A828 Connel Bridge

Environmental Summary Report

	Name	Organisation	Signature	Date
Prepared By	[Redacted]			03/05/2018
Checked By				09/05/18
Client:	Transport Scotland			

Distribution		
Organisation	Contact	Copies
BEAR Scotland		

ENVIRONMENTAL ASSESSMENT OVERVIEW

Environmental topic / aspect	Relevant	Not Relevant	Justification/comment
Air Quality	X		Sensitive receptors identified within 200m (approximately 40 residential, three commercial and one community receptors). Temporary construction impacts, mitigated through measures outlined in the Site Environmental Management Plan (SEMP).
Cultural Heritage	X		There are three assets of cultural heritage interest within 200m (Connel Bridge, St Orans Church and Barrows Scheduled Monument). Temporary construction impacts, mitigated through measures outlined in the SEMP.
Ecology and Nature Conservation	X		Potential for ecological impacts on otter, bats, and breeding birds, mitigated through measures outlined in the SEMP.
Landscape Effects		X	The works are not within a National Scenic Area (NSA) or designated conservation site.
Land Use		X	No change in land use is required, as works are confined to the existing structure.
Noise and Vibration	X		Sensitive receptors identified within 200m (approximately 40 residential, three commercial and one community receptor). Temporary construction impacts, mitigated through measures outlined in the SEMP.
Vehicle Travellers	X		Temporary disruption to vehicle travellers during construction is anticipated. Traffic Management Plan to be implemented and temporary diversion to be provided.
Pedestrians, Cyclists, Equestrians and Community	X		Temporary disruption to National Cycle Network (NCN) Route 78 which crosses the scheme and footpath users is anticipated
Road Drainage and the Water Environment	X		The transitional water body Loch Etive (ID: 200073) is crossed by the scheme. Temporary construction impacts, mitigated through measures outlined in the SEMP.
Geology and Soils		X	No significant impacts predicted within the scheme.
Impact of Road Schemes on Policies and Plans		X	No additional development required.
Waste & material use / re-use	X		Waste management legislation to be complied with and recommendations for waste and material use / re-use for the contractor are outlined in the SEMP.
Consultation	X		Consultation required with Argyll and Bute Council
Licensing & consents	X		Connel Bridge is a Category B Listed Building. Argyll and Bute Council has been contacted regarding the proposed works, and it is recommended that BEAR Scotland will contact Argyll and Bute Council Planning Service as Major Schemes (Painting and Scour

			works)come forward on the five-year maintenance programme to provide more detail of the proposed works and to request information as to whether listed building consent would be required for any element of the works. Potential requirement for otter and bat disturbance licences.

SCHEME DETAILS		
Scheme reference		17 NW 1203 041- 5 Year Marine Licence – Connel Bridge
OI number		17/NW/09348/755
Scheme designer		[Redacted]
SCHEME DESCRIPTION		
Location		A828
Local authority		ARGYLL & BUTE COUNCIL
Description of planned works (***include any ancillary works)***		The following maintenance works and schemes will be covered by the 5-year marine licence: Scour Repair Painting Carriageway and footpath resurfacing Concrete repairs Gulley and drainage cleaning Parapet replacement Joint renewal Minor bridge maintenance Minor M&E schemes Bird Guano removal Static and mobile access platforms underneath the bridge for minor maintenance and inspections Point cloud surveys Appendix I details the maintenance works as planned.
Why is scheme needed?		To ensure that there is no delay to future maintenance works on the bridge from obtaining a marine licence.
Length of scheme		TBT by BEAR
What is area (in hectares) of planned works (***include traffic management)***		Less than 1 hectare
Timing / programme for works	Start date	TBC by BEAR
	Duration (days)	5 years (for overall programme)
	Proposed construction hours	TBT by BEAR

LOCATION PLAN

ENVIRONMENTAL BASELINE

This section contains an environmental assessment split into two main parts. These are the collation of baseline information (via a detailed desktop assessment) followed by a targeted walkover survey.

Date(s) of site visit: 21/03/2018

Surveyor name(s): [Redacted]

Weather conditions: Low cloud, persistent rain and breezy, temperature (5-8°C)

Survey limitations: No

AIR AND CLIMATE

Baseline data has been obtained from the Air Quality in Scotland (AQS) and Google Maps online mapping tools. A walkover survey was used to note any potential connectivity with properties / receptors identified during the desktop study.

The DEFRA website was checked in April 2018, and the scheme is not located in an Air Quality Management Area (AQMA).

On the southern aspect, there are approximately 40 residential properties within 200m of the bridge. Additionally, there are three commercial properties:

The Oyster Inn restaurant and hotel (NM 90932 34280);

The Rowans B&B (NM 90957 34248); and

Cnoc-Aruan Sea View property (NM 91252 34383).

The Connel Medical Practice (including a GP surgery, pharmacy, coffee shop and hairdresser) is located approximately 150m east of the southern aspect of the bridge (NM 91286 34397).

On the northern aspect, there are no residential, commercial or community receptors within 200m of the bridge.

Connel experiences a maritime climate with cool summers and mild winters, and high levels of rainfall.

Refer to Appendix A for map and table identifying sensitive human receptors.

CULTURAL HERITAGE AND MATERIAL ASSETS

Baseline data has been obtained from the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) online mapping tool. A walkover survey was used to note any potential connectivity between the scheme and noted features.

St. Oran's Church (LB11985) is a Category B listed building (NM 91421 34259) which is located approximately 300m south-west of the scheme.

North Connel barrow is a scheduled monument consisting of the remains of a barrow from the Bronze Age (or earlier). It is located approximately 160m north-west of the scheme (NM 90920 34704).

The bridge itself is a Category B listed building (LB11986). Argyll and Bute Council has been contacted regarding the proposed works, and it is recommended that BEAR Scotland will contact Argyll and Bute Council Planning Service as the Major Schemes (Painting and Scour works) come forward on the five-year maintenance programme to provide more detail of the proposed works and to request information as to whether listed building consent would be required for any element of the works.

Refer to Appendix B for RCAHMS map of area.

BIODIVERSITY

Baseline data has been obtained from the National Biodiversity Network (NBN), Scottish Natural Heritage (SNH) and Scotland's Environment (SE) online mapping tools. This was followed by an ecological site appraisal that assessed the potential impacts of the works on designated sites, habitats, mammals, birds, water environment etc.

Connel Bridge is not located within or immediately adjacent to any Natura 2000 sites, Marine Protected Area (MPAs) or Sites of Special Scientific Interest (SSSIs). The nearest Special Area of Conservation (SAC) is Loch Etive Woods, located approximately 2.5km south-east. Consultation with SNH and Marine Scotland (MS) was undertaken in March 2018 to confirm that there is expected to be no likely significant effect on Loch Etive Woods SAC.

On both extents of the bridge, roadside verges are paved with adjacent grass borders. A tall ruderal habitat with scrub; rosebay willowherb (*Chamerion angustifolium*), gorse (*Ulex europaeus*), bramble (*Rubus fruticosus*), young birch (*Betula sp*.), and sycamore (*Acer pseudoplatanus*). Residential properties and gardens are present to the south-east (See Air Quality & Noise Section), along with broadleaved woodland (ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), and silver birch (*Betula pendula*) along the west embankment.

Loch embankments are steep bedrock to the west with habitat comprising of gorse and bracken (*Pteridium sp*.), and scattered birch woodland. The habitats under the bridge constitute the Scottish Priority Marine Feature (PMF) of kelp and seaweed communities in tide-swept sheltered conditions and kelp and seaweed communities on sublittoral sediment

Japanese knotweed (*Fallopia japonica*) was recorded approximately 80m northwest of the bridge, on the banks of the small watercourse (NM 91041 34716). Japanese knotweed was also recorded on the shore approximately 20m southwest of the bridge (NM 91119 34374). A small stand of rhododendron (*Ericaceae sp*.) was recorded approximately 25m south-west of the bridge (NM 91111 34380).

Suitable habitat for breeding birds was recorded in the scrub and woodland habitat on both north and south sides of the bridge. The bridge itself may also be used by breeding birds. Pre-work breeding bird checks will be required if works are conducted during the breeding birds season (March to August, inclusive).

