



**TRANSPORT
SCOTLAND**
CÒMHDHAIL ALBA

Environmental Statement Review of Design Changes

A887 Allt Lagain Bhain Bridge Replacement

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Introduction

BEAR Scotland Ltd has been commissioned by Transport Scotland to replace the existing A887 Allt Lagain Bhain road bridge. The Allt Lagain Bhain Bridge carries the A887 trunk road which is the main route between the A82 at Invermoriston and the Isle of Skye (via the A87). The site is located at National Grid Reference (NGR) NH 30958 13540 approximately 500 m west of the small settlement of Dundreggan.

Environmental Impact Assessment

The requirement for Environmental Impact Assessment (EIA) is detailed in Sections 20A and 55A of the Roads (Scotland) Act 1984 as amended by The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017. The legislation details projects for which EIA is mandatory (Annex I) and projects for which EIA may be required where specified thresholds have been exceeded and significant effects are considered likely (Annex II). Annex II projects are screened for potentially significant effects with regard to Annex III criteria.

The A887 Allt Lagain Bhain Bridge Replacement is a “Relevant” Annex II project as it is located in part within the River Moriston Special Area of Conservation (SAC). The project was screened initially by Scotland TranServ on behalf of Transport Scotland and, with regard to Annex III criteria, the potential for significant effects was identified and the requirement for EIA determined.

As the A887 Allt Lagain Bhain Environmental Statement (ES) was completed in 2016 and was subject to a scoping procedure prior to 16 May 2017 when the Roads (Scotland) Act 1894 (Environmental Impact Assessment) Regulations 2017 came into effect, it has been assessed in accordance with the Roads (Scotland) Act 1984 as amended by the Environmental Impact Assessment (Scotland) Regulations 1999, hereafter referred to as the EIA Regulations. This is in line with the transitional arrangements as described in The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017.

The completed EIA has directly informed the design process. It will also inform the contract specification, incorporating measures to avoid, reduce, remedy or offset any significant predicted adverse environmental impacts.

Review of Design Changes

Construction works to replace the A887 Allt Lagain Bhain Bridge are now programmed to commence in spring/summer 2024 with a 6-month construction programme.

The completed ES stated that should there be significant amendments and/or variation to the design, an assessment of environmental effects would be carried out as required. This would include consultation with relevant statutory consultees and presentation of the assessment in an Addendum to the ES. Since the A887 Allt Lagain Bhain ES was completed there have been some amendments / changes in the design, which are considered to be minor. As such, BEAR Scotland has produced this document to serve as an assessment of environmental effects on the design changes.

Consultation with the following statutory consultees has been undertaken in light of the design changes:

- Scottish Environment Protection Agency (SEPA)
- NatureScot
- Ness District Salmon Fisheries Board (NDSFB)

No further requirements or mitigations were advised by SEPA or NatureScot in relation to the design changes.

Following discussions with the NDSFB, it has been agreed to include some form of temporary fish pass during construction works which will allow fish movement both up and downstream. The final design of the temporary fish pass will be completed by the appointed contractor and may be a combination of fluming, temporary porta-dam or channel system. The requirement for this mitigation will form part of the contract and will also be detailed in the project Construction Environmental Management Plan (CEMP) which will be adhered to during construction. It will also form part of the licence conditions under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR), which is required to permit in-stream works.

Following environmental review, any changes to the mitigation required will be incorporated into the Scheme Design and CEMP.

Sources of Information

The assessment reported in the following section has been informed by:

- Desk-based study of baseline data gathered for the EIA of the proposed scheme;
- Updated ecology and cultural heritage surveys;
- Review of the ES findings;
- Review of the design drawings; and

Consultation with statutory consultees.

Findings of Environmental Review of Design Changes

Water Monitoring Protocol

Description of Change

The water quality monitoring protocol described in the ES will be modified with a reduction from a total of 4 sampling locations to a total of 2 sampling locations with one of them located upstream and one located downstream of the construction area. The total petroleum hydrocarbons will be removed from the list of parameters for analysis.

There will be a reduction in full parameter analysis during construction from fortnightly to monthly (as per baseline monitoring) supplemented with additional monitoring during high-risk activities.

