

Agenda Item	10
Report No	LA/6/20

HIGHLAND COUNCIL

Committee: Lochaber Area

Date: 19 February 2020

Report Title: Corran Narrows Options Development Study – Interim Update

Report By: Executive Chief Officer Infrastructure and Environment

1. Purpose/Executive Summary

- 1.1 This report brings an interim update to Committee for the ongoing Corran Narrows Options Development Study that has been commissioned by three local partner agencies.
- 1.2 The timetable for the Strategic Transport Projects Review (STPR2) means the final report needs to be submitted without delay to ensure consideration within STPR2.

2. Recommendations

- 2.1 Members are asked to:
 - i. note the contents of this report; and
 - ii. delegate the ECO Infrastructure and Environment to:
 - a. submit the final report to Transport Scotland at the earliest opportunity
 - b. prepare a future briefing for Ward 21 Members and
 - c. present follow up reports to the Lochaber Area Committee and Economy and Infrastructure Committee.

3. Implications

- 3.1 Resource
The funding for the Study (one third of the overall cost) is from the existing Transport Planning budget (up to £18k). There are no other resource implications at this stage.
- 3.2 Legal
There is no statutory obligation to notify neighbours at this stage, however some 178 addresses have been sent a notification letter informing them of this report.
- 3.3 Community (Equality, Poverty and Rural)

All options being developed will consider the needs for walking and cycling journeys. This study will include consideration of the wider benefits and impacts arising from each option for the residents and wider community.

3.4 Climate Change / Carbon Clever

The environmental and climate aspects of each option will be considered in the next stage of option appraisal.

3.5 Risk

There is a need to submit the final report to Transport Scotland as early as possible. The costs for each of the options are expected to be significantly high. The business case for change for the options is likely to be compared with other infrastructure options seeking inclusion in the final STPR2.

3.6 Gaelic

Route and destination signs to include Gaelic

4. Background

4.1 The adopted Local Development Plan for West Highland and Islands, known as WestPlan sets out the framework for development proposals and identifies a number of sections of the transport network where improvements are necessary to ease current pressures, support the delivery of future development and encourage more sustainable modes of travel. The following text is copied from WestPlan.

A82 to A861 – Corran Narrows Crossing	Need for enhanced crossing listed in the accompanying Action Programme, shown on the Spatial Strategy Map, transport appraisal of options to be undertaken including consideration of land to be safeguarded from development either side of the narrows to leave open future crossing options.
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4.2 In early 2019 Transport Scotland advised local authorities that the engagement for the Strategic Transport Projects Review (STPR2) would proceed after the appointment of their consultants. STPR2 is a Scotland-wide review of the strategic transport network across all transport modes. It aims to support Scotland's Economic Strategy, including inclusive growth, and will make recommendations for potential transport investments for Scottish Ministers to consider as national investment priorities in an updated 20-year (2022-2042) Infrastructure Investment Plan for Scotland.

4.3 For the STPR2 work Scotland has been divided into 11 regions. The Highlands & Island region includes the following local authority areas: Highland Council, Orkney Islands Council, Western Isles Council, and Moray Council. A series of initial Problem & Opportunity workshops were held across the region in June 2019 including a workshop held in Fort William. A subsequent series of Option Generation workshops were held in December 2019.

4.4 The latest information received from Transport Scotland advises that a Long List of options for the region is in preparation and expected to be shared with local authorities in March 2020. There is a very narrow window to get the Corran Narrows Options fully considered in STPR2.

4.5 The programme for STPR2 includes further public consultation after March 2020.

5. Scope of the Study

- 5.1 This Study is jointly funded by Highland Council, Hitrans and Highlands & Islands Enterprise. The inception meeting was held with the consultant in November 2019. There is ongoing input from officers across several services of the Council.
- 5.2 The Study aims to establish whether a fixed link across the Corran Narrows can feasibly be delivered at an acceptable cost when compared to a ferry-based solution. The Study has been divided into a series of workstreams.

1. Option Development & Costing
a. Case Study Review
b. Environmental Constraints
c. Optioneering
d. Option Assessment
2. Benefits and Transport Economic Efficiency (TEE)
a. Estimation of Present Value of Benefits (PVB)
b. Wider Impacts
c. Appraisal

- 5.3 The comparative costs will consider a 60-year horizon.
- 5.4 The consultant has provided a Briefing Note updating the 3 client organisations. A copy of the document is attached at **APPENDIX A**.
- 5.5 A variety of possible route corridor locations were identified. 2 route corridors have been identified for a low-level bridge, 2 route corridors identified for a high-level fixed bridge, and 1 route corridor for a tunnel.