Two 46m long 3-span masonry arch viaducts at either end of the bridge presents some features consisting of small cracks and missing mortar between bricks, that may have the potential for roosting bats. Woodland to the south-west of the bridge may provide a foraging habitat for bats. No suitable features were noted in trees adjacent to the bridge; however, many of the trees had thick ivy (*Hedera helix*) growing along their lengths, which may present suitable roosting habitat (NM 91139 34354).

Bat activity surveys may be required depending on likely disturbance to the arches and the steel structure during works; this should be factored in to any programming of works to these areas. If bats are found to be roosting in Connel Bridge a derogation licence and consultation with SNH may be required.

Otter (*Lutra lutra*) field signs (spraint of varying ages) were recorded on lochside habitat adjacent to bridge on both north and south aspects; no sightings were made (Table 1). The north boundary of the beach to the north-east of the bridge presents suitable habitat for otter resting sites beneath tree root overhangs (approximately NM 91195 34724).

Although current baseline indicates that there will be no disturbance to otters, works will be covered under the BEAR Scotland North West Unit Staff Otter Disturbance Licence (Licence Number 118944) should an offence be identified.

Table 1 Otter field signs recorded within the vicinity of the bridge.

Field Sign	Description	National Grid Reference (NGR)
Spraint	North side of bridge	NM 91043 34607
Spraint	North side of bridge	NM 91065 34596
Spraint	Beneath bridge over small watercourse.	NM 91014 34781
Spraint	Well-used sprainting spot - a large number of spraints of varying ages across the moss overlying the bedrock here.	NM 91180 34696
Spraint	Well-used sprainting spot to the south-east of the bridge on a ledge of bed rock	NM 91217 34390
Couch	Beneath overhang of tree roots, approximately 135m east.	NM 91204 34732
Holt (potential)	Approximately 160m east of bridge.	NM 91218 34749

The habitat under the Connel bridge constitutes the Scottish Priority Marine Feature (PMF) of kelp and seaweed communities on sublittoral sediment.

Refer to Appendix C for Sitelink and NBN search results and pictures of roadside habitat, including field signs of ecological features.

LANDSCAPE

Baseline data has been obtained from the Forestry Commission for Scotland (FCS), RCAHMS, SE and Google Maps online mapping tools. A walkover survey was used to confirm findings.

The works are located across Loch Etive, with woodland and scrubland to the north and largely residential areas to the south. Views to the west comprise of Ardmucknish Bay and Loch Etive extends to the west. The Lora Falls are located directly underneath the scheme.

Refer to Appendix D for landscape imagery within the proposed works

LAND

Baseline data has been obtained from the Macaulay Land Use Research Institute (MLURI), SE and Google Maps online mapping tools. A walkover survey was used to confirm desktop findings.

Land use within 200m of the southern aspect of the scheme is predominantly urban residential properties, with a community facility (Connel Medical Practice) and several commercial properties (see Noise and Vibration section).

On the northern aspect, land use within 200m of the bridge is mainly woodland and scrub land, with some coastal environment. There is a car park / off road layby located approximately 150m from the edge of the bridge to the north-east (NM 91107 34729).

Oban airport is located within 500m north west of the scheme.

Refer to Appendix A for map and table identifying sensitive human receptors

NOISE

Baseline data has been obtained from the Scottish Noise Mapping and Google Maps online mapping tools. A walkover survey was used to note any potential connectivity with properties / receptors identified during the desktop study.

On the southern aspect, there are approximately 40 residential properties within 200m of the bridge. Additionally, there are three commercial properties, The Oyster Inn restaurant and hotel (NM 90932 34280), The Rowans B&B (NM 90957 34248) and the Cnoc-Aruan Sea View property (NM 91252 34383). The Connel Medical Practice (including a GP surgery, pharmacy, coffee shop and hairdresser) is located approximately 150m east of the southern aspect of the bridge (NM 91286 34397).

On the northern aspect, there are no residential, commercial or community receptors within 200m of the bridge.

Areas of trees and scrub land (see Ecology & Nature Conservation) are present along 100m to 150m of the carriageway on both sides. This provides natural noise screening.

Refer to Appendix A for map and table identifying sensitive human receptors

POPULATION AND HUMAN HEALTH

Baseline data on vehicle travellers has been obtained from Transport Scotland and Google Traffic online mapping tools. A walkover survey was used to note any potential connectivity with properties / receptors identified during the desktop study.

The Connel Bridge carries the A828 across Loch Etive, a primary route along the western coast of Scotland which stretches from the A85 at Connel, latterly joining the A82 at South Ballachulish. It is a single lane bridge with traffic signals in place to control traffic crossing the bridge. A 4.2m vehicle height restriction is in place.

Baseline data on non-motorised users (NMUs) has been obtained from Google Maps and Sustrans online mapping tools. A walkover survey was used to determine the level of pedestrian, equestrian and pedal cycle usage and to note any potential connectivity between receptors and the scheme.

The A828 approach road and Connel Bridge itself, form part of the Caledonia Way NCN Route 78.

There are pedestrian footpaths within 200m of the scheme on both sides of A828 approach roads (north and south), as well as the A85 on the southern aspect. A footpath is present on the eastern side of the bridge. There is a footpath from the southern aspect of the bridge off the A828 road leading down to A85 (NM 91117 34339). On the northern aspect, there is a footpath running parallel to an unnamed channel and the shingle shoreline, approximately 60m to 100m west of the approach road to the bridge.

Community facilities are directly accessible from the A85 (NM 91288 34419).

Refer to Appendix E for location of NCN

WATER

Baseline data has been obtained from Scottish Environment Protection Agency (SEPA) online mapping tool. A walkover survey was used to determine the condition of any noted waterbodies and the location of any road drainage outfalls within the study area.

Kerb and gully drainage is in place on both north and south approach roads. Kerb and gully drainage is also present along the A85 on the southern aspect within the study area. On the bridge, water is directed to drains in the middle of the (single) carriageway and discharges directly through the bridge into the sea Loch Etive below.

The bridge crosses Loch Etive (ID: 200073) a transitional waterbody of 29.1km^2 in area. It was rated in 2016 as follows:

- Water Framework Directive (WFD) overall status: Good
- Overall ecology status: Good
- Physio-chemical status: High
- Biological elements: Good
- Hydromorphology: High

An unnamed channel discharges to Loch Etive, approximately 100m west of the bridge on the northern aspect (NM 91012 34614). The channel has a cobble substrate and progressively becomes more braided as it approaches its confluence with Loch Etive (channel width 10m to 15m). At the time of the survey the stage depth of the channel was approximately 10cm.

There is evidence of road drainage from A85 on the southern aspect of the bridge, discharging into Loch Etive, at approximately NM 91050 34366.

Refer to Appendix F for maps and table depicting existing waterbodies in the area.

SOILS & GEOLOGY

Baseline data has been obtained from SNH Sitelink online mapping tool. No sites of special geological interest or regionally important geological sites are noted.

WASTE, MATERIALS AND USE OF NATURAL RESOURCES:

Any sources of pollution are limited to road drainage and localised sewage outfalls from surrounding properties.

Materials to be used for the maintenance programme will include but not be limited to:

- Paint;
- Replacement bearings;
- Replacement expansion joints;
- New road surface;
- Concrete; and
- Replacement parapets.

Waste material will include old paint flakes that have been grit-blasted off the structure, bird guano, and the redundant fixtures and fittings of the bridge that are to be replaced.

APPRAISAL OF RELEVANT ENVIRONMENTAL IMPACTS / ISSUES

This section provides a review and assessment for each environmental topic. Disruption due to Construction is considered within the individual topic assessments as is Impact on Policies and Plans (where applicable). The General sub-section has been added to minimise repetition within the Environmental Impacts sub-sections below. Unless otherwise stated, the study area considered for the assessment of potential impacts extends 200 m in each direction from the centre of the road. Consultation with statutory and non-statutory organisations (where required) is also noted.

GENERAL

The purpose of this document is to report on the potential environmental impacts as a result of maintenance works on the A828 Connel Bridge. The below information outlines what impacts the scheme could have on the environment, recommended considerations and mitigations measures that may be required.

