Lochluichart Estate

OLH Works

Flooding and Erosion Assessment

July 2021

FAIRHURST

CONTROL SHEET

CLIENT: Infinergy

PROJECT TITLE: Lochluichart OHL Works – Flooding Assessment

REPORT TITLE: Flooding and Erosion Assessment

PROJECT REFERENCE: 143965

DOCUMENT NUMBER: 01

STATUS: INFORMATION

Issue & Approval Schedule		Name	Signature	Date
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Revision Record	Rev.	Date	Status	Description	Signature	
	1	09/08/21	FINAL	Figure 2 amended. Recommendations amended	By	JP
					Check	AM
					Approve	AM
	2				By	
					Check	
					Approve	

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1.0 INTRODUCTION

1.1 Background

Fairhurst has been commissioned by Nevis Environmental on behalf of Infinergy (the Client) to provide engineering advice relating to the construction of a new overhead line route from Corriemoillie Sub-Station to the north to facilitate a windfarm extension. The OHL route can be viewed in Appendix A. Following a flood event on 25th August 2017 that resulted in erosion within an existing watercourse channel, and damage to property and infrastructure within Lochluichart Estate (the Estate), it has been deemed prudent to undertake an assessment of existing water features to determine if the proposed construction works are likely to increase the risk of any future flooding event.

Figure 1 – 2017 Flood Event Location

Fairhurst visited the Estate prior to preparing this report on 22nd June 2021, when the weather was dry and sunny. The purpose of the site visit was to walk the OHL route and assess the existing water features. The objectives of the commission are to:

- Provide advice to the Client on the potential effects of development within the catchment of the watercourse, and specifically infrastructure work associated with the overhead line route.
- Make recommendations on areas for future design or assessment work to achieve stabilisation of exiting watercourses.

2.0 Flood Sensitivity

Nevis Environmental advised that flooding had occurred previously in 2008, however it was described by a witness as being much less severe than the event of the 25th August 2017.

It was reported that the severity of the event was localised to the area between Corriemoille and Lochluichart, where flood damage to the A832 trunk road forced a road closure, and there was also wash out of the rail line.

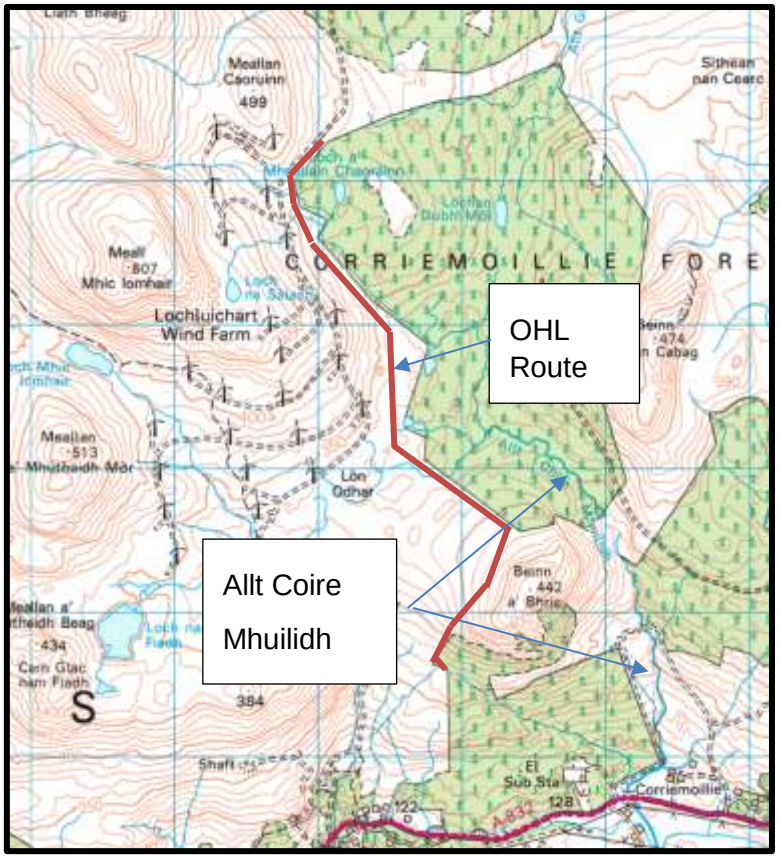


Figure 2 – OHL Route

The proposed OHL route as shown in Figure 2 and Appendix A, is located to the east of the watercourse associated with the previous flood event. A review of the topography has concluded the section north of Beinn a Bhric will have no surface water shedding to the west, therefore have no impact on the watercourses involved in the previous flood events.