6. Activities to Complete the Study

- 6.1 The consultant is working on a series of activities including the following core elements associated with part 2 of the Study workstreams:
- establishing a **long list of potential fixed link options** (in terms of structural form) which are potentially feasible to deliver within the route corridors as established above. This process will involve highlighting the advantages and disadvantages of each potential option and an estimation of the capital and whole life cost of the structure.
 - In parallel, the Transport Economic Efficiency (TEE) benefits of a generic fixed link across the Narrows will be established using a **bespoke economic model**.
 - A **high-level qualitative exploration of the potential societal outcomes** and impacts of a fixed link on both sides of the crossing will also be considered, in addition to the **comparative whole-life costs of a fixed link and a ferry**.

Designation: Executive Chief Officer Infrastructure and Environment

Date: 02 February 2020

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Corran Narrows:

Fixed Link Outline Feasibility Study - Briefing Note

Prepared for The Highland Council, HITRANS
& HIE
Prepared by Stantec

Date: January, 2020

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Corran Narrows Fixed Link Outline Feasibility Study

What is the Study?

A high-level outline feasibility study, in line with Scottish Transport Appraisal Guidance (STAG) principles. The study is aimed at establishing whether a fixed link across the Corran Narrows can feasibly be delivered at an acceptable cost when compared to a ferry-based solution, and if so, the setting out of possible alignments and structural form of that fixed link.

Why commission this study now?

Whilst the desire for a fixed link at Corran has been a prominent discussion point for many years, two factors have combined to prompt the requirement for this study.

The future of the ferry service:

Parallel work by The Highland Council (THC) is investigating resolving some of the short-term issues with the ferry service, but there is a requirement for a much longer-term consideration as to whether a ferry or fixed link would provide the best value for money when considered in the widest sense (i.e. social and economic, in addition to financial outcomes). Significant capital expenditure in the ferry service is required in the near future and it is essential to compare the comparative merits of an ongoing ferry service against a fixed link before committing to any new investment.

Strategic Transport Projects Review 2 (STPR2):

STPR2 is a current Transport Scotland study which will inform transport investment in Scotland for the next 20 years, ensuring that investment is in line with the vision, priorities and outcomes set out in the National Transport

Strategy 2 (NTS2).

Whilst this Corran study may identify a fixed link as providing value for money over the long-term, the up-front investment cost is likely to significantly exceed that of a ferry replacement programme. There is therefore an affordability question, particularly within the context of reductions in local authority budgets. Recognising the affordability challenge, THC is seeking to submit the case for a fixed link into the ongoing STPR2, thus progressing it into the national context.



MV Maid of Glencoul

What is the scope of the study?

This piece of work is a **high-level outline feasibility study**. The outcomes emerging from it will require further development, either within the context of STPR2 or as part of a standalone business case comparing ferry and fixed link options. In terms of outcomes, the study will:

- ▶ Review case-study evidence on the cost, procurement and impacts of equivalent fixed links;
- ▶ Identify potential alignments for a fixed link, defined on a corridor basis;
- ▶ Consider the types of fixed link which could be progressed in each corridor;
- ▶ Set out the most appropriate fixed link options within each corridor;
- ▶ Provide a commentary on supporting road infrastructure and tie-ins to the existing network on

both sides of the crossing;

- ▶ Provide high level capital and maintenance cost-banded estimates for each fixed link option;
- ▶ Identify the Transport Economic Efficiency (TEE) benefits of a generic fixed link, relative to a continuing ferry service;
- ▶ Qualitatively explore the potential societal outcomes and impacts of a fixed link on both sides of the crossing (although note that further research will be required to determine the existence and scale of these benefits in the context of the Corran Narrows); and
- ▶ At a high-level, compare the whole life costs of a bridge to continuing with a ferry service.

The output of this process will determine:

- ▶ Whether a fixed link can feasibly be delivered at the Corran Narrows;
- ▶ If so, options in relation to the alignment and structural form
- ▶ Lifetime costs of the fixed link;
- ▶ The wider benefits of a fixed link; and
- ▶ The comparative costs of a fixed link and continued ferry service over a **60-year appraisal horizon**.

At this stage, the study will **not**:

- ▶ Firmly define a preferred option in terms of alignment or structural form;
- ▶ Recommend whether a ferry or fixed link is the most appropriate long-term option for the Corran crossing; or
- ▶ Undertake further engagement with communities and Stakeholders. This engagement would take place once the project proceeds to further detailed appraisal.

What are the key characteristics of the Narrows, that may impact a fixed link?

