



Abhainn Shalachain Hydroelectric Scheme
Planning Application - Supporting Document

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1 Introduction

1.1 Introduction

This document has been prepared by AECOM on behalf of the Forestry Commission. It accompanies a Planning Application that has been made to The Highland Council under the Town and Country Planning (Scotland) Act 1997, for permission to construct and operate a 0.29 megawatt (MW) run-of-river hydroelectric scheme. The proposed scheme would be located on the Abhainn Shalachain watercourse close to Fiunary on the Morvern Peninsular.

1.2 Project Background

1.2.1 *Forestry Commission Policy on Renewable Energy*

The Scottish Government's aim is that 50% of Scottish demand for electricity is supplied from renewable sources by 2020, with a milestone of 31% by 2011.

The Forestry Commission's aim is to ensure that the potential of the National Forest Estate (NFE) is developed in ways that contribute to the Scottish Government's renewable energy target and, as part of that, Forestry Civil Engineering (FCE), on behalf of Forestry Commission Renewable Energy Business Unit (REBU), is proposing to develop a number of small-scale run-of-river hydroelectric schemes in Scotland.

The Forestry Commission has traditionally leased land to private developers however, it is now to adopt a more proactive and involved role to ensure that this potential is fully realised.

In the short-term it is recognised that due to construction activities, there will be a temporary increase in the release of carbon dioxide. However, in the long term the scheme will contribute to the Scottish and UK Governments' targets for renewable energy generation.

1.2.2 *Abhainn Shalachain Hydroelectric Scheme*

The Forestry Commission is proposing to construct a run-of-river hydroelectric power scheme which would allow them to generate a renewable supply of electricity which would be transmitted to the electrical grid and sold to a licensed electricity supplier.

The scheme would comprise a number of components including an intake on the Abhainn Shalachain watercourse; just below the confluence with the Sruthan na Creige Bain Aird watercourse. It would also include a buried penstock running to the east of the river, an access track, turbine house and a short tail race to return water into a lower section of Abhainn Shalachain. More details regarding the scheme are provided in the following chapter and technical drawings of each component are provided in Appendix A.

1.3 This Planning Application Supporting Document

1.3.1 *Purpose of the Supporting Document*

This document provides an overview of information regarding the potential environmental effects of the proposed hydroelectric scheme and the mitigation to be implemented. Due to the size of the proposed scheme (below the 1MW threshold), the development does not require a formal Environmental Impact Assessment (EIA) as defined by the Environmental Impact Assessment (Scotland) Regulations 1999.

However, as a responsible developer the Forestry Commission is keen to ensure that any activities they undertake have as minimal an environmental impact as possible. In order to take full cognisance of the environmental issues associated with the construction and operation of



the scheme and moreover, to avoid or reduce these where possible, a number of environmental surveys were undertaken to identify potential impacts and mitigation. These surveys have been carried out by external consultants and in-house experts from the Forestry Commission to analyse the potential for impacts on ecology, cultural heritage, landscape, geology and hydrology. The purpose of this document is to summarise the key findings of those surveys.

1.3.2

Contents of the Supporting Document

Following this introductory chapter a description of the scheme is provided in Chapter 2. This includes an explanation of each of the key components of the scheme, followed by a description of activities associated with both the construction and operational phases.

Chapter 3 presents a summary of the environmental reports prepared as part of the development of the proposed hydroelectric scheme. In addition to summaries of these reports, additional information is provided regarding some additional topics. The topics covered are as follows:

- Ecology;
- Hydrology;
- Water Quality;
- Landscape;
- Cultural heritage;
- Land Use
- Geology;
- Socio-Economics; and
- Noise.

1.3.3

Authors of the Supporting Document

This Planning Application Supporting Document has been prepared by AECOM. It provides a summary of comprehensive survey reports prepared by external consultants and environmental professionals from within the Forestry Commission. Additional environmental information relating to water quality, land use, socio-economics and noise has been provided by AECOM. The table below provides an overview of those involved in undertaking the various assessments.

Table 1.1 Report Authors	
Author	Responsibilities
AECOM	Scheme Design Planning Application Support Document Appendix A: Technical Drawings Appendix D Water Quality
MBEC	Appendix B: Ecology
Mountain Environment	Appendix C: Hydrology
Forestry Commission	Appendix E: Landscape
Independent Archaeologist	Appendix F: Cultural Heritage
Forestry Commission	Appendix G: Geology



3.6

Cultural Heritage

3.6.1

Introduction and Methods

A desk-based archaeological survey and a site walkover were carried out to determine the presence of historic features in the study area and to determine whether these would be affected by the proposed hydroelectric scheme.