AIR AND CLIMATE

During the construction phase, activities undertaken on site may cause dust and particulate matter to be emitted to the atmosphere. However, taking into account the nature and scale of the works and the good site practice mitigation measures which will be followed during the construction phase (outlined in the SEMP), the desktop and site surveys have confirmed that it is unlikely that the works will have a significant impact on air and climate. This is based on consideration of the following:

(1) Mitigation measures outlined in the SEMP to be adhered to; and

(2) The scheme is located in an open area to allow for free air flow.

CULTURAL HERITAGE AND MATERIAL ASSETS

During the construction and operational phase, works on the bridge itself could potentially damage, alter or modify the characters of the features noted in the baseline section, particularly Connel Bridge itself. However, if the good site practice mitigation measures are followed during the construction phase (outlined in the SEMP), it is considered unlikely that the works will have a significant impact. This is based on consideration of the following:

(1) Mitigation measures outline in the SEMP will be adhered to.

BIODIVERSITY

During the construction phase, activities undertaken on site could potentially have an adverse impact on the biodiversity of the area. However, taking into account the nature and scale of the works and the good site practice mitigation measures which will be followed during the construction phase (outlined in the SEMP), the desktop and site surveys have confirmed that it is unlikely that the works will pose a significant environmental risk. This is based on consideration of the following:

(1) Best practice measures to reduce or avoid insignificant air and climate and noise issues (as outlined in the SEMP) will be adhered to minimise disturbance to species and habitats;

(2) Relevant SEPA Pollution Prevention Guidelines (PPGs) and Guidance for Pollution Prevention (GPPs) will be adhered to (Outlined in the SEMP - Water); and

(3) All mitigation measures for protected species in the SEMP, including the Toolbox talks and any required licenses, will be adhered to.

LANDSCAPE

It is considered unlikely that the works will have an adverse impact on the landscape character or integrity of the surrounding area. This is based on consideration of the following:

(1) Localised and temporary nature of works

(2) Maintenance and repair works to existing structure will not result in fundamental visual changes.

LAND

It is considered unlikely that the works will have an adverse impact on land. This is based on consideration of the following:

(1) Localised and temporary nature of the works; and

(2) Mitigation as detailed in the SEMP will be adhered to.

NOISE

During the construction phase, activities undertaken on site could potentially have an adverse impact on residents in proximity to the works. However, taking into account the nature and scale of the works and the good site practice mitigation measures which will be followed during the construction phase (outlined in the SEMP), the desktop and site surveys have confirmed that it is unlikely that noise associated with the works will lead to significant disruption and/or complaints.

(1) Refer to ‘air and climate’ and ‘noise’ section of the SEMP.

POPULATION AND HUMAN HEALTH

Traffic management will employ lane closures and reduced speed limits. Consideration of likely impacts determined that there will be some minor traffic disruption. However, taking into account the nature and scale of the works and the good site practice mitigation measures which will be followed during the construction phase (outlined in the SEMP), the desktop and site surveys have confirmed that it is unlikely that significant disruption and/or complaints will be encountered. This is based on consideration of the following:

1) Implementation of an appropriate traffic management plan and temporary diversion;

2) Local road users will be informed of the works in advance; and

3) Mitigation as outlined in the SEMP will be adhered to.

Consideration of likely pedestrian impacts has determined that there is potential for some minor disruption. However, taking into account the nature and scale of the works and the good site practice mitigation measures which will be followed during the construction phase (outlined in the SEMP), the desktop and site surveys have confirmed that it is unlikely that significant disruption and/or complaints will be encountered. This is based on consideration of the following:

(1) The works are of a temporary nature;

(2) Appropriate traffic management will be implemented to segregate traffic from NMUs; and

(3) Refer to ‘air and climate’ and ‘noise’ section.

The proposed works will not affect the surrounding local population or human health during the operational phase since works will not result in a change in access. This includes both non-vehicular uses (NMUs) and vehicle users.

WATER

Any construction work has an inherent risk to surface waters and groundwater. Potential contaminants include fuel oils from mechanical plant and dirty water runoff from the construction site. However, taking into account the nature and scale of the works and the good site practice mitigation measures which will be followed during the construction phase (outlined in the SEMP), the desktop and site surveys have confirmed that it is unlikely that the works will pose a significant risk or have an adverse impact on the water environment. This is based on consideration of the following:

(4) Relevant SEPA PPGs/GPPs would be adhered to;

(5) Spill kits, drip trays, bunding and protective shelters will be utilised to prevent pollutions; and

(3) Existing road drainage measures will not be affected by the scheme.

SOILS & GEOLOGY It is considered unlikely that the works will pose a significant risk or have an adverse impact on geology and soils.
WASTE, MATERIALS, AND USE OF NATURAL RESOURCES: Material usage and waste quantities are unknown at this stage: standard provision is given in the SEMP.

APPENDIX A: AIR QUALITY

Figure 1: Potential receptors on southern section of the bridge. Residential properties (yellow polygon), commercial properties (pink point) and community receptor (blue point).

Table 1: Receptor details.

Street / Property Name	Distance from carriageway				No. of Properties
	0-50m	50-100m	100-150m	150-200m	
Residential				X	40
Cnoc-Aruan Sea View			X		1
The Oyster Inn				X	1
The Rowans				X	1
Medical Practice			X		1

APPENDIX B: CULTURAL HERITAGE

Figure 2: RCAHMS PastMap search results accessed 1st May 2018. Listed Buildings marked with brown circles and Barrow Scheduled Monument depicted with brown polygon.

Table 2: RCAHMS PastMap search results accessed 1st May 2018

Table 2: RCAHMS PastMap search results accessed 1st May 2018**Dataset**	**Dataset UID**	**Name**	**OS NGR**	**Classification**
HSLB	LB11986	Connel Bridge, Loch Etive	NM 91118 34495	Listed Building
HSLB	LB11985	St Oran's Church Of Scotland, Connel	NM 91418 34252	Listed Building
HSSM	7280	North Connel, Barrow 85m Ese of Lochnell Arms Hotel	NM 90917 34704	Scheduled Monument

APPENDIX C: ECOLOGY AND NATURE CONSERVATION

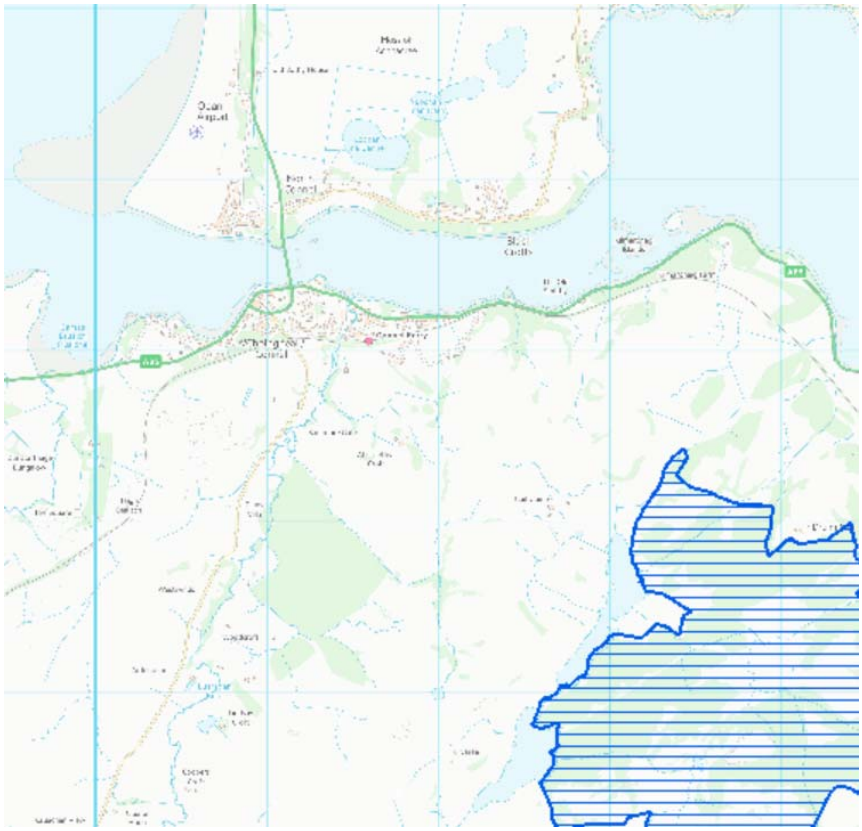

Figure 3: SNH Sitelink search results accessed on 1st May 2018. Loch Etive Woods located 2.5 km south of works (blue hatching).