There are several key characteristics that can influence the selection of an appropriate route corridor and the

end design of a structure in itself. These include:

The Corran Narrows is a **shipping lane**, with increasing numbers of cruise ships including Fort William as part of their itinerary. There are aspirations to continue to grow this market, thus any structural design should not unduly preclude this, with particular respect to air draft¹ (although note that there may ultimately be some trade-off in this respect due to land and design aspects);

The **tidal range and flow** through the Narrows, which is a natural pinch point in Loch Linnhe;

High likelihood of **Coastal Flooding** along both shorelines, influencing the design of any low-level bridge design;

All options must include consideration of NMU infrastructure noting that, the existing Corran Ferry service is part of **National Cycle Route 78** - thus any fixed link should look to integrate this into the design;

Aspirations for the harvesting of **tidal energy** from the Narrows in the future – options should not therefore unduly preclude this;

The **Physical Environment** varies along the coastline on both shorelines, with lowland, steep bluffs, forested areas and small settlements throughout the study area;

The Ardgour Peninsula is situated in close proximity to the **Ardgour Special Landscape Area (SLA)** which although does not prevent the development of a fixed link option, would mainly influence the design to ensure it is sympathetic to the setting in which it is situated;

No **'showstopper' Environmental Constraints** that would prevent the development of a fixed link;

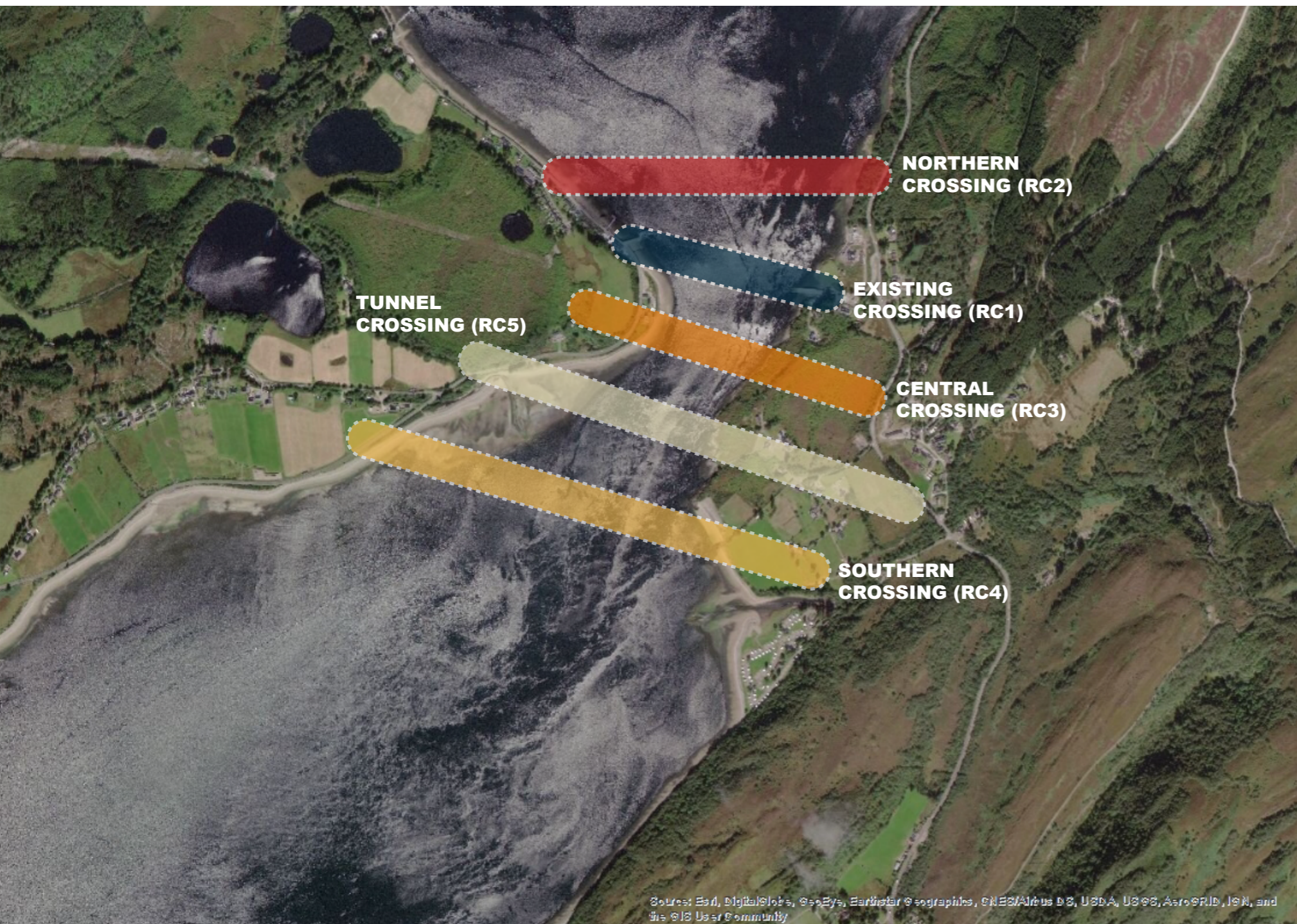
There are several acres of **Ancient Woodland** on both sides of the Narrows, which may require some level of felling to accommodate any fixed link structure - alignment dependent;

