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Environmental Impact Assessment Record of Determination

A898 Erskine Bridge

Contents

Project Details

Description

This Record of Determination has been written to cover various suites of works occurring on the A898 Erskine Bridge (hereafter referred to as the Bridge) within the 2025 calendar year. Works are being undertaken as part of the South West (SW) Network Management Contract (NMC).

The works involve replacement, and repair works to maintain the structure's function, cultural integrity and long-term use of the Bridge as a travel route. The following work activities are to be undertaken:

External painting works

- Blasting, painting, strengthening and weld repairs of the east and west cantilevers, with full containment in place for blasting works.
- Painting of external deck box and bridge towers.

Painting works undertaken from temporary works platforms and gantries. The following plant / machinery will be required:

- Blasting and painting: blast pot, compressors, dehumidifiers, heaters (3KW Fan Heater 110v), mixer, paint can crusher, paint spraying, paint test equipment, power washer, shot blasting equipment, surveying equipment and vacuum.
- Gas pipe: circular saw, jigsaw, lifting gear, saw, stihl saw and water bottle.
- Metal weld: charger, container, drill, gas products, grinder, heat gun, impact wrench, sander, shear wrench, small tools, surveying equipment, testing kit, ventilation / extraction and weld set.

Nosing joint replacement and surfacing trial / patching

- Replacement of south abutment nosing joint and application of surfacing.
- Removal of steel upstand by grinding and welding on new steel inserts.
- White line renewal and cyclic maintenance activities associated with surfacing.

The following plant / machinery will be required:

- Milling machine, welding gear and burning gear.

Cable re-tensioning

- Investigations and surveys only to be undertaken within the 2025/26 financial year, with no construction activities required.
- Investigations are likely to include testing of welds.

Trough to deck welds remedial works

- Refurbishing of the trough to deck welds following internal inspections.
- This involves digging out of existing welds before repairing dress weld edges.
- Retesting of welds.
- Reapplication of paint system.

The following plant / machinery will be required:

- Drill, gas products, grinder, heat gun, impact wrench, sander, shear wrench, small tools, surveying equipment, testing kit, ventilation / extraction, charger, container, weld set and gas monitors.

Inspection and servicing of access equipment

- The Bridge access equipment, including underdeck gantries and the tower access cradle is subject to an inspection regime as per maintenance manuals in accordance with Lifting Operations and Lifting Equipment Regulations (LOLER) 1998.
- Servicing will be undertaken continuously as per the recommendations made within the inspection reports.

The following plant / machinery will be required:

- Hand tools and non-destructive testing equipment.
- Drill, gas products, grinder, heat gun, impact wrench, sander, shear wrench, small tools, surveying equipment, testing kit, ventilation / extraction, charger, container, weld set and gas monitors.

Carriageway resurfacing

- Resurfacing required due to notable defects along the northbound and southbound carriageways.
- Milling of asphalt layer.
- Inspection of waterproofing layer (if waterproofing repairs are required, the existing waterproof layer will be removed and reapplied).

- Laying of surface course.
- Reinstatement of road markings.

The following plant / machinery will be required:

- Milling machine / planer.
- Roller.
- Hand tools.

Concrete repairs

- Concrete repairs are required to the reinforced concrete piers supporting the structure due to defects including cracking and spalling.
- Breaking out of concrete beneath the Bridge deck, cleaning exposed area with compressed air, sealing cracks.
- Replace reinforcing steel if required.
- Hand application of cement-based mortar and protective coating.

The following plant / machinery will be required:

- Hand tools.
- Access equipment such as a mobile elevated moving platform (MEWP) or similar long armed boom.

Internal electrical maintenance and principal, general and safety inspections

- Ongoing electrical maintenance is required to maintain the accessibility and general usage of the structure.
- This includes undertaking repairs to defective components as required e.g. internal lighting, marine/aviation navigation lighting, cameras etc.

Dehumidification / fire protection

- Installation of dehumidification and fire protection for the cables on the structure.
- This work involves removing the cable bands and using wedges to separate and inspect the cables.
- Cables are then repainted using a ‘metal paint’ product.
- Shrouds are also proposed to be placed around cables of which utilise hot air to create a dry environment.

The following plant / machinery will be required:

- Specialist access equipment, cable wedges.
- Cranes, Hiabs.

Structural health monitoring

- The installation of sensors and permanent survey equipment to allow for continuous structural health monitoring of the Bridge.
- This involves, accessing the internal deck box via web access platform manholes.
- Performing maintenance or installation of existing and new electronic sensors as required.

The following plant / machinery will be required:

- Surveying equipment and associated fixings.

Met forecasting equipment

- Met office contracted to provide weather forecasts. This is used to determine if gantries will stand down due to high winds etc. No construction work is expected.

Work schedule

Work activities are anticipated to take place during both day and night-time working hours, however, will be predominantly day-working unless carriageway closures are required. Night-time works will include carriageway resurfacing, nosing joint replacement and associated surfacing trial/patching.

Traffic Management

Traffic management (TM) will vary with each individual works package, but will typically include lane closures, hard shoulder closures, and temporary traffic lights / contraflow.

Cycleway/footway closures will be required at times, however, at least one cycleway/footway will remain open to pedestrians and cyclists throughout the duration of the works.

Location

The A898 Erskine Bridge is located within the Renfrewshire (southern extents) and West Dunbartonshire (northern extents) council areas at the following National Grid References (NGR) (Figure 1).