A short section at the southern point of the OHL route does fall within the catchment for the watercourse flowing to Lochluichart, however, any discharge into the existing watercourse would be indirect via overland flows therefore mitigating any risk of bank and bed erosion.

As the majority of the catchment falls to the east an assessment was made as to any perceived flood risk due to the OHL for the water Allt Coire Mhuilidh.

A review of the SEPA flood maps for the Allt Coire Mhulidh show fluvial flooding where the watercourse is adjacent to Corriemoillie Lodge, and where it passes underneath the A832. The SEPA flood map can be viewed in Appendix B.

The OHL route crosses three tributaries to the Allt Coire Mhulidh as detailed in Figure 2, and locations below.

2.1 Location 1 - National Grid Reference: NH338659

This location is approximately 500m SE of Lochan Dubh Beag and flows to Allt Coire Mhulidh which is a further 500m to the east.

Looking Upstream	Looking Downstream
	

2.2 Location 2 - National Grid Reference: NH329677

This location is 200m south of Loch a Mheallain Chaorainn. This watercourse discharges into Allt Coire Mhuiligdh

Looking Upstream	Looking Downstream
	

2.3 Location 3 - National Grid Reference: NH328679

This location is 100m south of Loch a Mheallain Chaorainn. This watercourse discharges into Allt Coire Mhulidh.

Looking Upstream	Looking Downstream
	

The proposed haul road will be crossing these tributaries a significant distance from Allt Coire Mhuilidh therefore any flow velocity would be dissipated by the time it discharges into the watercourse and therefore will not have any significant effect on the river. In addition, all tributaries run along ground with a relatively shallow gradient which will result in low flow velocities, minimising any risk and bed or bank erosion.

3.0 Conclusion and Recommendations

3.1 Conclusion

Following the desk study and site walkover it was evident that the proposed OHL route would not contribute to an increase in flood risk in relation to the 2017 flood event.

A risk of any flood even relating to the Allt Coire Mhuilidh is considered to be negligible, however care should still be taken when designing the haul road drainage to not concentrate large catchment areas into the existing burns resulting in a change in flow characteristics with potential for bank and bed erosion.

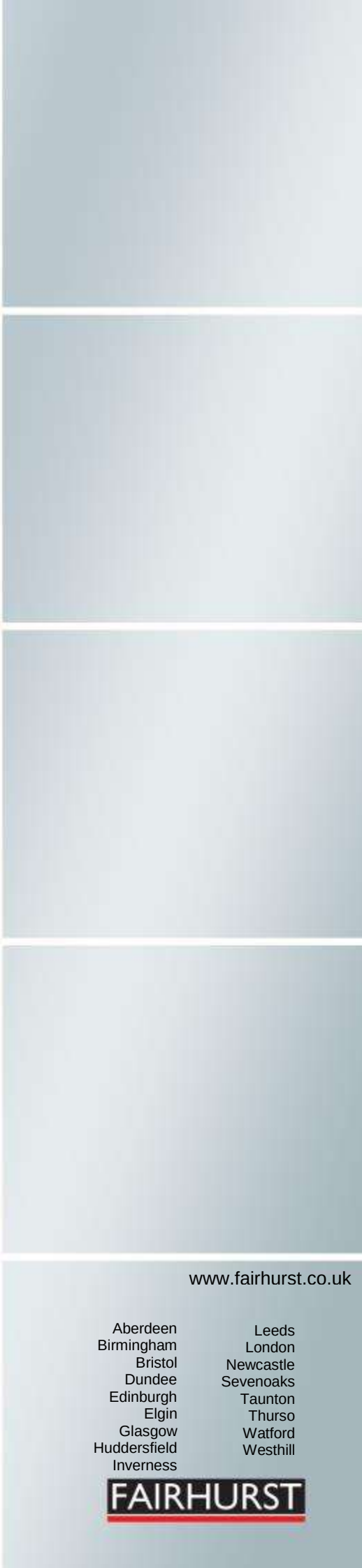
3.2 Recommendations

As found following the flooding event in 2017, a contributing factor was the collection of the surface water and concentrating flows into the watercourse causing erosion and destabilisation.

This report is based on the assumption that haul roads will be used for construction, however it is noted that smaller construction tracks or All-Terrain Vehicles could be used which would reduce any potential flooding risk. To prevent erosion of the existing watercourse it is recommended that outlets from the haul road ditch are spaced to mimic natural catchment areas. It is also recommended that check dams are used in areas where gradients exceed 5% to reduce flow velocity.

Appendix A – Overhead Line Route

Appendix B – SEPA Flood Maps



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