



Technical Appendix 10.3: Schedule of Watercourse Crossings

Carn Fearna Wind Farm

Carn Fearna Wind Farm Limited

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Basis of Report

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1.0 Introduction

SLR Consulting Ltd (SLR) was commissioned by Carn Fearna Wind Farm Limited (the 'Applicant') to undertake a schedule of proposed new and existing watercourse crossings which will be upgraded as part of the proposed Carn Fearna Wind Farm (the Proposed Development).

This report presents photographs and dimensions for each crossing point. The report also details the likely form of the track crossing solution (e.g., culvert, arch culvert, or bridge). The final design of each crossing solution would be agreed with Scottish Environment Protection Agency (SEPA) prior to construction as part of the detailed site design.

A survey of the proposed watercourse crossings was undertaken in July 2024 by experienced SLR hydrologists.

The location of the watercourse crossings is shown in EIA Report Figure 10.1.

1.1 Relevant Legislation

The Water Framework Directive (2000/60/EC) (WFD) has been transposed into Scottish legislation as the Water Environment and Water Services (Scotland) Act 2003 (or WEWS) and has given Scottish ministers powers to introduce regulatory controls over activities in order to protect and improve Scotland's water environment. The water environment includes wetlands, rivers, lochs, transitional waters (estuaries), coastal waters and groundwater. These regulatory controls, known as the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) came into force in 2011 and have since been amended in 2013, 2017, and 2021.

With respect to watercourse crossings, CAR requires that all engineering works in inland surface waters and wetlands are subject to authorisation and allow for proportionate risk-based regulation which is outlined in the CAR Practical Guide. The authorisation process operates at three levels:



- General Binding Rules (GBR):
 - Minor crossings with no construction on bed or banks.
- Registration:
 - Bridges across rivers and lochs where no part of the structure encroaches on the bed (e.g., no piers or in-channel supports). In addition, the total length of the structures on both banks should not be more than 20 m. This category includes bottomless arch culverts; and
 - Closed culverts used for single-track tracks, footpaths and/or cycle routes, where the affected river is not more than 2 m wide.
- Licence (Simple/Complex):
 - All other bridges, fords or causeways; and
 - This category would include bridges affecting more than 20 m total bank lengths, bridges with in-stream supports or closed culverts for crossings not specified above.

SEPA provide authorisation for watercourse crossings shown on the 1:50,000 scale Ordnance Survey (OS) maps (Landranger Series). All other watercourses are classed as "minor watercourse" and are exempt under CAR.





2.0 Watercourse Crossing Details



The locations of new and existing watercourse crossings which may be upgraded as part of the Proposed Development are shown on EIA Report Figure 10.1. Eleven new watercourse crossings and five crossings on or near tracks which are scheduled to be upgraded are required to facilitate the Proposed Development, details of which are included below.

Watercourse Crossing ID	WX01
Watercourse Crossing Details	<p>Grid Reference: E 240423 / N 864097</p> <p>Status: Existing</p> <p>Crossing Type: Circular metal culvert</p> <p>Crossing Size: 1.7 m</p> <p>Watercourse Width: 1.75 m</p> <p>Watercourse Depth: 0.2 m</p> <p>Notes: Watercourse incised in bedrock. Small watercourse / knickpoint is noted upstream of the crossing which is approximately 2 m high.</p>
Photograph Looking Upstream	
Photograph of Culvert Entrance	





Watercourse Crossing ID		WX02
Watercourse Details	Crossing	<p>Grid Reference: E 240427 / N 864092</p> <p>Status: Existing</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: Watercourse was dry during survey and large boulders were noted in the channel bed. Channel is up to 2 m wide and 1 m deep. Watercourse joins Allt Cnoc nan Cleirach upstream of the existing track and crosses the existing track at WX01.</p>
Photograph Upstream	Looking	
Photograph Downstream	Looking	
Potential Crossing Type Likely Required Authorisation	CAR	<p>Culvert Registration</p>





Watercourse Crossing ID	WX03
Watercourse Crossing Details	<p>Grid Reference: E 240820 / N 864118</p> <p>Status: Existing</p> <p>Watercourse Width: 2 m</p> <p>Watercourse Depth: 0.3 m</p> <p>Notes: Watercourse is located adjacent to existing track which is scheduled to be upgraded. Watercourse is incised in bedrock and located within a larger channel which is 4m wide and 1.5m depth.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	
Potential Crossing Type Likely Required CAR Authorisation	Culvert Licence






Watercourse Crossing ID		WX04
Watercourse Details	Crossing	<p>Grid Reference: E 241085 / N 864251</p> <p>Status: New</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: Watercourse was dry during survey. Watercourse is located in a channel which is approximately 0.4m deep and up to 1.5m wide. A 0.4m diameter circular metal culvert is noted downstream of proposed crossing point at the existing track.</p>
Photograph Upstream	Looking	
Photograph Downstream	Looking	
Potential Crossing Type Likely Required CAR Authorisation		<p>Culvert Registration</p>