- Northern extents: NS 46928 72752
- Southern extents: NS 45788 72116
- Midspan: NS 46218 72421

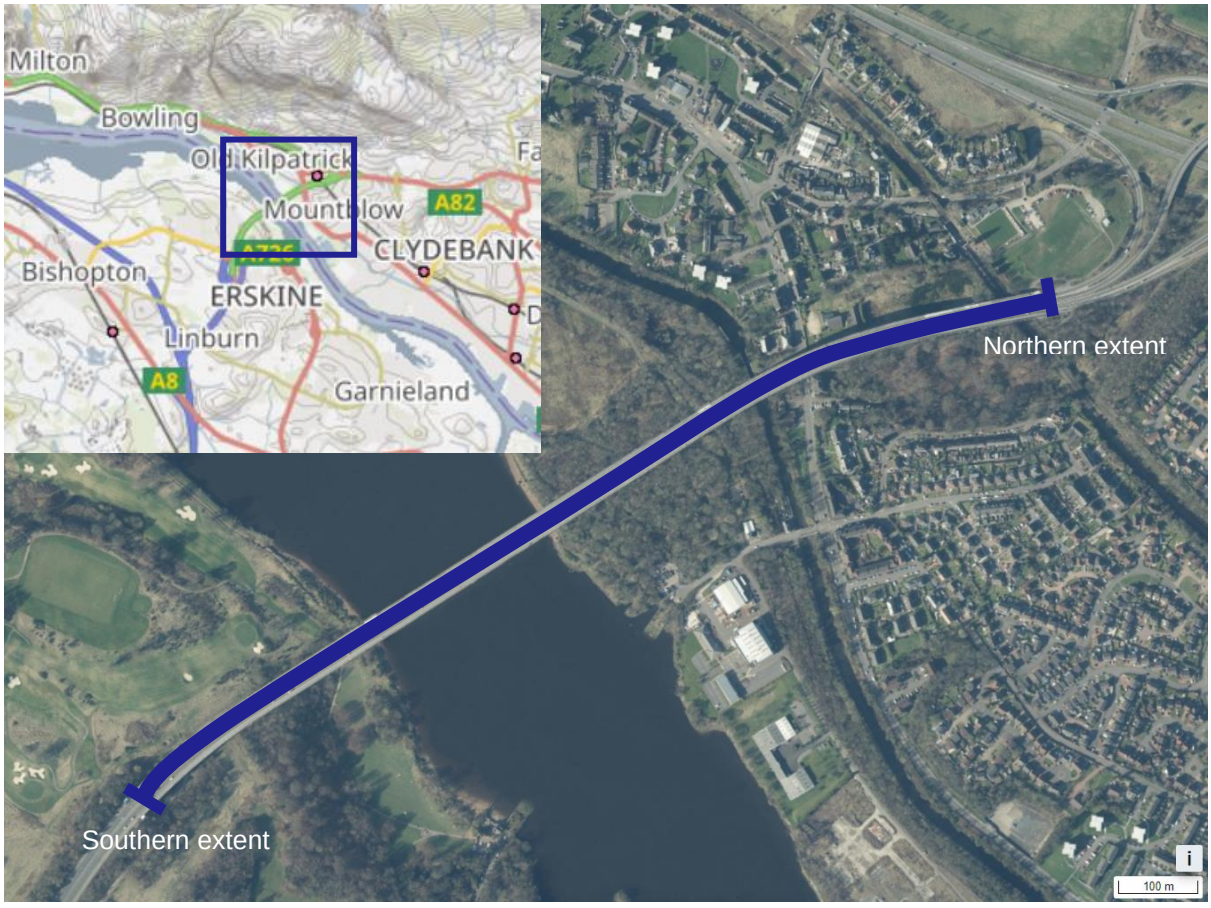

Figure 1. Scheme Location Map. *Crown copyright and database rights 2023. OS Licence number 100023385.*

Description of local environment

Air quality

Baseline air quality surrounding the scheme extents is influenced by traffic flow along the A898 and A82 trunk roads, surrounding roads (A72), and rail activities at the Bridge's northern extent. Annual Average Daily Flow (AADF) in 2023 north of the scheme extents (site number: 74450) was recorded at 46,259 total vehicles with 18% Heavy Goods Vehicles (HGVs).

Over 100 residential receptors are located within 200m of the Bridge, primarily in West Dunbartonshire. The closest properties are located just east and west of the Bridge, beneath it, along the A814 Dunbarton Road.

The following non-residential air quality-sensitive receptors are located within 200m of the Bridge:

- Old Kilpatrick Bowling Club (approximately 60m north);
- Kilpatrick Braes Park (approximately 20m north);
- St. Patrick's Roman Catholic Church (approximately 10m north);
- Lusset Glen Woodland (beneath the Bridge);
- The Saltings Woodland (beneath the Bridge);
- Boden Boo Woods (beneath the Bridge);
- Erskine Beach (beneath the Bridge); and
- Mar Hall Hotel, Golf and Spa Resort (approximately 10m west of the Bridge).

Renfrewshire Council have declared three Air Quality Management Areas (AQMAs):

- Renfrew Town Centre AQMA located approximately 6.5km southeast of the Bridge and declared in 2016 for nitrogen dioxide (NO_2);
- Paisley AQMA (Amended) located approximately 7.3km south of the Bridge and declared in 2006 for NO_2 and particulate matter of a diameter less than 10 micrometres (PM_{10});
- Johnstone High Street AQMA located approximately 9.3km south and declared in 2016 for NO_2.

West Dunbartonshire Council has not declared any AQMAs.

The Scottish Pollutant Release Inventory (SPRI) has identified the Dalmuir Sewage Treatment Works, Beardmore Street, Clydebank located approx. 1.95km southeast of the Bridge. No other sites identified in the SPRI are located within 1km.

Cultural heritage

A desktop study using the PastMap resource has identified the following designated cultural heritage assets within 300m:

Listed Buildings

- Erskine Bridge Category A (Ref: LB52482) (the Bridge);
- Erskine Hospital Ferry Lodge, by Erskine Ferry Category B (Ref: LB12375) (located approximately 285m southeast);
- Two K8 Telephone Kiosks to East and West of Carriageway at South End of Erskine Bridge Category B (Ref: LB52515) (located approximately 10m south of the Bridge's southern extent;
- Old Secession Church Category B (Ref: LB14407) (located approximately 20m north of the Bridge);
- Lusset Road, Lusset House Category B (Ref: LB18987) (located approximately 65m north of the Bridge); and
- Two K8 Telephone Kiosks to North and South of Carriageway at Northeast End of Erskine Bridge Category B (Ref: LB52508) (located approximately 20m north of the Bridge's northern extent)

Scheduled Monuments

- Forth And Clyde Canal: Old Kilpatrick – Linnvale (Ref.: SM6778) (located beneath the Bridge (northern extents), along the Forth and Clyde Canal).