Table 3: NBN Gateway search results of a 500m radius from Connel Bridge accessed 1st May 2018.

Taxon Name	Common Name	Taxon Group
- *45 Khz Pipistrelle*	*Pipistrellus pipistrellus*	Carl Farmer & Scottish Wildlife Trust
- *55 Khz Pipistrelle*	*Pipistrellus pygmaeus*	Carl Farmer & Scottish Wildlife Trust
- *Badger*	*Meles meles*	Carl Farmer
- *Barn Owl*	*Tyto alba*	Cynthia Grindley & Lorn Natural History Group
- *Blackbird*	*Turdus merula*	Unknown
- *Bluebell*	*Hyacinthoides non-scripta*	Carl Farmer
- *Bullfinch*	*Pyrrhula pyrrhula*	Unknown
- *Canada Goose*	*Branta canadensis*	Carl Farmer
- *Chaffinch*	*Fringilla coelebs*	Unknown
- *Common Frog*	*Rana temporaria*	

			Carl Farmer & Lorn Natural History Group
-	*Common Lizard*	*Zootoca vivipara*	
-	*Common Toad*	*Bufo bufo*	Carl Farmer
-	*Dunnock*	*Prunella modularis*	Carl Farmer
-	*Goldeneye*	*Bucephala clangula*	Unknown
-	*Goldfinch*	*Carduelis carduelis*	Carl Farmer
-	*Great Northern Diver*	*Gavia immer*	Unknown
-	*Greenland White-fronted Goose*	*Anser albifrons*	Carl Farmer Sallie Jack
-	*Greenshank*	*Tringa nebularia*	
-	*Greylag Goose*	*Anser anser*	Carl Farmer
-	*Hedgehog*	*Erinaceus europaeus*	Carl Farmer
-	*Hen Harrier*	*Circus cyaneus*	Carl Farmer Noelle Odling & Lorn Natural History Group
-	*Jackdaw*	*Corvus monedula*	
-	*Jay*	*Garrulus glandarius*	Unknown
-	*Large Heath*	*Coenonympha tullia*	Carl Farmer Max Bonniwell & Lorn Natural History Group
-	*Marsh Fritillary*	*Euphydryas aurinia*	
-	*Moorhen*	*Gallinula chloropus*	Carl Farmer Rob Lightfoot & Lorn Natural History Group
-	*Otter*	*Lutra lutra*	Julie Bowen
-	*Pine Marten*	*Martes martes*	
-	*Red Squirrel*	*Sciurus vulgaris*	Max Bonniwell
-	*Red-Throated Diver*	*Gavia stellata*	Carl Farmer
-	*Song Thrush*	*Turdus philomelos*	Sallie Jack
-	*Starling*	*Sturnus vulgaris*	Unknown
-	*Teal*	*Anas crecca*	Unknown
-	*White-Tailed Eagle*	*Haliaeetus albicilla*	Carl Farmer
-	*Wigeon*	*Anas penelope*	Andy Jones
-	*Woodpigeon*	*Columba palumbus*	Jon Mercer
-	*Yellowhammer*	*Emberiza citrinella*	Unknown Unknown

Figure 4: Masonry archways with bat roost potential (north-west side of Connel Bridge)

Figure 5: Otter couch recorded beneath tree root overhang (NM 91204 34732).

Figure 6: Potential otter holt recorded in bank (NM 91218 34749).

APPENDIX D: LANDSCAPE EFFECTS

Figure 7: Typical view looking north.

Figure 8: Typical view looking south.

Figure 9:Typical view looking east

Figure 10: Typical view looking west

APPENDIX E: PEDESTRIANS, CYCLISTS, EQUESTRIANS & COMMUNITY

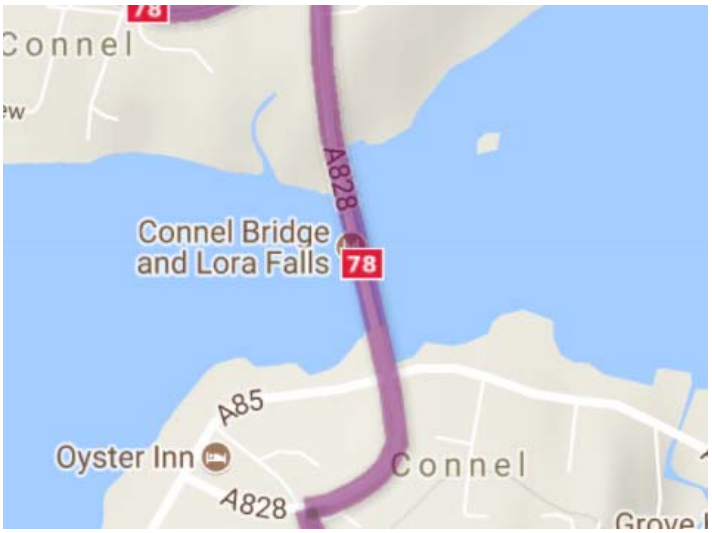

Figure 11: Location of Route 78 of the National Cycle Network.

APPENDIX F: ROAD DRAINAGE AND THE WATER ENVIRONMENT

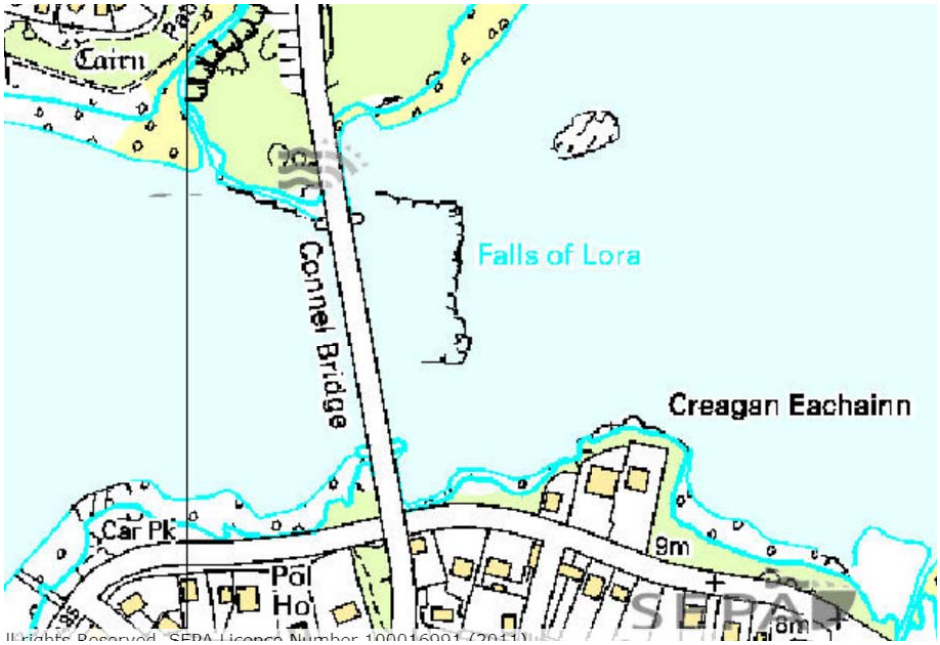

Figure 12: Location plan showing watercourses within works area

Figure 13: Loch Etive (facing south).

Figure 14. Unnamed watercourse 100m west of Connel Bridge (NM 91012 34614), facing south.

Table 4: SEPA RBMP search results.

Waterbody ID	Category	Waterbody Name	Current Overall Classification	Alien Species
200073	Transitional	Loch Etive	Good	High

APPENDIX G: LIST OF CONSULTEES

In order to obtain baseline information and to provide any comments on the Proposed Scheme consultations were undertaken with the following statutory and non-statutory consultees.

