁶ BGS Geology Viewer - British Geological Survey (accessed 17/12/2024)

The road drainage and the water environment assessment states:

SEPA's Water Classification Hub⁷ has identified River Earn (site ID: 6800) flowing beneath the M90 carriageway within the proposed works extents as being in 'good' condition⁸. The River Earn then flows into the Upper Tay estuary (site ID: 200439) which is also classified as being in 'good' condition. There is also an unnamed pond located 200m northeast of the proposed works area.

SEPA's Flood Map⁹ has indicated that a minor section of the M90 carriageway directly south of the proposed works on Earn Bridge is at a 'High' (approx. 10% each year) risk of surface water flooding as well as the vegetated banks on each side of the river within the proposed works area and up to the unnamed pond.

The M90 carriageway within the proposed scheme extents is drained via verge-side gully filter drainage.

The M90 carriageway within the proposed scheme extents is not contained within a Scottish Government Nitrate Vulnerable Zone (NVZ)¹⁰.

Providing all works operate in accordance with site control measures and SEPA's Guidance for Pollution Prevention (GPPs), no significant effect on the water environment is predicted. No further assessment required.

The air quality assessment states:

Baseline air quality surrounding the scheme extents is likely to be influenced by traffic flow along the M90 trunk road. Secondary sources are likely from rail, agricultural, residential and rail activities. The Annual Average Daily Flow (AADF) in 2023 along the M90 1.1km north of the bridge (Site number: 40813) was counted at 35,604 total vehicles with 3,270 (9.2%) HGVs.

Perth & Kinross Council have declared two Air Quality Management Areas (AQMAs):

- Perth AQMA: declared for Particulate Matter of a diameter less than 10 micrometres (PM₁₀) and Nitrogen Dioxide (NO₂) located 2.6km north.
- Perth No. 2 - Crieff AQMA: declared for PM₁₀ and NO₂, located 27km west.

There are two residential properties located within 200m of the bridge, the closest located 150m southeast at NO 13616 18200. Residential properties are located below the level of the bridge and set-back at 150-200m from the scheme location and screened by tree shelterbelts (private property and roadside screening).

No non-residential air quality sensitive receptors have been identified within 200m of the proposed scheme extents.

Construction activities associated with the proposed works may temporarily impact local air quality:

- Works may emit dust and particulate matter into the atmosphere, including carriageway milling and concrete repairs.
- There will be increased and prolonged vehicle, plant and non-road mobile machinery (NRMM) presence over the six-week construction period.
- TM / diversion routes will likely cause delays, increased congestion and increased traffic emissions.

However, given the nature and scale of the works and the following mitigation measures, the risk of significant impacts on air quality is considered low, and will only last for the duration of the works.

At the operational stage there will be no change to traffic flow characteristics (e.g. traffic composition, speed or flows).

⁷ <https://www.sepa.org.uk/data-visualisation/water-classification-hub/> (accessed 23/10/2024)

⁸ Water Classification Hub (accessed 10/12/2024)

⁹ SEPA Flood Maps (arccgis.com) (accessed 23/10/2024)

¹⁰ Nitrate Vulnerable Zones: maps - gov.scot (www.gov.scot) (accessed 23/10/2024)

Initial Assessment	
The key characteristics of the site and the details of the European Site to be considered in identifying potential impacts. Describe any likely changes to the site arising as a result of:	
Reduction of habitat area	There will be no temporary or permanent land take associated with the proposed works. The works will be limited to the existing M90 carriageway bounds and bridge deck.
Disturbance to key species	<p>The protected habitats of the designated sites (i.e. clear water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels, Intertidal mudflats and sandflats, subtidal sandbanks, and estuaries) will not be directly impacted by the proposed works as they are not located within the proposed works extents. There is the potential for indirect impacts on these protected habitats via the introduction of pollution to the River Earn which is hydrologically connected (after 10km to these habitats) but this will be mitigated against using standard pollution prevention measures.</p> <p>Similarly, the protected species of the designated sites (i.e. Atlantic salmon, brook lamprey, river lamprey, sea lamprey, harbour seals, otter, and multiple sea bird species) will not be directly impacted by the proposed works as they are not located within the proposed works extents. There is the potential for indirect impacts on these protected species via the introduction of pollution to the River Earn which is hydrologically connected (after 10km to the area these species are designated for) but this will be mitigated against using standard pollution prevention measures.</p>
Habitat or species fragmentation	The proposed works will not lead to increased habitat or species fragmentation as they are being undertaken entirely within the existing M90 carriageway.
Reduction in species density	The works will not reduce species density as they will be undertaken entirely within the existing M90 carriageway.
Changes in key indicators of conservation value (water quality, etc)	Potential minor and temporary changes in water quality or air quality will be mitigated by standard measures as part of the proposed works, detailed in the scheme specific Environmental Assessment Report. As a result, there will be no change in key indicators of conservation value.
Climate change	The works will not impact climate change in any significant way.
Describe any likely impacts on the European Site as a whole in terms of	
Interference with the key relationships that define the structure of the site	No interference with the key relationships that define the structure of the designated sites is anticipated.
Interference with key relationships that define the function of the site	No interference with the key relationships that define the function of the designated sites is anticipated.
Indicate the significance as a result of the identification of impacts set out above in terms of:	