World Heritage Sites

- Antonine Wall World Heritage Site Buffer Zone (located approx. 300m north of the Bridge).

Conservation Areas

- Lusset Road, Old Kilpatrick approximately 20m north.

Non-Designated Features

There are approximately 20 non-designated cultural heritage features within 200mm with the closest located approximately 60m west of the Bridge: Archaeological Evaluation and Excavation: Mar Hall Golf Course, Erskine, Renfrewshire Historic Environment Record (HER) (Ref: 3825).

Landscape and visual effects

The Landscape Character Assessment (LCA) for the southern Bridge extents is classed as the 'Raised Beach, Glasgow and Clyde Valley' Landscape Character Type (LCT) LCT 197, while the northern section is classed as 'Urban'.

LCT 197 has the following key characteristics:

- Steep scarp representing the former cliff line, and narrow platform representing the former beach, with estuarine mudflats along the inner part of the Firth of Clyde.
- 'Hanging' broadleaf woodland on many of the steeper slopes.
- Coastal settlements.
- Defensive sites, castles, historic houses and designed landscapes.
- Dominance of horizontal landscape elements.
- Prominent area with extensive views.

Scotland's Historic Land-Use Map classifies the area surrounding the Bridge as designed landscape, rough grazing, industrial or commercial area, urban area and managed woodland.

The scheme is not located within, or within 500m of any National Scenic Areas, National Parks, or other sites designated for their landscape character or quality.

Due to the urban nature of the proposed scheme, a number of residential, community, commercial and industrial properties have a sensitive direct line of sight of the Bridge.

Four areas of woodland, all classified as 'Long-established (of plantation origin)' under the Ancient Woodland Inventory (AWI) are in the surrounding area to the Bridge:

- An unnamed area (ID: 27950) located approximately 50m south (NS468727);
- Boden Boo Plantation (ID: 27962) located approximately 75m southeast (NS459718);
- An unnamed area (ID: 27961) located approximately 245m southeast (NS462718); and,
- An unnamed area (ID: 27959) located approximately 325m west (NS452721).

Various trees under a Tree Preservation Order (TPO) are beneath the Bridge, with some of these TPOs within the woodland areas noted above. None of which are located within the Bridge extents. These TPOs include:

- TPO reference 02_5;
- TPO reference 02_4; and,
- TPO reference CDC12.

Biodiversity

The Bridge spans the Inner Clyde Estuary, an area important for wild birds that visit the site in the winter. The NatureScot Sitelink resource identifies the following European designated sites along the northern and southern banks of the Inner Clyde:

- Inner Clyde Special Protection Area (SPA) (NatureScot ID: 8514); and
- Inner Clyde Ramsar site a Wetland of International Importance (NatureScot ID: 8429)

These sites are located approximately 40m beneath the Bridge deck.

Due to the location of the sites located directly beneath the Bridge and proposed works, and potential for the works to have a likely significant effect on the qualifying interest, an Appropriate Assessment (AA) has been undertaken.

The Inner Clyde is also a nationally designated site: Inner Clyde Site of Special Scientific Interest (SSSI) (NatureScot ID: 1701).

As part of the Marine Licence consultation process, and due to the location of the Bridge above the sensitive areas, a noise survey and watching brief was carried out by a qualified ecologist, and acoustic specialist respectively. The study area experienced significant use by members of the public, the majority of which were with dogs. It was noted that during the surveys all recorded flush events occurred in response to members of the public and/or their dogs. It is therefore likely that the main disturbance to wading birds in this area is human interaction, which is anticipated to result in birds favouring locations less accessible to the public as their primary foraging habitats.

Preliminary findings suggest that the loudest works, paint blasting, ongoing on the Erskine Bridge, had no impact on foraging birds, or other wader species, during the time of the survey. This may be a result of the slow start-up of the blasting works and the continuous and consistent noise created by these works, or due to the existing high level of baseline noise present within the area. It is likely that the high noise

resulting from the traffic flow on Bridge will habituate nearby fauna to a higher baseline noise level. It is therefore anticipated that individuals that forage or roost within 200m of the Erskine Bridge will likely have a higher tolerance to noise disturbance.

A site of local importance, The Saltings Local Nature Reserve (LNR) is located beneath the Bridge's northern extents and bounded by the River Clyde and Forth and Clyde Canal. This LNR is designated for features of nature conservation and public amenity.

Transport Scotland's Asset Management Performance System (AMPS) has not recorded any Invasive Non-Native Species (INNS) or target species within 500m of the Bridge.

National Biodiversity Network (NBN) Atlas has recorded the following INNS and target species within 500m, outwith the Bridge extents:

INNS:

- Himalayan balsam *(Impatiens glandulifera);*
- Japanese knotweed (*Fallopia japonica);* and,
- Rhododendron *(Rhododendron ponticum).*

Target Species:

- Rosebay willowherb *(Chamerion angustifolium);*
- Creeping thistle *(Cirsium arvense);* and
- Curled dock *(Rumex crispus);*

The Bridge has been determined unsuitable for bat roosting due to its height, which exceeds the typical flight range of most bats and limits access to foraging areas and food sources. Additionally, the bridge's metal construction, lack of cracks or crevices, and its exposed nature, such as to wind, further limit the bat roost suitability of the structure.

Please see *Landscape and visual effects* section above for details on Ancient Woodland and TPOs surrounding the Bridge.

Geology and soils

No sensitive geological receptor sites (designated and non-designated) such as Geological Conservation Review Sites (GCRS) or SSSIs are within proximity of the

Bridge, or the wider area that may be affected by proposed works (NatureScot Sitelink).