The desk-based survey of the potential for archaeology was carried out by Dr Jennifer Robertson, an independent archaeologist. This study consulted databases, maps, manuscripts, previous surveys, aerial photographs and a variety of other published sources. A full report of the findings of the desk survey is provided in Appendix F, which contains details of all sources consulted.

The walkover survey was undertaken in May 2009 by Matt Ritchie, an archaeologist from the Forestry Commission. The walkover enabled consideration of the potential for additional sites which had not been identified through the desk study. It also enabled consideration of the potential for the scheme to result in adverse effects on previously identified sites.



3.6.2

Baseline Conditions

The historical background of the area is discussed in the archaeological survey report presented in Appendix F.

Forty archaeological sites were recorded in the desk-based assessment, almost exclusively associated with the agricultural landscape of either Shalachain or Fiunary farms. A description of each of these forty sites is presented in Chapter 6 of the archaeological survey report (Appendix F).

Abhainn Shalachain historically formed the march between the farms of Shalachain and Fiunary and remnants of a physical boundary are still extant, Site 18. A previous investigation, by the writer, of Shalachain township established that this settlement comprised at least two phases: a township and a later farm, Site 1 (occupied into the 20th century). The two different phases can be identified in the field.

Fiunary may also have comprised two phases: an early township (Fynhorra is first recorded in 1545) and a later farm, at one time rented by the minister as an addition to the glebe around Fiunary Manse. The early settlement may underlie the later buildings at Fiunary but a possible early structure has been recorded at NM 617 469 (Gaskell, 1968, 150) with possibly others at Site 34. An early township may have been associated with curvilinear dykes and enclosures, Sites 24, 30 and 31. At a later date, these seem to have been incorporated into a more regular field system, presumably associated with Fiunary Farm.

Analysis of databases identified the presence of three historically important sites. These are:

- NMRS NM64NW15 (HER MHG 561) Shalachain township (Site 1);
- HER MHG 29484 Sheepfold (Site 36); and
- NMRS NM64NW.4 (HER MHG 474) (Site 40).

3.6.3

Assessment of Potential Effects

Of the 40 archaeological sites identified, the desk study highlighted 8 as potentially being on the route of the pipeline and therefore having the potential to be affected by the proposed hydroelectric scheme (Site 2, 18, 22, 23, 24, 27, 30 and possibly 39). The site walkover enabled closer consideration of the sites and the likelihood of adverse effects occurring. No additional sites were identified through the site walkover.

The walkover determined that adverse effects are likely for 3 of the 8 identified sites. Assessments of each site are presented below in Table 3.3.

Table 3.3 Effects on Cultural Heritage		
Site	Description	Assessment
2	Track	Would not be affected by proposed works.
18	Wall	Would not be affected by proposed works.
22	Bridge	Would not be affected by proposed works, although care should be taken to avoid damage when operating nearby.
23	Wall	Would not be affected by proposed works.
24	Enclosure	Would be adversely affected by proposed works (the line of the route will pass through it), although the majority of the enclosure will not be affected and the character / form of the enclosure will be retained.
27	Wall	Would be affected by proposed works (the line of the route will pass through it), although the majority of the dyke will



Table 3.3 Effects on Cultural Heritage		
Site	Description	Assessment
		not be affected and the character / form of the dyke will be retained.
30	Wall	Would be affected by proposed works (the line of the route will pass through it), although the majority of the dyke will not be affected and the character / form of the dyke will be retained.
39	'ruins'	Would not be affected by proposed works.

A further site, Dun Fhionnairidh, a Scheduled Ancient Monument (SAM), is situated to the South of the survey area. No direct effects on the structure itself are predicted and it is located too far from the proposed scheme to require scheduled monument consent. No assessment of effects on the setting of this structure has been carried out. Computer analysis carried out to inform the assessment of effects on visual amenity found that the lower and middle sections of the scheme would be visible from this location. The potential therefore exists for adverse effects on the setting of this SAM.

3.6.4

Mitigation

Mitigation has not been proposed by the archaeologists for any of the three affected sites. Although no adverse effects are predicted for the bridge at site 22 as it is some distance downstream from the site of the turbine house, works are likely to occur nearby and the potential for damage to this structure has been highlighted. This can be avoided by careful operations in the vicinity of the bridge. The Forestry Commission has committed to providing screen planting between site of the turbine house and the Dun Fhionnairidh SAM.