Reduction of habitat area	<p>The proposed works will not result in any reduction of habitat within the River Tay SAC or Firth of Tay and Eden Estuary SAC, SPA, and RAMSAR as they are restricted to the existing carriageway which is not within the designated sites boundary. The River Tay SAC is located 3.25km north of the proposed works overland at their closest point, and the very end of the River Tay SAC Firth of Tay and Eden Estuary SAC, SPA, and RAMSAR are located 10km downstream of the proposed works location. No likely significant effects (LSE) predicted.</p>
Disturbance to key species	<p>The proposed works are unlikely to result in any significant disturbance to the protected habitat due to the works being restricted to the existing carriageway. As a result, noise, visual or vibrational disturbance will not be significant. Water and air pollution risks will be appropriately mitigated by standard pollution and noise controls.</p> <p>The proposed works are unlikely to result in any significant disturbance to the protected species of the designated sites due to the works being restricted to the existing carriageway and the distance of the proposed works from the designated sites (10km hydrologically, and 3.25km overland to the River Tay SAC). As a result, noise, visual or vibrational disturbance will not be significant. Water and air pollution risks will be appropriately mitigated by standard pollution and noise controls.</p> <p>Furthermore, artificial lighting will be directional and spillover to sensitive habitats will be avoided. No LSE predicted.</p>
Habitat or species fragmentation	<p>There will be no fragmentation of habitats comprising the designated sites and no fragmentation of the qualifying species as they will be undertaken entirely within the existing M90 carriageway bounds and not within the habitats of the designated sites.</p> <p>No LSE predicted.</p>
Loss	<p>There will be no loss of European sites. No LSE predicted.</p>
Disruption	<p>Noise and vibrations caused by the proposed works are unlikely to be significantly higher than the baseline caused by the normal traffic levels. Therefore, due to this and the distance between the proposed works and the designated sites disruption to the designated sites and their qualifying features is not anticipated. No LSE predicted.</p>
Change to key elements of the site (e.g. water quality, hydrological regime etc.)	<p>The proposed works will not impact key elements of the designated sites once standard pollution and noise controls are in place and are unlikely to cause significant impacts due to the relatively localised nature of the works and physical separation from the designated sites and its qualifying interests. Pollution controls will be implemented as standard to minimise the risk of pollution on watercourses, regardless of their European designation. No LSE predicted.</p>
<p>Describe from the above those elements of the project, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known</p>	
<p>No LSE predicted</p>	
Outcome of screening stage	<p><input type="checkbox"/> Likely Significant Effects Identified</p> <p><input type="checkbox"/> Sufficient Uncertainty Remains</p>

	<input checked="" type="checkbox"/> No Likely Significant Effects Identified
Are the appropriate statutory environmental bodies in agreement with this conclusion (delete as appropriate and attach relevant correspondence).	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