Bedrock geology at the northern and southern Bridge extent is identified as igneous bedrock of the Strathgryfe Lava Member formed between 344.5 and 330.9 million years ago (Mya) during the Carboniferous period (BGS Geology Viewer).

Superficial deposits for the same area are identified as sedimentary superficial deposits formed between 2.588 Mya and the present Quaternary period. The southern Bridge extent deposits are marine beach deposits of clay, silt, sand, and gravel, while the northern extents are defined as sedimentary superficial deposits.

The soil type of the southern Bridge extent has been identified as brown soils, while the soil type within the northern extent has not been recorded due to the urbanised nature of the surrounding environment (Scotland's Soils Map).

There is no evidence of historical industrial processes or the storage of hazardous materials that could have given rise to significant land contamination within the study area.

Material assets and waste

The proposed works package entails the ongoing maintenance of the Bridge, therefore varied materials will be required, and wastes produced for each work activity.

The following (but not limited to) wastes and materials cover the various work activities:

External painting

- Materials: paint, thinner, blasting materials and steel.
- Wastes: paint and blasting residue material.

Nosing joint replacement and surfacing

- Materials: waterproofing material, bituminous surfacing materials (TS2010, binder/base), thermoplastic paint and road studs.
- Wastes: road planings, nosing joints, bollards, road markings and studs.

Cable re-tensioning

- Materials: N/A

- Wastes: obsolete cable re-tensioning equipment.

Inspection and servicing of access equipment

- Materials: gas products.
- Wastes: obsolete access equipment.

Trough to deck welds remedial works

- Materials: gas products.
- Wastes: Sanded materials (surface course, concrete, metals).

Carriageway resurfacing

- Materials: waterproofing material, bituminous surfacing materials (TS2010, binder/base), road marking materials and studs.
- Wastes: road planings, nosing joints, bollards, road markings and studs.

Concrete repairs

- Materials: siloxane water propellant material, concrete reinstatement materials and corrosion inhibiting sika ferrogard.
- Wastes: removed concrete and alkaline wastewater.

Dehumidification / Fire protection

- Materials: metal paint products, cable shrouding materials and fire protection materials.
- Wastes: NA

Internal electrical maintenance

- Materials: miscellaneous electrical equipment such as cameras and lighting.
- Wastes: obsolete electrical equipment.

Structural health monitoring

- Materials: sensors and permanent survey equipment and fixings.
- Wastes: N/A

Met forecasting equipment

- Materials: met forecasting equipment and fixings.
- Wastes: N/A

Noise and vibration

The Bridge lies within a heavily urbanised area of Erskine, Renfrewshire (southern extents) and Old Kilpatrick, West Dunbartonshire (northern extents). Local noise levels are likely to be influenced by vehicle traffic on the A898 and A82 carriageways, rail, and from residential and commercial/industrial activities from the surrounding areas such as Erskine, Old Kilpatrick, Bishopton and Clydebank. For AADF details, please see *Air quality* section above.

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

Approximately 200 noise sensitive receptors (NSRs) are located within 300m of the Bridge including residential properties, religious, recreational and community facilities.

- Old Kilpatrick Bowling Club (approximately 60m north);
- Kilpatrick Braes Park (approximately 20m north);
- St. Patrick's Roman Catholic Church (approximately 10m north);
- Lusset Glen Woodland (beneath the Bridge);
- The Saltings Woodland (beneath the Bridge);
- Boden Boo Woods (beneath the Bridge);
- Erskine Beach (beneath the Bridge); and
- Mar Hall Hotel, Golf and Spa Resort (approximately 10m west of the Bridge).

The Bridge is located approximately 5km north of Glasgow International Airport which includes many flight paths.

Residential receptors located on Dumbarton Road, Glen Road, Lusset Glen, Dalnottar Terrace, Dalnottar Avenue, Lusset Road, Ashtree Crescent, Station Road and Mount Pleasant Drive (Old Kilpatrick) currently experience background noise levels (Lden) of approximately 55-75dB from the A898 carriageway (the Bridge). Night-time background noise levels (Lnight) for residential receptors are approximately <50-65dB (Scotland's Noise Map).

Population and human health

For details on sensitive receptors, please refer to the *Noise and Vibration* section above.

Several Renfrewshire Council and West Dunbartonshire Council Core Paths are within 500m of the Bridge:

Renfrewshire Council:

- Core Path EI/2 is a shared use pedestrian walkway and cycle lane located on the Bridge;
- The Clyde walkway (EI/1 leading to EI/5) runs directly under the Bridge; and
- Boden Boo Woods walking route (EI/6) is located approximately 95m south of the Bridge.

West Dunbartonshire Council:

- Core Path 123 and 124 is a shared use pedestrian walkway and cycle lane located on the Bridge.
- Core Path 114 runs parallel to the River Clyde beneath the Bridge;
- Core Path 110 runs beneath the Bridge at the Forth and Clyde Canal;
- Core Path 127 runs along Lusset Glen and adjoins two other Core Paths 130 and 131 which adjoin to Core Path 127, and lead northward towards the Bridge; and
- Core Path 129, which also adjoins Core Path 127 and runs east towards Great Western Road.

Whilst no bus stops exist within the Bridge extents, services 757 Paisley - Clydebank and X22 Greenock - Clydebank utilise the A898 carriageway along the Bridge.

The A898 carriageway is street-lit on the Bridge and contains both northbound and southbound footways.

National Cycle Network route 7 travels beneath the Bridge parallel to the Forth and Clyde Canal.

Whilst no access roads exist within the Bridge extents, on and off-slip roads connecting the A898 carriageway to the A82 (Great Western Road) are present beyond the northern extent of the Bridge.

No laybys or crossover points are located on the Bridge.

Road drainage and the water environment

The Bridge spans the Clyde Estuary, Inner (ID: 200510), a transitional waterbody of moderate ecological potential and poor water quality, as classified under the Water Framework Directive (WFD) (SEPA Water Classification Hub). This watercourse is identified as a high (10%) likelihood of coastal water flooding annually (SEPA Flood Maps).