Several **New Properties** have recently been constructed within the study area, whilst any future detailed design would need to consider how a fixed link would impact on these properties;

There are no immediate **Planning Policy Constraints** that would prevent the development of a fixed link structure, however, a further detailed review would be required as part of any detailed design stage and application; and

Overall, there is **no single factor** at this stage that would prevent the delivery of a fixed link across the Corran Narrows.

¹ Air draft is the measurement between the surface of the water and the highest point of a vessel



Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- ▶ Low level bridge requiring some form of opening mechanism (RC1 & RC2);
- ▶ High level bridge providing sufficient air draft for shipping (RC3 & RC4); or
- ▶ Tunnel (RC5).

and defined as follows:

Route Corridor 1: Existing Crossing. On the line of the existing ferry crossing (low level bridge), linking Nether Lochaber Ardgour in the vicinity of the current slipways.

Route Corridor 2: Northern Crossing. (low level bridge). This crossing point would link in to the A82 north of the existing access junction to the Corran Ferry on the eastern shore. On the west bank, the crossing point would link into the existing junction of the A861 and James Carmichael Way approximately 270 metres north of the Ardgour slipway.

Route Corridor 3: Central Crossing. (high level bridge). This crossing point would link in to the A82, south of the existing access junction to the Corran Ferry on the eastern shore. On the western shore the crossing point would land on the hill above the Corran Lighthouse and link down onto the A861.

Route Corridor 4: Southern Crossing. (high level bridge). This crossing point would link in to the A82, further south of the existing access junction to the Corran Ferry and just north of the Abhainn Rìgh watercourse. On the western shore, the landing point would be south of the junction of the A861 and the access road to Clovullin.

Route Corridor 5: Tunnel Crossing. Due to the physical constraints imposed within the study area, the potential crossing points for a tunnel fixed link are limited. As such, the identified route for a tunnel is a hybrid of Options 3 and 4 above. On the eastern shore, the entry portal would be located slightly north of the location identified in Option 4 above. The tunnel route would then need to curve along a similar alignment to crossing point 3 due to the length required to minimise inclines, keeping them within the thresholds recommended by the Design Manual for Roads & Bridges (DMRB). On the western shore, the portal would then be located north of the access road to Clovullin.

Looking eastwards across the Narrows from the North Corran War Memorial

What Route Corridors have been considered?

In keeping with the outline feasibility study nature of this work, a variety of possible route corridor locations were identified and investigated to determine the feasibility of developing a fixed link at these points. The locations were narrowed down to **four** potential route corridors within which a bridge could be delivered and **one** corridor in which a tunnel could be delivered.

These route corridors were then explored in terms of the benefits and disbenefits in each case. These route corridors are indicative and by no means firmly define a preferred crossing point. If this study were to progress beyond the feasibility stage, these route corridors will be fully assessed as part of the detailed design stage to assist in identifying a preferred corridor. Public and stakeholder engagement would be a key element of this process. The timetable for this will be steered by the outcome of the STPR2 review.

The route corridors considered as part of this high-level outline feasibility study are illustrated in the image above and defined as follows:



These corridors have been considered at a high-level and are in **no way definitive.**





MV Corran,
Nether Lochaber

How will the study proceed and how will it be reported?

Currently the study is proceeding through the option generation and development stage. This involves establishing a long list of potential fixed link options (in terms of structural form) which are potentially feasible to deliver within the route corridors as established above. This process will involve highlighting the advantages and disadvantages of each potential option and an estimation of the capital and whole life cost of the structure.

In parallel, the Transport Economic Efficiency (TEE) benefits of a generic fixed link across the Narrows will be established using a bespoke economic model. TEE benefits aggregate and monetise savings in terms of journey times and vehicle operating costs and in appraisal are conventionally compared to the financial cost to generate a benefit-cost ratio. A high-level qualitative exploration of the potential societal outcomes and impacts of a fixed link on both sides of the crossing will also be considered, in addition to the comparative whole-life costs of a fixed link and a ferry.

The outputs of this analysis will provide THC, Hitrans, HIE and Transport Scotland with the information required to determine whether a fixed link at Corran is a credible proposition from a financial, appraisal and engineering perspective. This will allow THC, Hitrans and HIE, to consider the next steps for the study, including subsequent submission to STPR2 and subsequent development of the business case.