Biological (macro-invertebrate) water quality monitoring is to be undertaken prior to the works commencing, on at least two occasions (preferably between April and September inclusive) and following construction. In order to determine the long-term pollution status of the site prior and post construction. A sample is to be taken upstream of the works and one downstream on each occasion in order to allow comparison.

Environmental Review

These changes relate only to the monitoring of water quality prior to and during the construction process and do not increase any potential risks associated with this project. Consultation has been carried out with SEPA and it is considered that the revised water quality monitoring protocol is sufficient and fit for purpose for the scale of works being carried out.

The CAR licence conditions will be adhered to at all times.

Changes to Mitigation Design

The number of sampling stations will be revised from a total of 4 sampling stations to a total of 2 sampling locations and the following parameters will be analysed:

Baseline: monthly monitoring of water quality upstream and downstream of the bridge over the Allt Lagain Bhain. Parameters for analysis will include suspended solids, dissolved oxygen, temperature, dissolved and total metals, pH, ammonia, conductivity and turbidity. Samples will be sent to a United Kingdom Accreditation Service (UKAS) laboratory.

Construction Phase: monthly monitoring of water quality upstream and downstream of the Bridge over the Allt Lagain Bhain. Parameters for analysis will include suspended solids, dissolved oxygen, temperature, dissolved and total metals, pH, ammonia, conductivity and turbidity. Samples will be sent to a United Kingdom Accreditation Service (UKAS) laboratory. The monthly sampling will be supplemented with daily visual inspections throughout the construction period to record presence of any construction debris and fuels/oils. Additional monitoring during high-risk activities such as concrete pours and in-stream works to include turbidity, temperature, dissolved oxygen, pH and conductivity (taken using a portable hand-held meter).

Box Culvert Internal Capacity

Description of Change

There will be a reduction in the box culvert internal capacity from 5.5m width and 2.6m height to 5.5m wide and 2.3m height. The skew angle and length remain the same. This change has been made in line with the hydraulic modelling assessment.

Environmental Review

The alteration in culvert sizing meets current standards (which have been modified since the initial design proposals in 2012) and the magnitude of impact will not differ from that stated in the ES.

There will be no changes required to the proposed mitigations. The design will be reviewed by SEPA as part of the CAR licence application process.

Mammal Ledge

Description of Change

There has been a design change to the mammal ledge, this will now be a cantilevered reinforced concrete ledge cast into the box culvert instead of a bolt on mammal ledge.. Additionally, a ledge will be installed on both sides of the box culvert rather than on one side only. As per the previous design, the ledge will have a minimum of 600mm headroom and 500mm width. The ledge will be accessed from the bank/watercourse via a ramp both upstream and downstream of the culvert.

This design change has been made to align with the revised Hydraulic Modelling Report. The ledges will not impede on normal flow conditions.

In addition, having the ledges pre-cast along with the culvert unit will reduce both the time required on site and the risks to operatives as opposed to installing or casting the ledges on site. Additionally there will be operational benefits in relation to reduced maintenance requirements.

Environmental Review

The ES discusses the need for a mammal ledge and this design change will not alter the magnitude of impact and will not differ from that stated in the ES.

The addition of a second ledge provides additional mitigation to that stated in the ES.

Wing Walls

Description of Change

The design of the wing walls has been revised from U-shaped pre-cast sections to separate cantilevered, gravity retaining wall, pre-cast sections.

The simplified design reduces the quantity of reinforced concrete required and therefore reduces environmental impact and cost of pre-cast units. Due to the required splay angles of the wing walls, the U-shaped sections would have been too large and complex to be logistically possible.

Environmental Review

The alteration in wing wall design meets current standards and the magnitude of impact will not differ from that stated in the ES.

There will be no changes required to the proposed mitigations. The design will be reviewed by SEPA as part of the CAR licence application process.

Permanent Carriageway Alignment

Description of Change

The permanent carriageway alignment has been altered to improve the road user's forward visibility. To achieve this, the length of the site was extended and the area of embankment excavation was increased to allow for improved stopping sight distances for road users travelling northbound on the A887.