This area of the Inner Clyde is located below Mean High Water Springs (MHWS), and as such, under the Marine (Scotland) Act 2010, a Marine Licence is required for the proposed works. A 10-year Marine Licence was granted on the 18th December 2024 (MS-00010790).

The Forth and Clyde Canal (ID: 10710) flows beneath the Bridge (northern extents) and is classified under the WFD with a good ecological potential. This watercourse is identified as a high likelihood of pluvial flooding each year.

Dalnottar Burn, a tributary of the River Clyde flows west beneath the Bridge and into the River Clyde and has a high likelihood of pluvial flooding each year.

The southern Bridge extents are within the Erskine and Linwood Sand and Gravel groundwater body (ID: 150782) with an overall good WFD status. The northern Bridge extents are within the Clydebank Sand and Gravel groundwater body (ID:150775) classified with a good status.

At present, drainage along the length of the Bridge is provided by gullies within the main span of the structure, draining down the main columns to outlets at the base of the bridge's piers of which then drain into the River Clyde.

Climate

Carbon Goals

The Climate Change (Scotland) Act sets out the target and vision set by the Scottish Government for tackling and responding to climate change. The Act includes a target of reducing CO_2 emissions by 80% before 2050 (from the baseline year 1990).

The Scottish Government has since published its indicative Nationally Determined Contribution (NDC) to set out how it will instead reach net-zero by 2045, working to reduce emissions of all major greenhouse gases by at least 75% by 2030. By 2040, the Scottish Government is committed to reduce emissions by 90%, with the aim of reaching net-zero by 2045 at the latest.

Transport Scotland is committed to reducing carbon across Scotland's transport network, this commitment is being enacted through the Mission Zero for Transport. Transport is the largest contributor to harmful climate emissions in Scotland. In response to the climate emergency, TS are committed to reducing their emissions by 75% by 2030 and to a legally binding target of net-zero by 2045.

Amey's Company Wide Carbon Goal is to achieve Scope 1 and 2 net-zero carbon emissions, with a minimum of 80% absolute reduction on our emissions by 2035. Amey is aiming to be fully net-zero, including Scope 3 emissions, by 2040.

Amey are working towards a contractual commitment to have carbon neutral depots on the SW NMC network by 2028. Amey have set carbon goals for the SW NMC contract as a whole to be net-zero carbon by 2032.

Policies and Plans

This Record of Determination (RoD) has been undertaken in accordance with Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017 (RSA EIA Regulations) along with Transport Scotland's Environmental Impact Assessment Guidance (Guidance – Environmental Impact Assessments for road projects (transport.gov.scot)). Relevant guidance, policies and plans accompanied with the Design Manual for Roads and Bridges (Design Manual for Roads and Bridges (DMRB)) LA 101 and LA 104 were used to form this assessment.

Description of main environmental impacts and proposed mitigation

Air quality

Construction activities associated with the various proposed works on the Bridge may temporarily impact local air quality surrounding the Bridge for the period of the works. Activities such as carriageway resurfacing, nosing joint repairs and concrete repairs may emit dust and particulate matter emissions. Furthermore, there is potential for impacts to air quality from prolonged vehicle and plant presence, including HGVs. With the following best practice mitigation measures in place, no significant, or lasting effects are anticipated upon air quality.

Best practice measures as outlined in the 'Guidance on the assessment of dust from demolition and construction (January 2024)' published by the Institute of Air Quality Management (IAQM) will be followed, which includes:

- Materials that have a potential to produce dust will be removed from site as soon as possible, unless being re-used on site (cover or fence stockpiles to prevent wind whipping);
- Cutting, grinding or sawing equipment will be fitted or used in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- Drop heights from conveyors and other loading or handling equipment will be minimised;
- Vehicles entering and leaving the work area will be covered/sheeted to prevent escape of materials during transport;
- Equipment will be readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods;
- Surfaces will be swept where loose material remains following planing.
- When not in use, plant and vehicles will be switched off and there will be no idling vehicles;
- All plant and fuel-requiring equipment utilised during construction will be well maintained to minimise emissions.
- Containment measures such as scaffolding and sheeting will be in place to contain debris and dust during the external painting works.

No significant air quality impacts are anticipated and therefore in accordance with DMRB Guidance document LA 105: Air Quality no further assessment is required.

Cultural heritage

The Bridge is a Category A Listed Building, with the works therefore having potential impacts with regard to this designation. The works, however, are required to ensure the long-term viability and structural integrity of the Bridge and therefore protecting and maintaining a statutory heritage asset.

As works consist largely of maintenance and like-for-like replacements with no anticipated visual, or character changes to the Bridge, no significant adverse impacts are anticipated due to the proposed works.

There is no anticipated impact to the Scheduled Monument, Conservation Area or World Heritage Site located within 300m of the Bridge as the works are contained to the existing footprint of the Bridge. Furthermore, the Bridge stands a prominent feature in the landscape, and thus the proposed works are not anticipated to introduce significant visual impacts or impact views to or from the identified designated heritage features.

The potential for exposure of undiscovered cultural heritage features is considered negligible as construction of the Bridge is likely to have removed any archaeological finds that may have been present, and with works contained to the existing structure, there are no anticipated impacts upon the identified cultural heritage features within the surrounding study area.

The following mitigation measures will be in place:

- Initial consultations with Historic Environment Scotland (HES), Renfrewshire Council and West Dunbartonshire Council have been undertaken. HES had no comments to make, while the relevant local authorities were content that listed building consent would not be required due to the works operating on a generally like-for-like basis. However, further consultations will be undertaken on a scheme-by-scheme basis prior to works activities if there is to be a change to the character or appearance of the Bridge, which may give further consideration to the requirement for appropriate consents.
- All site operatives will be informed of the historical value of the Bridge, and its designated status.
- If a change to the construction programme is required that involves additional works, Amey's Environmental Team will be contacted prior to works commencing in the event further consultation may be required with the local authorities and HES for potential consents.