2. Finding of No Significant Effects

Table 2 - Finding of No Significant Effects

Project	M90 9-10 Bridge of Earn	
European Site under consideration	River Tay SAC – NatureScot Site Code: 8366 / EU Code: UK0030312 Firth of Tay and Eden Estuary SAC, SPA, and Ramsar – NatureScot Site Codes: 8257, 8501, and 8425 respectively. EU Codes: UK0030311, UK9004121 and UK13018	
Date:	Author (Name/Organisation):	Verified (Name/Organisation):
11/12/2024	Amey Assistant Ecologist: Gina Bertolacci MSC	Amey Principal Ecologist, Melanie Roxburgh CEnv
Name and location of European Site:	River Tay SAC – Perth and Kinross Firth of Tay and Eden Estuary SAC, SPA, and Ramsar – Perth and Kinross	
Description of the project	<p>Earn Bridge is a three span, box girder and composite R.C. deck structure constructed in 1979. The main span is supported by two main reinforced concrete piers at each end. The bridge carries the M90 over the River Earn (tidal section) approximately 2.5 miles south of Perth.</p> <p>There are defects in the waterproofing and drainage systems which are causing delamination and spalls exposing corroded rebars on the soffit of the concrete deck and cantilever which require repairs. Progress of the corroding will impact the structure safety.</p> <p>Existing parapet might not meet current standards and the replacement might be required to preserve road users safety.</p> <p>Proposed works at the structure include:</p> <ul style="list-style-type: none"> • Replacing the waterproofing on the bridge deck • Resurfacing • Replacing gullies and drainage system • Concrete works to the parapet beam and to the abutment walls • Replacing the parapet (new TSIA 25 assessment to be carried to confirm the parapet replacement requirement) <p>Plant that may be used to construct the proposed works includes:</p> <ul style="list-style-type: none"> • Excavators. • Milling machines. • Asphalt pavers. • Tipper trucks. 	

	<ul style="list-style-type: none"> • Drum rollers. • Road planers. • Lifters
Is the project directly connected with or necessary to the management of the site (provide details)?	No.
Are there other projects or plans that together with the project being assessed could affect the site (provide details)?	No
The assessment of significance of effects	
Describe how the project (alone or in combination) is likely to affect the European Site.	
<p>The proposed works are unlikely to affect the River Tay SAC and Firth of Tay and Eden Estuary SAC, SPA, and RAMSAR due to the works being confined to the existing carriageway and being located 3.25km from the River Tay SAC and 10km (hydrologically) from the Firth of Tay and Eden Estuary SAC, SPA, and Ramsar at their closest point. There will be no loss in habitat connectivity as a result of the works as no vegetation removal is required and any indirect impacts (i.e. via pollution run off due to hydrological connectivity) on the qualifying features of the site will be mitigated following the standard best practice detailed within Appendix A.</p>	
Explain why these effects are not considered significant.	
<p>No resources are required from within or in proximity to the designated site. Additionally,</p> <ul style="list-style-type: none"> ▪ The habitat area of the designated site will not be reduced as a result of the proposed works. ▪ There will be no change in the level of disturbance to key species as a result of the proposed works. ▪ No habitat fragmentation will occur as a result of the proposed works. ▪ There will be no reduction in species density as a result of the proposed works. ▪ There will be no change in the key indicators of conservation value. ▪ The proposed works will not reduce the ability of the designated site to cope with climate change. 	
List of agencies consulted: provide contact name and telephone or e-mail address.	No consultation has taken place.
Response to consultation	N/A

Data collected to carry out the assessment		Desktop study and field survey.	
Who carried out the assessment?	Sources of data	Level of assessment completed	Where can the full results of the assessment be accessed and viewed?
Amey Assistant Ecologist: Gina Bertolacci MSc	Aerial photographs, OS mapping, review of google street view, Nature Scot's Sitelink online interactive map ³ , Scotland's Soils Interactive Soil Map ⁴ , SEPA Flood Risk Map ⁵ , SEPA Water Classification HUB ⁶ .	Identification of Potential Effects on European Sites, Initial Screening, and Stage 1 Screening Matrix.	M90 9-10 Bridge of Earn HRA Stage 1 Screening Report M90 9-10 Bridge of Earn Environmental Assessment Report.