Environmental Review

There will be a slightly greater permanent land take to allow for the revised permanent carriageway alignment.

Further archaeological investigations were carried out in 2018 and 2019 by Highland Archaeology Services Ltd (HAS) to excavate and record heritage assets (referred to in the ES as 'unrecorded remains at Lagganbane') that were likely to be disturbed or destroyed by the planned works, as per mitigation set out in the ES. Due to the changes of the carriageway alignment, further archaeological excavation and recording was completed in 2022 to inform the assessment of the revised road alignment and land take. The programme of archaeological recording and excavation undertaken in advance of the planned bridge replacement works has characterised and preserved by record the remains of the abandoned late 19th century/early 20th century rural settlement at Lagain Bhain. The remains recorded on the site are still considered to be of local significance, as was previously concluded in the ES. This design change will not alter the magnitude of impact and will not differ from that stated in the ES. There will be no changes required to the proposed mitigations.

Numerous ecology surveys have been carried out between 2016 and 2021 to update the original surveys detailed in the ES. The findings of these have not differed from the baseline detailed in the ES. This design change will not alter the magnitude of impact and will not differ from that stated in the ES. There will be no changes required to the proposed mitigations.

Land take has increased slightly which will result in a marginal increase in the area of Ancient Woodland Inventory (AWI) woodland and woodland not recorded as AWI woodland being lost. The revised realignment predominantly affects land to the east of the bridge which is grassland used as grazing for livestock. This design change will not alter the magnitude of impact and will not differ from that stated in the ES. There will be no changes required to the proposed mitigations.

Temporary Carriageway

Description of Change

The temporary highway alignment will be altered to ensure that there is sufficient space allowed for embankments in both the temporary and permanent alignments so that slope interaction is avoided.

Environmental Review

There will be a slightly greater land take to allow for the revised temporary carriageway alignment. This will be temporary for the duration of construction and will be fully reinstated on completion of the works. This design change will not alter the magnitude of impact and will not differ from that stated in the ES. There will be no changes required to the proposed mitigations.

Structural Materials

Description of Change

There will be a change from GeoGrid Basal Platform to increase the bearing capacity to support the culvert structure to a Class 1A fill 0.5m thick.

The use of fill is to ensure a suitable formation surface is obtained for construction. Ground investigations highlighted variable thicknesses of silt on site. During construction, this layer could be softened. It is also difficult to prove the strength characteristics of this in-situ due to its behaviour; therefore the change of material specification will remove this risk.

Environmental Review

This change in material specification will not alter the magnitude of impact and will not differ from that stated in the ES.

There will be no changes required to the proposed mitigations. The design will be reviewed by SEPA as part of the CAR licence application process.

Downstream Stilling Basin

Description of Change

A stilling basin downstream of the culvert has been included in the revised design to reduce the velocity of water at the outflow of the culvert to protect the downstream banks from erosion.

Environmental Review

The alteration in design meets current standards and aligns with conclusions of the revised Hydraulic Modelling Report. This design change will not alter the magnitude of impact and will not differ from that stated in the ES.

There will be no changes required to the proposed mitigations. The design will be reviewed by SEPA as part of the CAR licence application process.

Fish Passage

Description of Change

Following consultation with the NDSFB, further mitigation to allow upstream and downstream movement of fish during construction will be implemented.

It is proposed that the design will include a temporary channel to allow the movement of small fish upstream and downstream of the work area. The final design will be confirmed by the appointed contractor.

Environmental Review

The proposed mitigation will ensure that small fish will gain access up- and downstream during the works and this will be complimented by electro- fishing when required.

This change would result in additional mitigation to that proposed in the ES for the construction phase. The proposed design will form part of the contract requirements and will also be detailed in the CEMP which includes all mitigations and commitments to be undertaken during the works.

The design will be reviewed by SEPA as part of the CAR licence application process.

Summary

The design changes summarised in this document will not alter the magnitude of impacts and will not differ from those stated in the ES. Where there have been changes to the proposed mitigation measures these will be incorporated into the Scheme Design and CEMP. The significance of effects post mitigation will not differ from those stated in the ES.



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