Landscape and visual effects

Due to the urban nature of the proposed scheme, a number of residential, community, commercial and industrial and recreational receptors have a direct sight of the Bridge above. Temporary adverse impacts on visual receptors are anticipated during the construction phase(s) of the proposed works due to the presence of plant, machinery, TM and vehicles. This is particularly relevant where external painting works are being undertaken and a visual operative presence is prolonged upon the Bridge.

Upon completion of each works activity, no residual landscape or visual impacts are anticipated, as works are restricted to the already engineered structure, with only minor changes such as an improved road surface being the only discernible change.

The following mitigation measure will be in place during works:

- Throughout all works phases, the site will be kept clean and tidy, with materials, equipment, plant and wastes appropriately stored, reducing the landscape and visual effects as much as possible.

With the above mitigation measures in place, no significant effects are anticipated upon landscape and visual effects associated with the proposed works will not be significant. Therefore, in accordance with DMRB Guidance document LA 107: Landscape and Visual Effects no further assessment is required.

Biodiversity

The works, although confined to the existing structure and not extending into the surrounding landscape, may have potential impacts on the sensitive biodiversity and designated sites within the area, namely the Inner Clyde SPA, Ramsar site and SSSI, all designated for non-breeding bird species. Potential disturbances, such as noise, vibration, and lighting, could disrupt bird species' behaviour, particularly during sensitive wintering periods.

The Bridge spans an area of the Inner Clyde below MHWS and as such, under the Marine (Scotland) Act 2010, a Marine Licence is required for the proposed works. A 10-year Marine Licence was granted on the 18th December 2024 (MS-00010790).

Following the statutory consultation process, Marine Directorate have undertaken an AA due to the potential for the works to have a likely significant effect on the qualifying interest of the sensitive areas located directly beneath the Bridge and proposed works.

This AA concludes that providing the below condition is adhered to, there will be no adverse effect on the qualifying interest of the Inner Clyde SPA, either in isolation or in combination with other projects.

This condition, as detailed within the granted Marine Licence is that the licensee must ensure that no lancing activities, which form part of the construction and maintenance works are carried out between mid-September and mid-March.

Pollution prevention controls will be implemented as standard to minimise the risk of pollution to watercourses, regardless of European designations. Please see Road Drainage and the Water Environment section below for details.

INNS have been identified within 500m, beneath the Bridge within the surrounding landscape, however as works are contained on the structure, there is no permanent (or temporary) land-take, and there is no requirement to import topsoil, there is limited potential to introduce or spread such species.

The following mitigation measures will be in place:

- Site operatives will be made aware of the sensitivity of the Inner Clyde SPA, Ramsar site and SSSI prior to any construction activities.
- Where night-time or winter working is required, directional lighting will be used for all construction activities and aimed away from sensitive ecological receptors including trees and wooded areas at the Bridge's northern and southern extents.
- In the unlikely event a protected species is encountered on site, works will be temporarily halted until the animal has moved on, or until Amey's Environmental Team can provide advice.
- A 'soft start' will be implemented on site during construction activities. This involves switching on plant/vehicles sequentially as opposed to simultaneously, to ensure a gradual increase in noise for minimal disturbance for surrounding biodiversity and protected species.

With best practice mitigation measures in place, no significant effects are predicted for biodiversity. Therefore, in accordance with DMRB Guidance document LA 108: Biodiversity no further assessment is required.

Geology and soils

Works are restricted to the already engineered structure, and as such there are no anticipated impacts on geology and soils. The following mitigation measures will, however, be in place:

- Spill kits will be present on site and all operatives will be fully trained in their use. Any fuels or chemicals required for use will be stored securely with drip trays used appropriately and stored under any chemical or fuel containers.
- Weather reports will be monitored prior to the works, with all construction activities temporarily halting in the event of predicted high rainfall or wind.
- Please see additional pollution mitigation measures in the Road Drainage and the Water Environment section below.

With mitigation measures in place, no significant effects are precited for geology and soils. Therefore, in accordance with DMRB Guidance document LA 109: Geology and Soils no further assessment is required.

Material assets and waste

Minimising impacts arising from construction materials are focussed upon making the most efficient use of materials onsite to reduce the need for imported primary materials and minimise the creation and disposal of waste through (i) reduction, (ii) re-use, and (iii) recycling. There is potential for impacts as a result of resource depletion through use and transportation of new materials, for example materials required for carriageway resurfacing. However, recycled, secondary or re-used materials will be used and sourced locally as far as is practicable within design specifications.

The following mitigation measures with regard to storage, disposal and regulatory requirements will be in place:

- Waste will be stored in suitable containers and covered.
- Where possible, different waste streams will be separated at the source.
- The waste hierarchy (Reduce, Reuse, Recycle and Dispose) will be employed throughout the construction works.
- All electrical waste, such as that produced during internal electric maintenance works will be disposed of in accordance with SEPA Guidance and waste electrical and electronic equipment (WEEE) regulations.
- Uncontaminated road planings generated as a result of the works will be recovered in accordance with the criteria stipulated within SEPA document ‘Guidance on the Production of Fully Recoverable Asphalt Road Planings’ where possible.
- The Contractor is responsible for the disposal of uncontaminated road planings, and this will be registered in accordance with a Paragraph 13(a) waste exemption issued by the Scottish Environment Protection Agency (SEPA), as described in Schedule 3 of the Waste Management Licensing Regulations 2011.
- Where special (hazardous) waste, such as paint is produced during the work activities, this will be transported by suitable licenced contractor and

accompanied by a correctly completed special waste consignment note (SWCN) providing information about the waste source, hazardous properties and disposal/treatment facility. The SWCN will be retained for three years with the Site Responsible Manager is responsible for ensuring these are retained on site. Special waste will be segregated from general waste and other recyclables.

- A Site Waste Management Plan (SWMP) will be prepared where individual scheme values exceed £350k.
- Re-use and recycling of waste will be encouraged and undertaken where possible, and the subcontractor will be required to fully outline their plans and provide documentary evidence for waste arising from the works (e.g., waste carrier's licence, transfer notes, and waste exemption certificates).