Watercourse ID	Crossing	WX05
Watercourse Details	Crossing	<p>Grid Reference: E 241843 / N 863977</p> <p>Status: Existing</p> <p>Crossing Type: Circular metal culvert</p> <p>Crossing Size: 1.7m diameter</p> <p>Watercourse Width: 0.3 to 0.7 m</p> <p>Watercourse Depth: 0.3 m</p> <p>Notes: Watercourse located in incised gulley which is approximately 5 m wide and 3 m deep.</p>
Photograph Upstream	Looking	
Photograph of Culvert Exit from Downstream		





Watercourse Crossing ID	WX06
Watercourse Crossing Details	<p>Grid Reference: E 241247 / N 862473</p> <p>Status: Existing</p> <p>Crossing Type: Ford</p> <p>Watercourse Width: 0.5 m</p> <p>Watercourse Depth: 0.1 m</p> <p>Notes: No formal infrastructure. Watercourse incised in bedrock and ponds up to 2m wide at ford crossing. Road drainage in the area is diverted to ford crossing.</p>
Photograph Looking Upstream	
Photograph of Existing Crossing	
Photograph Looking Downstream	




Watercourse Crossing ID		WX07
Watercourse Details	Crossing	Grid Reference: E 242110 / N 861947 Status: New Watercourse Width: 0.9 m Watercourse Depth: 0.1 m Notes: None.
Photograph Upstream	Looking	
Photograph Downstream	Looking	
Potential Crossing Type Likely Required Authorisation	CAR	Culvert Registration



Watercourse Crossing ID	WX08	
Watercourse Crossing Details	Grid Reference: E 243154 / N 862105 Status: New Watercourse Width: 1.2 m Watercourse Depth: 0.3 m Notes: Watercourse incised in bedrock.	
Photograph Upstream		
Photograph Downstream		
Potential Crossing Type Likely Required CAR Authorisation	Culvert Registration	



Watercourse Crossing ID	WX09
Watercourse Crossing Details	Grid Reference: E 243478 / N 862116 Status: New Watercourse Width: 0.4 m Watercourse Depth: 0.5 m Notes: None
Photograph Looking Upstream	
Potential Crossing Type Likely Required CAR Authorisation	Culvert Registration



Watercourse Crossing ID	WX10
Watercourse Crossing Details	Grid Reference: E 243235 / N 862481 Status: New Watercourse Width: 2 m Watercourse Depth: 0.4 m Notes: Watercourse incised in bedrock and located in a slightly larger channel which is approximately 3 m wide and 1.5 m deep.



Watercourse Crossing ID		WX10
Photograph Upstream	Looking	
Photograph Downstream	Looking	
Potential Crossing Type Likely Required CAR Authorisation		Culvert Licence

Watercourse ID	Crossing	WX11
Watercourse Details	Crossing	Grid Reference: E 243409 / N 862530 Status: New Watercourse Width: 0.9 m



Watercourse ID	Crossing	WX11
		Watercourse Depth: 0.2 m Notes: Watercourse located in a channel which is approximately 1.8 m wide and 1 m deep. Bedrock noted along the watercourse bed.
Photograph Upstream	Looking	
Photograph Downstream	Looking	
Potential Crossing Type Likely Required CAR Authorisation		Culvert Registration



Watercourse Crossing ID		WX12
Watercourse Details	Crossing	<p>Grid Reference: E 242892 / N 862691</p> <p>Status: New</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: No watercourse found at proposed crossing location. A more defined watercourse is shown downstream of proposed crossing point towards loch.</p>
Photograph Upstream	Looking	
Photograph Downstream	Looking	
Potential Crossing Type Likely Required CAR Authorisation		<p>Culvert Registration</p>



Watercourse ID	Crossing	WX13
Watercourse Details	Crossing	Grid Reference: E 242572 / N 863262 Status: New Watercourse Width: 0.5 m Watercourse Depth: 0.1 m Notes: Watercourse incised in peat.
Photograph Upstream	Looking	
Photograph Downstream	Looking	
Potential Crossing Type Likely Required CAR Authorisation		Culvert Registration





Watercourse ID	Crossing	WX14
Watercourse Details	Crossing	Grid Reference: E 242561 / N 863286 Status: New Watercourse Width: 0.8 m Watercourse Depth: 0.2 m Notes: None
Photograph Upstream	Looking	
Photograph Downstream	Looking	
Potential Crossing Type Likely Required CAR Authorisation		Culvert Registration



Watercourse Crossing ID		WX15
Watercourse Details	Crossing	Grid Reference: E 242438 / N 863378 Status: New Watercourse Width: 0.4 m Watercourse Depth: 0.1 m Notes: Watercourse incised in peat.
Photograph Upstream	Looking	
Photograph Downstream	Looking	
Potential Crossing Type Likely Required Authorisation	CAR	Culvert Registration



Watercourse Crossing ID		WX16
Watercourse Details	Crossing	<p>Grid Reference: E 242366 / N 863760</p> <p>Status: New</p> <p>Watercourse Width: N/A</p> <p>Watercourse Depth: N/A</p> <p>Notes: No flowing watercourse observed during the survey. Watercourse located in a channel incised in peat which is approximately 0.7m deep and 2m wide.</p>
Photograph Upstream	Looking	
Photograph Downstream	Looking	
Potential Crossing Type		Culvert
Likely Required Authorisation	CAR	Registration





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