Consultees	Environmental Issues Raised										Contact details
	Air quality	Cultural heritage	Ecology & nature conservation	Landscape & Land Use	Noise and Vibration	Vehicle Travellers	NMU & community effects	Road drainage and water environment	Geology and soils	Waste management	
- **Scottish Natural Heritage**			x								[Redacted]
- **Marine Scotland**			x								
- **Scottish Environmental Protection Agency**								**x**			[Redacted]
- **Argyll Fisheries Trust**			x								No response
- **Argyll and Bute Council**		x									[Redacted]

Appendix H: Consultees Correspondence

Scottish Natural Heritage

From: [Redacted]
Sent: 09 April 2018 12:29
To: [Redacted]
Subject: [EXTERNAL] RE: Scope of maintenance work proposed by BEAR for Connel Bridge

Hi Colin,

Thank you for sending through the documentation relating to the maintenance works by BEAR at Connel Bridge.

Connel Bridge

We agree with your conclusion that there will be **no likely significant effect on Loch Etive Woods SAC.** Additionally there will be no impacts on the features of Clais Dhearg SSSI.

Please let me know if you require anything further.

Best wishes,

[Redacted]

[Redacted] **cottish Natural Heritage**

Cameron House | Albany Street | Oban | Argyll | PA34 4AE | Tel [Redacted]

[Redacted] **| Oifigear Obraichean | Dualchas Nàdair na h-Alba**

Taigh Chamshron | Sràid Albany | An t-Òban | Earra- Ghàidheal | PA34 4AE | Fòn: [Redacted]

From: [Redacted]
Sent: 09 April 2018 11:09
[Redacted]

Subject: Scope of maintenance work proposed by BEAR for Connel Bridge

Hi [Redacted]

Following on from our telephone discussion I have attached the documentation that was sent to [Redacted] [Reda (covering letter and detail pertinent to each bridge). As we have just received a response from [Reda n relation to Skye, Carrich, Ballachulish and Dornie, I have also attached the email correspondence.

I should highlight that further clarification was sought by both [Redacted] in relation to the 'minor concrete repair' activity, therefore I have also attached this additional information (email from 23rd March 2018).

Please feel free to call if you have any queries.

Many thanks

[Redacted]

[Redacted]

Marine Scotland

From: MS.MarineLicensing@gov.scot [mailto:MS.MarineLicensing@gov.scot]
Sent: 29 March 2018 08:58
To: [Redacted]
Subject: [EXTERNAL] RE: Marine Licence Applications for 5 year maintenance programme_BEAR Scotland

Hi [Redacted]

Thank you for taking my call yesterday, it was helpful to discuss the proposal.

I would suggest that a separate application is submitted for each of the bridges. The question regarding separate applications being submitted for scour repairs at Dornie and Connel, would be for the applicant to decide. If separate applications are submitted, the other on-going works should be considered in the application.

From my initial review of the documentation, I would not consider any of the works to require PAC.

Kind Regards

[Redacted]

From: [Redacted]
Sent: 16 March 2018 16:09
To: MS Marine Licensing
Cc: [Redacted]

Subject: Marine Licence Applications for 5 year maintenance programme_BEAR Scotland

Dear Sir/Madam

Please find attached a covering letter and relevant supplementary documentation.

Should you have any queries, please feel free to contact me either by email or phone.

Regards

[Redacted]

[Redacted]

Dear Sir/Madam

As part of a proposed bridge maintenance programme, BEAR Scotland, on behalf of Transport Scotland, intend to carry out maintenance and repair work at a number of bridges across Scotland. Jacobs UK Ltd, working on behalf of BEAR Scotland, have been commissioned to prepare and manage the Marine Licence Applications for five bridges:

- A87 Carrich Bridge (approach to Skye Bridge)
- A87 Skye Bridge
- A87 Dornie Bridge
- A82 Ballachulish Bridge
- A828 Connel Bridge

It is intended that the proposed maintenance programmes for each of the five bridges are covered under separate 5-year Marine Licences. This will allow maintenance works to be carried out, when required, during this

5-year period. Therefore, in due course we will be submitting separate Marine Licence Applications, under the Marine Scotland (Act) 2010 Part 4, to cover the proposed maintenance programmes for each of the bridges listed above. A summary of the maintenance works for each bridge is provided within the table below. A detailed description of all the proposed maintenance works for each bridge, including mitigation measures, is provided in the attached documents.

We would welcome any comments from MS-LOT on the intended approach, specifically if MS-LOT could advise whether additional, and therefore, separate Marine Licence Applications, would be required (or advised) at Dornie Bridge and/or Connel Bridge to cover the subtidal scour repair activity. To assist MS-LOT in this regard, we have provided detail on the works and designated sites in the vicinity of each bridge.

The proposed maintenance activities are broken down to 'scheme' and 'cyclic maintenance' works. Scheme represents those works that will be required over the next 5 years, whilst cyclic represents those works which may be required over the same timeframe.

All the bridge maintenance programmes require a limited degree of works to be carried out within the intertidal (between MHWS and MLWS) and/or underneath the bridge. Of the five bridge maintenance programmes, only the proposed scour repair at Dornie Bridge and Connel Bridge will require work below MLWS, in the subtidal environment.

Jacobs will be carrying out a site walkover and otter survey at each bridge which will contribute towards a Site Investigation Note. An Environmental Screening Report and Site Environmental Management Plan for each site will also be produced in due course. These activities will assist in understanding whether EPS licences will be required at each site, with further consultation being sought in the near future once more information is available.

However, recognising the localised and minimal scope of the proposed maintenance activities, we have made some early assumptions regarding the potential to effect designated sites within the vicinity of the bridges.

As Transport Scotland (TS) are the competent authority for roads projects, if it is deemed that there would be a likely significant effect on any of the qualifying interests at the bridges then TS will carry out their own Appropriate Assessment.

Designated Sites: Early Assumptions

Full justifications for these assumptions are provided in the attached documents. A table showing the designated sites (Natura 2000, MPAs and SSSI's) in the vicinity of each bridge is provided below.

We would be grateful if SNH could confirm that they are in agreement with our assumptions for each bridge. The assumptions are based on the adoption of all mitigation measures outlined in the attached documents and are summarised as follows:

Carrich Bridge

It is unlikely that the proposal would have any significant effect (direct or indirect) on the qualifying features of the Inner Hebrides and Minches cSAC (harbour porpoise) or the Lochs Duich, Long and Alsh SAC (reefs).

Any effects on the protected features of the Lochs Duich, Long and Alsh Nature Conservation Marine Protected Area (burrowed mud and flame shell beds) would be insignificant.

Skye Bridge

It is unlikely that the proposal would have any significant effect (direct or indirect) on the qualifying features of the Inner Hebrides and Minches cSAC (harbour porpoise) or the Lochs Duich, Long and Alsh SAC (reefs).

Any effects on the protected features of the Lochs Duich, Long and Alsh Nature Conservation Marine Protected Area (burrowed mud and flame shell beds) would be insignificant.

Dornie Bridge (excluding scour repair)

It is unlikely that the proposal would have any significant effect (direct or indirect) on the qualifying features of the Lochs Duich, Long and Alsh SAC (reefs).

Any effects on the protected features of the Lochs Duich, Long and Alsh Nature Conservation Marine Protected Area (burrowed mud and flame shell beds) would be insignificant.

The proposed works would not affect the important views of the Kintail National Scenic Area (NSA).

Dornie Bridge (scour repair)

There is potential for the proposal to have a significant effect on the qualifying features of the Lochs Duich, Long and Alsh SAC (reefs).

Any effects on the protected features of the Lochs Duich, Long and Alsh Nature Conservation Marine Protected Area (burrowed mud and flame shell beds) would be insignificant.

The proposed works would not affect the important views of the Kintail National Scenic Area (NSA).

Ballachulish Bridge

It is unlikely that the proposal would have any significant effect (direct or indirect) on the qualifying features of the Onich to North Ballachulish woods SAC (woods, forests and otter) or Glen Etive and Glen Fyne SPA (golden eagle).

It is unlikely that the proposal would have any significant effect (direct or indirect) on the features of St Johns Church SSSI (geology) or Onich to North Ballachulish woods SSSI (woodlands, upland habitats and geology).

The proposed works would not affect the important views of the Ben Nevis and Glen Coe National Scenic Area (NSA).

Connel Bridge

It is unlikely that the proposal would have any significant effect (direct or indirect) on the qualifying features of the Onich to North Ballachulish woods SAC or Glen Etive and Glen Fyne SPA.

It is unlikely that the proposal would have any significant effect (direct or indirect) on the features of Clais Dhearg SSSI (dragonflies, butterflies, oligotrophic loch, fens and oak woodland).