With best practice mitigation measures in place, no significant effects are predicted for Material Assets and Waste. Therefore, in accordance with DMRB Guidance document LA 110: Material Assets and Waste, no further assessment is required.

Noise and vibration

Construction activities associated with the proposed works have the potential to cause noise and vibration impacts through the use of equipment and construction vehicles for the proposed activities. This will likely impact NSRs beneath and surrounding the Bridge, in particular where noise-heavy works such as blasting are required. Noisy construction activities also have the potential to disturb bird populations of the SPA and Ramsar site located on the riverbanks beneath the Bridge. Please see Biodiversity section above for more details.

Work activities will be undertaken during both day and night-time working programmes; however contractual agreements are currently in place regarding noise heavy works such as that required for the external painting contract. This includes the following measures:

- The Best Practicable Means, as defined in Section 72 of the Control of Pollution Act 1974, will be employed at all times to reduce noise to a minimum. It is the Contractors responsibility to review the act and seek the Local Authorities formal consent for the works (Part 111, Section 61).
- All vehicles and mechanical plant used for the purpose of the works will be fitted with effective exhaust silencers which will be maintained in good and efficient working order.
- Sources of significant noise will be enclosed with acoustic screening. If compressors are used, they will be sound reduced models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools will be fitted with mufflers or silencers of the type recommended by the manufacturers.

- All machines in intermittent use will be shut down in the intervening periods between work or throttled down to a minimum.
- Items of plant will be maintained in good and condition so that extraneous noises from mechanical vibration, creaking and squeaking will be reduced to a minimum.
- Plant, equipment and processes developed for and/or used in the execution of the works will produce the minimum noise commensurate with their required functions.
- Static machines will be sited as far away as practicable from inhabited buildings.
- All materials and equipment will at all times be so handled as to minimise noise due to impact.
- Operatives will receive training to effectively employ techniques to reduce noise.
- Site vehicles will be fitted with white noise vehicle-reversing alarms.

The Bridge is not located within a CNMA or CQA. Although there are residential receptors in close proximity, and beneath the Bridge and proposed works, it is expected that the proximity of the Bridge, and railway line to the north suggests that residents within the local area will have a degree of tolerance to noise and disturbance. Following the completion of the works, replaced bridge joints and road surfacing will reduce the noise and vibration currently produced by passing vehicles over the A898 carriageway.

The following additional mitigation measures will be in place:

- When there is a requirement for night-time working, NSRs within 300m, and the relevant local authorities will be notified ahead of works activities on the Bridge. Pre-notification will include details of proposed timings, works duration and a contact number.
- Rubber linings will be used in, for example, chutes and dumpers to reduce impact noise.
- A ‘soft start’ to works will be in place, whereby plant/machinery/vehicles are started sequentially as opposed to simultaneously.

With best practice mitigation measures in place, no significant effects are predicted for noise and vibration. Therefore, in accordance with DMRB Guidance document LA 111: Noise and Vibration and no further assessment is required.

Population and human health

During construction, activities undertaken on site may have temporary adverse impacts on local residents and vehicle travellers as a result of construction presence, and associated noise, and delays where TM will be required for individual work activities. There is potential for temporary adverse impacts on the shared use path

(Core Path EI/2) that crosses the Bridge as it may be required to be temporarily closed for specific suites of works. Bus services utilising the Bridge may experience delays during construction periods. No impacts are anticipated on National Cycle Route 7.

The following mitigation measures will be in place:

- Through access will be maintained at all times on one of the dedicated paths which run along the northbound and southbound sides of the Bridge and accommodate the Core Path EI/2. If access must be restricted, appropriate signage will be in place, at either end of the bridge, to direct travellers along the shared use path on the other side of the Bridge.
- Appropriate signage and site safety features will be installed with advance notice given to the local communities affected.
- TM arrangements will be advertised on approach, ahead of each works activity commencing.
- Non-essential lighting will be switched off at night to minimise visual disturbance to receptors surrounding the Bridge.
- Appropriate health and safety measures will be considered when working upon the bridge deck to avoid any debris falling on the residential properties, amenity grounds and ecological receptors located below the Bridge.

With best practice mitigation measures in place, no significant effects on population and human health are predicted. Therefore, in accordance with DMRB Guidance document LA 112: Population and Human Health, no further assessment is required.

Road drainage and the water environment

During the various work activities, there is potential for temporary impacts on the water environment. Potential changes in water quality from pollution events (either by accidental spillage of fuels or waste material or by mobilisation of these in drainage systems and surface water) during the works could have a direct or indirect effect on the surrounding water environment, in particular the Inner Clyde Estuary and The Forth and Clyde Canal.

Paint dust/particles produced from the external painting works may impact the water environment and aquatic species, if it enters waterbodies. When paint dust settles in water, it may introduce harmful chemicals, including heavy metals, solvents, and pigments, which can negatively impact water quality and aquatic ecosystems. However, full containment will be in place for the blasting works to control and capture all debris, dust, and particles generated by blasting and painting activities.

The Bridge spans an area of the Inner Clyde below MHWS as such, under the Marine (Scotland) Act 2010, a Marine Licence is required for the proposed works. A 10-year Marine Licence was granted on the 18th December 2024 (MS-00010790).

The following mitigation measures will be implemented:

- To prevent pollution of surrounding waterbodies, there will be appropriate containment and disposal of painting works waste and dust. Please see Material Assets and Waste section for regulatory requirements regarding waste disposal.
- All operatives will be aware of SEPA's Guidance for Pollution Prevention (GPP) documents.
- The Contractor will implement measures to minimise the risk of debris, dust, sediment, and accidental spillages entering the road drainage system. This can be via the use of drain covers or similar to ensure full segregation of the works from the road drainage system.
- All debris which has the potential to be suspended in surface water and wash into the local water environment will be cleaned from the site both during and following the works.
- All site operatives 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. Spill kits will also be available within all site vehicles and spill kits will be replenished onsite when required.
- The Amey control room will be contacted if any pollution incidences occur.
- In the event of a pollution incident, SEPA will be notified without delay.
- Weather reports will be monitored prior to and during the works with all construction activities temporarily halting in the event of an adverse weather/flooding event.
    - The works will only continue when it is deemed safe to do so and run-off/drainage can be adequately controlled to prevent pollution.
- All storage areas (fuels, machinery, plant, materials) where required will be located/stored:
    - Away (>10m) from watercourses and surface water drainage systems;
    - Away from areas that see high vehicular movement (as far as reasonably practicable) to prevent damage by collision or extremes of weather;
    - Fuels stored within a drip tray, bund or other form of secondary containment.