Appendix A: Best Practice Measures

Noise and Vibration:

The relevant Best Practicable Means outlined in British Standard (BS) 5228:2009+A1:2014 'Code of practice for Noise and Vibration Control on Construction and Open Sites' should be implemented and followed in order to reduce noise and vibration disturbance. The BS provides specific detail on suitable measures for noise control in respect to construction operations; for example:

- Where reasonably practicable, quiet working methods should be employed, including use of the most suitable plant, reasonable hours of working for noisy operations, and economy and speed of operations.
- Effects from noise should be kept to a minimum through the use of appropriate mufflers and silencers fitted to machinery. All exhaust silencers will be checked at regular intervals to ensure efficiency.
- Sequence operations to minimise simultaneous use of high-noise equipment, and a 'soft start' to works will be in place, whereby plant/machinery/vehicles are started sequentially as opposed to simultaneously.
- Employ electrically powered equipment where feasible instead of diesel or petrol alternatives.
- Ensure regular maintenance of plant and machinery to prevent excessive noise from worn parts or inefficient operation.
- Use techniques like such as wet cutting for example with stihl saws to reduce airborne dust and noise simultaneously.
- On-site construction tasks will be programmed to be as efficient as possible, with a view to limiting noise disruption to local sensitive receptors. Where night-works are to be undertaken, the noisiest works, i.e. hydroblasting should be undertaken before 23:00 where possible.

Biodiversity:

- If a protected species is seen on or near the proposed works, all works should be stopped until the animal passes by. Do not approach protected species moving around close to works and isolate the area temporarily (if possible) until the animal has moved on:
 - The ET&S team should be contacted for any guidance if required, and the control room should be contacted for environmental record.
- On site light sources (where required) should be kept to a minimum, and only used as required.
- When in use, any artificial light should be directional and directed at the area of works as far as reasonably practicable, reducing any light spill into the wider surroundings, and potentially sensitive habitat (e.g. woodland/structures).
- No vehicles, machinery or materials should be parked/stored on any soft verges.
- Effects from noise should be kept to a minimum through the use of appropriate mufflers and silencers fitted to machinery. All exhaust silencers should be checked at regular intervals to ensure efficiency.
- The noisiest works should be scheduled for before 11:00pm if feasible.
- Operatives should avoid extraneous noise whilst on site and should be briefed using Noise and Vibration Environmental Briefing.

Pollution Prevention and Control:

- All debris which has the potential to be suspended in surface water and wash into the local water environment should be cleaned from the site both during and following the works.
- Debris and dust generated as a result of the works must be prevented from entering the drainage system. This can be via the use of drain covers or similar.

- Appropriate measures should be implemented onsite to prevent any potential pollution to the natural water environment (e.g., debris, dust, and hazardous substances). This should include spill kits being present onsite at all times, and the use of funnels and drip trays when transferring fuel etc.
 - The control room must be contacted if any pollution incidences occur (24 hours, 7 days a week).
- Visual pollution inspections of the working area must be conducted frequently, especially during heavy rainfall and wind.
- Weather reports should be monitored prior and during all construction activities. In the event of adverse weather/flooding events, all activities should temporarily stop, and only reconvene when deemed safe to do so, and run-off/drainage can be adequately controlled to prevent pollution.
- All storage areas should be located away from areas that see high vehicular movement to prevent accidental damage.
- All oils and fuels will be returned to storage area after use.
- Bunds to be provided around drums up to 205 litres with a buffer of 25% of their capacity.
- Bunds to be provided around bulk storage to a capacity of 110% of the stored fuel/oil.
- If the mixing of concrete on site is required, site operatives should apply suitable controls to prevent the mixture escaping to the surrounding environment:
 - All mixing should take place a minimum of 10m away from watercourses and drains where possible.
- No washout from concrete mixing should be allowed to enter the water environment and taken off site for appropriate treatment.

Geology and Soils

- Vehicles and materials should not be stored or parked on grass verges where possible.
- Excavation of soils should be kept to a minimum and only where necessary, with any excavated soils being re-used on site as far as reasonably practicable.
- Excavated soils must be appropriately contained/covered and protected from the elements.
- Spill kits should be present on site and all operatives should be fully trained in their use. Any fuels or chemicals required for use should be stored securely with dip trays used appropriately and stored under any chemical or fuel containers.
- See additional pollution measures in the *Pollution Prevention and Control* section below.
- Dust suppression systems, such as dampening down or use of collection vacuums, must be used when cutting concrete.
- Weather reports should be monitored prior to the works, with all construction activities temporarily halting in the event of predicted high rainfall or wind.
- After the works have been complete, excavations should be backfilled with soil and reinstated to the original ground level. The area should be left level and free from debris.