Pre-application consultation procedure

Cognisant of regulation 4 of The Marine Licensing (Pre-application Consultation) (Scotland) Regulations 2013, it is our understanding that none of the marine licensable activities proposed for the bridges would require a public pre-application consultation procedure.

In the past, we also understand that due to the scope and scale of proposed bridge maintenance works, BEAR have been informed that no pre-application consultation procedure would be required.

However, acknowledging the scope of the maintenance works contained within the attached documents, we would be very grateful if MS-LOT could advise whether a pre-application consultation statement should be sought for the marine licensable activities at any of the five bridges i.e. if there is any uncertainty that any of the activities may be of a class, or description, prescribed in regulation 4.

We look forward to discussing the above clarifications with MS-LOT and SNH in the near future. Given the project programme constraints, we would be grateful if you could acknowledge receipt of this email and the supporting attachments.

If you have any queries then please don't hesitate to contact either myself or [Redacted]

Kind Regards

[Redacted]

SEPA

From: [Redacted]
Sent: 14 May 2018 10:18
To: [Redacted]
Su Programme

The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended)

The Waste Management Licensing (Scotland) Regulations 2011 (as amended)

Dear [Redacted]

Thank you for your time on the telephone last week to discuss the proposed bridge maintenance at A87 280 Carrich Bridge, A87 245 Dornie Bridge and A87 290 Skye Bridge. And apologies for my delay in response.

To confirm, engineering activities in coastal and transitional waters are not regulated by SEPA under CAR, but by Marine Scotland of which you have already sought consultation with. SEPA would however expect a robust construction method statement. The construction method statement should not however been seen as exhaustive and as work develops there may be additional site specific mitigation measures that require to be incorporated into working methods. There should additionally be continuing supervision of construction operations and ongoing review of the effectiveness of any mitigation measures employed.

Abstraction activities from coastal and transitional waters are CAR Regulated, however you do not require authorisation for the temporary abstraction of water to enable working within a river. River working within the 'CAR A Practical Guide' eludes to being more specific to inland surface water abstractions, we would in this particular case be content to take a local regulatory position that any abstraction for the purpose of concrete repairs to the bridge substructures do not require authorisation under CAR providing returned water does not cause pollution.

Please note that any removed material that has no further use and is to be placed upon the shore, this material is considered a waste and will need to go to a site authorised to receive waste or one that is exempt from the waste regulations. It will also need to be transported with a transfer note and by a waste carrier.

If you have any further queries, let me know.

Kind Regards,

[Redacted]

Environment Protection Officer – West Highland and Argyll

SEPA, Carr's Corner, Lochybridge, Fort William, PH33 6TL

[Redacted]

From: Planning Dingwall
Sent: 01 May 2018 08:59
To: [Redacted]
Cc: [Redacted]
Subject: FW: BEAR bridges maintenance programme

[Redacted]

Hope you're well. The below consultation is below the threshold for which we provide bespoke planning advice but I see there may be some CAR related issues. Can someone from the local team get back to [Redacted]

Thanks

[Redacted]

Planning Service, SEPA, Graesser House, Dingwall Business Park, Dingwall IV15 9XB [Redacted]

From: [Redacted]
Sent: 30 April 2018 15:12
To: [Redacted]
Subject: BEAR bridges maintenance programme

Hi [Redacted]

It's been some time since we last spoke. Hope things are good with you?

As part of a proposed bridge maintenance programme, BEAR Scotland, on behalf of Transport Scotland, intend to carry out maintenance and repair work at a number of bridges across Scotland. Jacobs UK Ltd, working on behalf of BEAR Scotland, have been commissioned to prepare and manage the Marine Licence Applications for five bridges:

- A87 Carrich Bridge (approach to Skye Bridge)
- A87 Skye Bridge
- A87 Dornie Bridge
- A82 Ballachulish Bridge
- A828 Connel Bridge

I am currently involved with progressing Marine Licence Applications for the proposed maintenance of the bridges in your region, namely Skye, Carrich and Dornie. I have attached the proposed scope of maintenance activities, specific to each bridge, in the attached documents.

MS-LOT have confirmed that pre-application consultation is not required for any of these bridges (see attached email). The proposed work at Dornie includes the requirement for scour repair, this work taking place below MHWS and requiring excavation. MS-LOT have confirmed that the scour repair 'excavation' would be classed as a removal activity as opposed to dredging (see attached). The material excavated will be side-cast during the process.

You will note that hydro-demolition is required for several of the proposed activities. Depending on the work, the contractor may wish to discharge water, used in this activity, into the marine environment. If this is necessary then an application for a CAR licence would be made to SEPA.

There are several designated conservation sites that either overlap or are adjacent to the bridges. Initial consultation with SNH has confirmed that with the exception of the scour repair activity at Dornie, none of the activities have the potential for a likely significant effect on the qualifying features of these sites.

Exact dates of these schemes are unknown currently, but a Construction Environmental Management Plan will be produced and adhered to on site (this is not currently in production due to unknown timeframes). SEPA's Pollution Prevention Guidelines (PPGs) and Guidance for Pollution Prevention (GPPs) will be followed during the course of the works, in particular GPP5 'Works and maintenance in or near water'.

Although the MLA has not yet been submitted for each of these bridges we would hope to submit these within the next month. To facilitate the consultation process, we would be grateful if you could advise of anything we should be aware of before the MLA is submitted, or anything that would expedite the process from your perspective.

It would probably be easier to discuss this over the phone and I would be grateful if we could talk sometime this week if you are available.

Many thanks

[Redacted]

[Redacted]

Argyll and Bute Council

From: [Redacted]
Sent: 22 May 2018 15:00
To: [Redacted]
Cc: [Redacted]
Subject: A828 Connel Bridge

[Redacted]

As discussed last week, as part of a proposed bridge maintenance programme, BEAR Scotland, on behalf of Transport Scotland, intend to carry out maintenance and repair work at a number of bridges across Scotland. Jacobs UK Ltd, working on behalf of BEAR Scotland, has been commissioned to prepare and manage the Marine Licence application for the Connel Bridge, and as part of this process has commenced initial consultation. It is intended that the proposed maintenance programme for the bridge will be covered by a five-year Marine Licence. Therefore in due course Jacobs will be submitting an application to Marine Scotland to cover the proposed maintenance programme for the bridge.

As you are aware, the Connel Bridge is category B listed. BEAR Scotland will contact Argyll and Bute Council Planning Service as the works come forward on the major schemes schedule (which would be Painting and Scour Repair schemes) to provide more detail of the proposed works and to request confirmation as to whether listed building consent would be required for the works. Parapet replacement works have been included in the maintenance programme in case any part of the parapets are damaged by a vehicle in the next five years. If that is the case then BEAR Scotland would also contact the Council Planning Service to request confirmation as to whether listed building consent would be required for the parapet replacement works.

If you have any comments at this stage then please contact me.

Regards

[Redacted]

Argyll Fisheries Trust

From: [Redacted]
Sent: 08 May 2018 16:20
To: [Redacted]
Subject: Connel Bridge

Dear Sir/Madam

As part of a proposed bridge maintenance programme, BEAR Scotland, on behalf of Transport Scotland, intend to carry out maintenance and repair work at a number of bridges across Scotland. Jacobs UK Ltd, working on behalf of BEAR Scotland, have been commissioned to prepare and manage the Marine Licence Application for proposed maintenance works at Connel Bridge.

To help understand the baseline environment I am gathering relevant information on the features, including migratory fish. I would be grateful if you could point me towards any recent reports/work that you have which may be of relevance.

Many thanks in advance

[Redacted]

A828 10 Connel Bridge
Scheme Number: 17NW1203/041
5 Year Marine Licence Application

March 2018

Produced for

BEAR Scotland

Prepared by

Jacobs UK

Jacobs UK
160 Dundee Street
Edinburgh
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Organisation	Contact	Copies
MS-LOT	TBC	1
Scottish Natural Heritage	[Redacted]	1
Transport Scotland	[Redacted]	1
BEAR Scotland	[Redacted]	1

BEAR Scotland	[Redacted]	1

Contents

Introduction

Connel Bridge is a 224m long riveted steel truss structure, consisting of two cantilever sections carried on raking 'A' frame main legs supporting a suspended through truss span. It carries the A828 over the mouth of Loch Etive and is located approximately 5 miles north east of Oban, Argyll. Competed in 1903, the bridge is a Category 'B' listed structure. Two 46m long 3-span masonry arch viaducts are located either side of the steel structure.