With the above mitigation measures in place, no significant water environment impacts are anticipated. Therefore, in accordance with DMRB Guidance document LA 113: Road drainage and the water environment no further assessment is required.

Climate

Construction activities associated with the proposed works have the potential to cause local air quality impacts as a result of the emission of greenhouse gases (GHGs) through the use of vehicles and machinery, material use and production, and transportation of materials to and from site. However, by undertaking the proposed works the lifespan of the Bridge is increased. This promotes 'Build Less' principles outlined within the carbon reduction hierarchy. Furthermore, the execution of timely routine maintenance and repairs to the structure aims to reduce the number of future maintenance interventions and hence this leads to an overall reduction in traffic disruption, construction and material-related carbon emissions.

The following mitigation measures will be in place:

- Where possible, materials and suppliers will be sourced locally to reduce GHG emissions associated with travel distance, materials movement, and waste will be disposed at a local waste management facility.
- Further actions, considerations and regulatory requirements for this scheme are detailed in the above Material Assets and Waste section.

With best practice mitigation measures in place, no significant impacts are anticipated on Climate. Therefore, in accordance with DMRB Guidance document LA 114: Climate, no further assessment is required.

Vulnerability of the project to risks

The Bridge is not identified at risk of surface water flooding and there will be no change to the likelihood of flooding on the Bridge as a result of the various works activities. Where cycleway/footway closure is required as part of the works, at least one cycleway/footway will remain open to pedestrians and cyclists throughout the duration of the works.

Works are contained to the existing structure and thus there will be no change in vulnerability of the road to risk, or in severity of major accidents/disasters that would impact on the environment.

Improvement of the road surface following carriageway resurfacing works will enhance skid resistance, and thus overall road safety on completion of the scheme.

Considering the above, the vulnerability of the project to risks of major accidents and disasters is considered to be low.

Assessment cumulative effects

The proposed works are not anticipated to result in significant environmental effects. Due to the nature of the proposed works, no cumulative effects are anticipated with any other developments in the vicinity.

The West Dunbartonshire and Renfrewshire Council Planning Portals have not identified any extant planning applications within the Bridge surroundings that would result in significant cumulative effects.

The Scottish Road Works Commissioner's Interactive Map has not highlighted any works programmed to occur on the surrounding carriageways in close proximity to the Bridge.

Assessments of the environmental effects

The proposed works on Erskine Bridge, as detailed within this RoD are covered within a 10-year Marine Licence (MS-00010790), as granted on the 18th December 2024. A part of the licensing and statutory consultation process, Marine Directorate have undertaken an AA due to the potential for the works to have a likely significant effect on the qualifying interest of the sensitive areas located directly beneath the Bridge and proposed works.

This AA concludes that providing the below condition is adhered to, there will be no adverse effect on the qualifying interest of the Inner Clyde SPA, either in isolation or in combination with other projects. This condition, as detailed within the granted Marine Licence is that the licensee must ensure that no lancing activities, which form part of the construction and maintenance works are carried out between mid-September and mid-March.

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

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

This is a relevant project in terms of section 55A(16) of the Roads (Scotland) Act 1984 as it is a project for the improvement of a road and the completed works (together with any area occupied by apparatus, equipment, machinery, materials,

plant, spoil heaps, or other such facilities or stores required during the period of construction) exceed 1 hectare in area, and are situated in whole or in part in the Inner Clyde Ramsar and SPA which are sensitive areas within the meaning of regulation 2(1) of the Environmental Impact Assessment (Scotland) Regulations 1999.

The project has been subject to screening using the Annex III criteria to determine whether a formal Environmental Impact Assessment 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:

- All works are restricted to the existing structure of Erskine Bridge.
- The proposed works seek to maintain the structural integrity of the Bridge and improve its safety to prevent future deterioration of the structure. Thus, minimising the extent of future works required to the Bridge.
- Any potential impacts of the works are expected to be temporary, short-term, not significant and limited to the construction phase.
- No in-combination effects have been identified.
- The risk of major accidents or disasters is considered to be low.

Location of the scheme:

- The works are taking place above the Inner Clyde Ramsar, SPA and SSSI. An AA has been undertaken for the proposed works.
- The Bridge is recorded as a ‘Category A’ listed building. As the works will not result in any material or significant visual changes to the structure and as such Listed Building consent is therefore not required prior to works commencing.
- Land use will not change as a result of the works.
- The works do not require any private land acquisition.
- The scheme does not lie within any sites designated for geology or soils.

Characteristics of potential impacts of the scheme:

- The waste hierarchy will be followed to reduce waste to landfill. Measures will also be in place to ensure appropriate removal and disposal of waste.
- Any potential impacts to walkers or cyclists will be temporary, short-term, and limited to the duration of each works activity.
- There is no change to the vulnerability of the road to the risk or severity of major accidents/disasters that would impact on the environment.

- No impacts on the environment are expected during the operational phase as a result of the works.

References of supporting documentation

- An Appropriate Assessment undertaken by Marine Directorate in December 2024 to support a renewed 10-year Marine Licence Application.
- Marine Licence (MS-00010790) (granted and issued by Marine Directorate on the 18th December 2024 and valid until 18th December 2034).
- Non-Statutory Environmental Report carried out by the Amey Environment Team in March 2024 to support a renewed 10-year Marine Licence Application.
- Noise Survey and Watching Brief carried out by the Amey Environment Team in December 2024 to support a renewed 10-year Marine Licence Application.

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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