Appendices

Appendix A: Technical Drawings (AECOM)

Appendix B: Ecology (MBEC)

Appendix C: Hydrology (Mountain Environment)

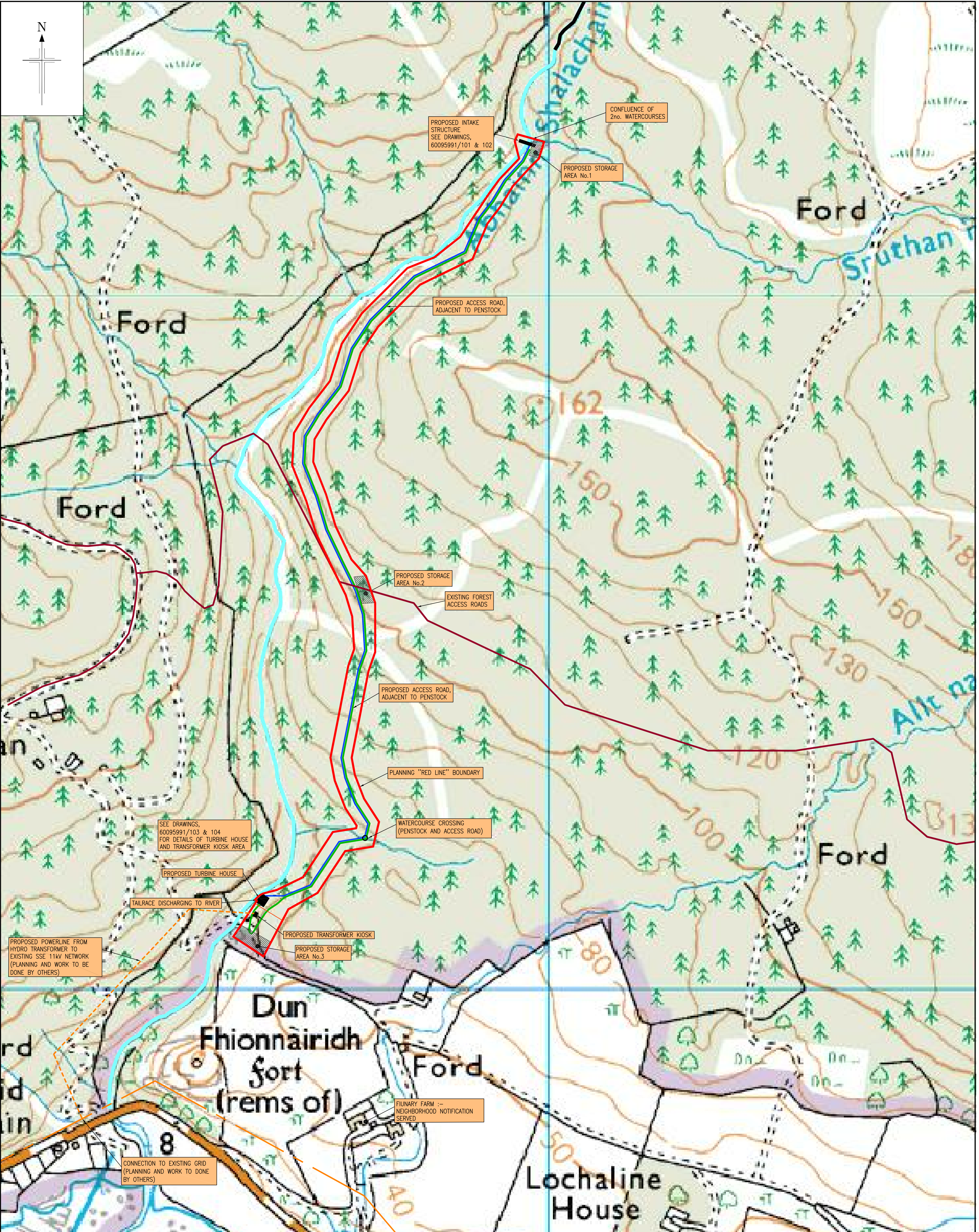
Appendix D: Water Quality (AECOM)

Appendix E: Landscape Report (Forestry Commission)

Appendix F: Cultural Heritage (Independent Consultant / Forestry Commission)

Appendix G: Geology (Forestry Commission)





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