The bridge was completed in 1903 as a railway crossing and has since been subject to a number of alterations with the bridge currently being open to one lane of traffic on a composite steel and concrete deck.

As part of the 4G NW contract with Transport Scotland for the management and maintenance of the Scottish trunk road network, BEAR Scotland (NW Unit) are responsible for maintenance and improvement schemes on the bridge.

The Connel Bridge at Oban carries the A828 trunk road between North and South Connel over Loch Etive as shown in Figure 1.

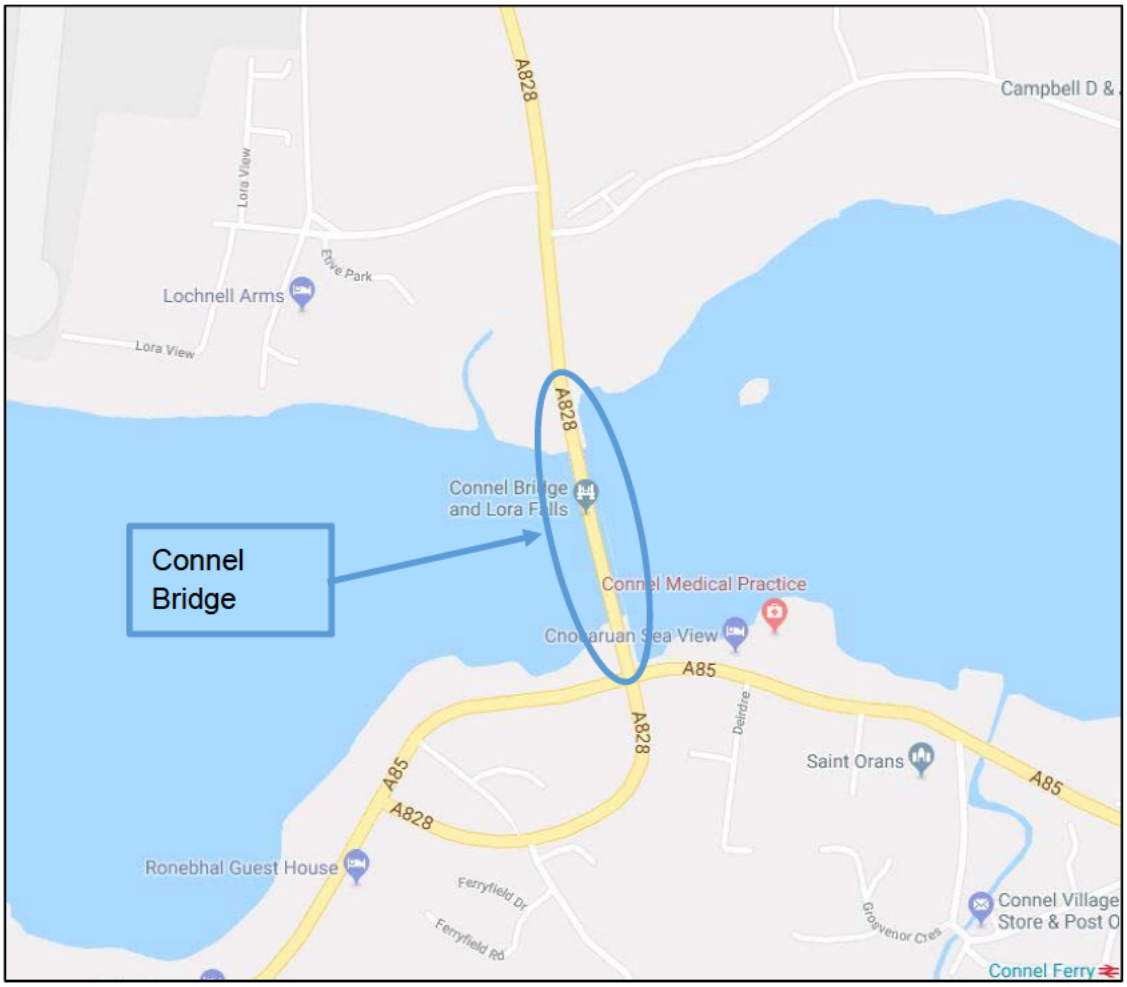

Figure 1: Connel Bridge Location

Background and Objectives

To ensure maintenance schemes with short lead in times are delivered on programme, a 5-year marine licence has been proposed.

This document aims to outline the schemes, cyclic maintenance and inspections planned within the 5 year licence period. Mitigation measures for all maintenance activities are also provided.

In addition, this document details the justifications used for the initial screening of all Natura 2000 sites (Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)), Marine Protected Areas (MPAs) and Sites of Special Scientific Interest (SSSIs) in the vicinity of the proposed works.

Programme of works

Schemes

Painting

Construction period: 2020 to 2021 Construction Value: £5,000,000

The paint on the bridge has reached the end of its working life and is to be replaced. In order to do this, the bridge superstructure is to be grit blasted and repainted. This activity will take between 3 and 6 months to complete.

Outline Method Statement

1. Install temporary access platform underneath the bridge
2. Install containment on the platform
3. Grit blast the superstructure
4. Paint superstructure
5. Move access platform and repeat steps 2, 3 and 4.

The superstructure above deck will also be completed, and fixed scaffolds will be utilised for access.

These works will be carried out above the MHWS.
However, due to the design of the bridge, some painting works will be carried out from a scaffold slung under the bridge. This may impact on the clearance between the bridge and MHWS while the works are ongoing.

Mitigation Measures

In order to prevent the materials entering the marine environment, the following measures will be taken.

1. All painting/grit blasting will be carried out within protective shelters, ensuring that all overspray is enclosed.
2. All grit will be recycled and either re-used or disposed of off-site by licenced waste carriers.
3. Should additional measures be required these will be confirmed with the contractor prior to works commencing.

Scour Repair

Construction period: 2018 to 2020 Construction Value: £600,000

Depending on the results of the point cloud survey, scour protection may be required within the next couple of years. These works involve using jack up barges with excavators on them to place Scour

Protection (usually large rocks) around the pier pile caps. This activity will take between 3 and 6 months to complete.

Outline Method Statement
1. Install jack up barge to required pier location 2. Excavate around pier(s) 3. Dispose of material 4. Install geotextile 5. Place rock armour around piers 6. Demobilise from site.
These works will be carried out below MHWS and some of the works below MLWS.
Mitigation Measures
In order to prevent the materials entering the marine environment, the following measures will be taken. 1. All rock armour will be washed and cleaned prior to installation to ensure that no contaminants are brought into contact with the marine environment. 2. All equipment to be washed down and cleaned prior to use for installing materials.

Cyclic Maintenance

Drainage cleaning

The drainage gullies and pipes on bridge require periodic maintenance to ensure they are effective for draining water from the carriageway. This activity will take up to 2 days to complete.

Outline Method Statement
1. Establish traffic management as required 2. Open kerb gully 3. Clean debris from gulley using vacuum truck or hand tools
These works will be carried out above the MHWS.
Mitigation Measures
In order to prevent the materials entering the marine environment, the following measures will be taken. 1. Gully cleaning vehicles will be used to vacuum water and debris from the gullies. 2. Vacuum trucks are emptied at licenced facilities.

Bird Guano Removal

Bird guano on the bearing shelves requires periodic cleaning and removal to prevent build up. This activity will take up to 2 days to complete.

Outline Method Statement
1. Establish traffic management as required

2. Establish underbridge access unit (lorry mounted or fixed)
3. Clean bearing shelves using hand tools

These works will be carried out above the MHWS.

Mitigation Measures

In order to prevent the materials entering the marine environment, the following measures will be taken.

1. Bird guano will need to be double bagged to prevent spillage.
2. Guano will be taken to a licenced facility.

Expansion Joint Renewal

The expansion joints will require periodic renewal. Connel Bridge has 2 types of joints: type 1 is cast in situ and type 2 are under carriageway joint. These are the original joints installed during construction of the bridge. This activity will take up to 2 months to complete.

Outline Method Statement

Cast in Situ joint	Under carriageway joint
1. Establish traffic management 2. Hydro Demolition of expansion joint and surrounding concrete. 3. Remove existing expansion joint. 4. Install new expansion joint. 5. Concrete in expansion joint 6. Demobilise from site	1. Mill out carriageway over joint 2. Cut out and replace joint. 3. Reinstate asphalt surfacing.

These works will be carried out above the MHWS.

Mitigation Measures

In order to prevent the materials entering the marine environment, the following measures will be taken. There are different measures to be taken with regards to the different types of joints being installed.

Cast In Situ Joint	Under carriageway joint
1. Hydro demolition will require containment and a sump pit to catch off run water. 2. Water will either be pumped into a storage tank and disposed of under licence, or discharged into Loch Etive. A CAR licence will obtained for all discharges.	1. Ensure that all milling works are carried out during suitable periods of weather to ensure that waste material is not blown or washed in the water. 2. Debris netting is to be installed around the area being milled. 3. All waste concrete created by breaking out joint will be removed from site by licenced waste carriers.

3. All waste concrete will be removed from site by licenced waste carriers. 4. Fresh concrete will be poured in such a manner that no concrete is lost or can enter the marine environment.	4. Fresh concrete will be poured in such a manner that no concrete is lost or can enter the marine environment.

Resurfacing Operations

Footpath and road resurfacing requires periodic maintenance and renewal. This activity will take up to 1 week to complete.

Outline Method Statement
1. Establish traffic management 2. Plane/mill out existing surfacing 3. Lay and compact new surfacing 4. Demobilise from site
These works will be carried out above the MHWS.
Mitigation Measures
In order to prevent the materials entering the marine environment, the following measures will be taken. 1. Ensure that all milling works are carried out during suitable periods of weather to ensure that waste material is not blown or washed in the water. 2. Debris netting is to be installed around the area being milled.

Parapet Renewal

The parapet will require periodic renewal. This activity will take up to 4 months to complete.

Outline Method Statement
1. Establish traffic management 2. Install safety barrier 3. Remove existing parapet 4. Install new parapet 5. Remove safety barrier 6. Demobilise from site
These works will be carried out above the MHWS.
Mitigation Measures
In order to prevent the materials entering the marine environment, the following measures will be taken. 1. Edge protection to be installed to ensure materials can't be knocked over the edge of the bridge.

2. Debris netting to be used to stop waste and small items falling over the side.

Minor Concrete Repairs

Minor concrete repairs to both the superstructure and substructure may be required if defects are found during inspections. This will include works on the piers which has the potential to be done under the High tide level. Works will likely entail the use of hydro demolition for large repairs and hand tools for smaller repairs. The duration of these works will vary depending on the extent of the repairs, which will be identified during the inspection. However, the maximum duration of the repairs is anticipated to be 2 to 3 weeks.

Outline Method Statement	
Large repair 1. Establish traffic management. 2. Hammer survey area 3. Hydro Demolition of damaged concrete. 4. Clean steelwork and prepare surface. 5. Install new concrete. 6. Demobilise from site.	Small repair 1. Establish traffic management. 2. Hammer survey area 3. Break out damaged concrete. 4. Clean steelwork and prepare surface. 5. Install new concrete. 6. Demobilise from site.
These works will likely be carried out both above and below the MHWS.	
Mitigation Measures	
In order to prevent the materials entering the marine environment, the following measures will be taken.	
Large repair 1. Hydro demolition will require containment and a sump pit to catch off run water. 2. Water will either be pumped into a storage tank and disposed of under licence, or discharged into Loch Etive. A CAR licence will obtained for all discharges. 3. All waste concrete will be removed from site by licenced waste carriers. 4. Fresh concrete will be poured in such a manner that no concrete is lost or can enter the marine environment.	Smaller repair 1. Debris netting is to be installed around the area being broken out. 2. Containment be installed to prevent concrete falling into the marine environment. 3. All waste concrete will be removed from site by licenced waste carriers. 4. Fresh concrete will be poured in such a manner that no concrete is lost or can enter the marine environment.

Inspections

Inspections

General and principal inspections are completed periodically. These works will not create the potential for materials entering the marine environment.

Point Cloud Survey

A point cloud survey will be undertaken above and below mean high water springs over the entire bridge. These works will not create the potential for materials entering the marine environment.

Early Screening Assumptions

Designated Sites

The table below provides details on European and nationally designated conservation sites in the vicinity (within 5km) of Connel Bridge.

Designated Sites		
Site Name	Qualifying Features	Distance from Connel Bridge
Clais Dhearg SSSI	• Dragonfly assemblage • Marsh fritillary *(Euphydryas aurinia)* • Oligotrophic loch • Open water transition fen • Upland oak woodland	2.1km
Loch Etive Woods SAC	• Otter *(Lutra lutra)* • T*ilio-Acerion* forests of slopes, screes and ravines • Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles • Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)	2.5km

1.1 Screening Assumptions

The proposed maintenance works (see section 3) , are highly localised and confined to the immediate vicinity of the bridge. Likely durations of the activities will in some cases be dependent on the results of the inspections, but in all cases activity duration would be less than 6 months and in many cases less than a few weeks. The proposed maintenance works are therefore considered temporary.

With the exception of the activities 'scour repair', 'painting', 'bird guano removal' and 'minor concrete repairs', all maintenance works will be carried out from the surface of the bridge.

Screening of all proposed maintenance activities

Where there is potential for a specific activity to result in material being released in to the wider environment, including the marine environment, compliance with the proposed mitigation measures (as outlined in Section 3) will reduce the likelihood of any pollutants or debris from entering the environment. These measures include the incorporation of debris netting, protective shelters and containment.

Although the Site Environmental Management Plan (SEMP) has not been finalised for the proposed maintenance activities at this bridge, a number of good practice management measures will be incorporated which will contribute to reducing the potential for effects on the designated sites. These will include:

- The site supervisor will give toolbox talks prior to work commencing. These talks will highlight any sensitive features, including the designated sites, and the importance of adopting the relevant mitigation measures for each activity.

- In line with good practice, the contractor will follow the updated and relevant Guidance for Pollution Prevention (GPPs) including GPP 5 (Works and maintenance in or near water). Pollution Prevention Guidance (PPGs) will be followed if no corresponding GPP is available

- Oils, fuels and chemicals will be stored in fully bunded areas.

- Spill kits will be available on site and workers trained in their use.

- The contractor will produce a contingency plan for dealing with spills or environmental incidents.

- Any waste generated will be removed from site and either recycled or disposed.

The duration of ‘minor concrete repairs’ will not be known until inspections have been carried out, these repairs are anticipated to be a maximum of 2-3 weeks in duration. It is anticipated that ‘bird guano removal’ and ‘resurfacing works’ will take approximately 2 days and 1 week respectively, to complete. The ‘painting’ works will take between 3 and 6 months to complete.

It is anticipated that scour repair work will take approximately 3 to 6 months to complete. This activity will encompass work below MLWS and require excavation from a jack-up barge. The placement of rock

armour around the piers will also be required. To ensure no contaminants are brought into contact with the marine environment all rock armour and equipment will be washed and cleaned prior to installation and use.

Connel Bridge is not located within or immediately adjacent to any Natura 2000 sites, MPAs or SSSIs.

The boundary of the Loch Etive Woods SAC is located approximately 2.5 km inland of the bridge. The SAC is designated for several qualifying features (see Section 5.1); of these, otter is the only mobile qualifying feature. Given the adoption of mitigation and good practice management measures (as outlined in Section 3), the highly localised nature of the works, the short duration of all activities, it is our conclusion that there would be no significant effect on the qualifying features of the SAC, including the mobile feature otter. Therefore, there would be no likely significant effect on the SAC.

The boundary of the Clais Dhearg SSSI is located approximately 2km inland of the bridge. The SSSI is designated for several qualifying features (see above); of these, dragonfly and the marsh fritillary are mobile. Given the adoption of mitigation and good practice management measures (as outlined in Section 3), the highly localised nature of the works, the short duration of all activities, it is our conclusion that there would be no significant effect on the protected features of the SSSI, including the mobile features. Therefore, we have concluded that there would be no significant effect on the SSSI.