



Aultmore Wind Farm Redesign

Technical Appendix 10.4: Water Course Crossing Assessment

Vattenfall Wind Power Ltd

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Basis of Report

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1.0 Introduction

This Appendix contains information relating to the existing and proposed new watercourse crossings at the proposed development.

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

A survey of the proposed watercourse crossings was undertaken in August 2023 by experienced SLR hydrologists.

The location of the watercourse crossings is shown in **Figure 10.1** (Local Hydrology) of **Chapter 10: Hydrology, Hydrogeology and Geology** of the EIA Report.

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):
 - o Minor bridges with no construction on bed or banks.
- Registration:
 - o 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
 - o 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):
 - o All other bridges, fords or causeways; and
 - o 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.



The design, construction and/or improvements to the crossings would be agreed with SEPA prior to any construction works commencing in accordance with CAR as part of the detailed development design.





2.0 Watercourse Crossing Details

2.1 Existing Watercourse Crossings



The location of existing water crossings which are scheduled to be upgraded as part of the proposed development are shown on **Figure 10.1** (WX01 – WX03). Details of which are included below.

Watercourse Crossing ID	WX01
Watercourse Crossing Details	<p>E/N: E346693, N859976</p> <p>Status: Existing</p> <p>Culvert Diameter: 0.3m</p> <p>Culvert Construction Type: Plastic circular culvert</p> <p>Watercourse Width: up to 0.5m</p> <p>Watercourse Depth: 0.01m</p> <p>Notes: Stagnant water with no clear channel upstream. Culvert is heavily vegetated and is noted to be 0.5m below the road surface. Unable to find culvert entrance upstream due to vegetation.</p>
Photograph Looking at Culvert Entrance from Upstream	
Photograph Looking at Culvert Exit from Downstream	



Watercourse Crossing ID	WX02
Watercourse Crossing Details	<p>E/N: E346920, N859901</p> <p>Status: Existing</p> <p>Culvert Diameter: 0.5m</p> <p>Culvert Construction Type: Concrete circular culvert</p> <p>Watercourse Width: up to 1m</p> <p>Watercourse Depth: 0.4m</p> <p>Notes: No clear channel upstream, water has ponded from road drainage. Heavily vegetated.</p>
Photograph Looking at Culvert Entrance from Upstream	 <p>A photograph showing a narrow, shallow watercourse heavily overgrown with dense green vegetation, including ferns and grasses. The water is dark and still, reflecting the surrounding foliage. The culvert entrance is partially obscured by the thick growth.</p>
Photograph Looking at Culvert Exit from Downstream	 <p>A photograph showing the exit of the culvert into a watercourse. The water is dark and surrounded by dense, tall green vegetation, including ferns and grasses. The culvert exit is visible as a narrow opening in the dense growth.</p>



Watercourse Crossing ID	WX03	
Watercourse Crossing Details	<p>E/N: E346867, N859782</p> <p>Status: Existing</p> <p>Culvert Diameter: 0.5m</p> <p>Culvert Construction Type: Concrete circular culvert</p> <p>Watercourse Width: 0.2m</p> <p>Watercourse Depth: 0.4m</p> <p>Notes: Culvert up to 2m below road level. Stagnant water with evidence of ponding containing peaty sediments. Heavily vegetated.</p>	
Photograph Looking at Culvert Entrance from Upstream		
Photograph Looking at Culvert Exit from Downstream		




2.2 New Watercourse Crossings

The locations of proposed new crossings are shown on **Figure 10.1**. Review of which confirms that four new crossings (WX04 – WX07) are required as part of the proposed development, details of which are included below.

Watercourse Crossing ID	WX04
Watercourse Crossing Details	<p>E/N: E340441, N856560 Status: New Watercourse Width: 0.2m Watercourse Depth: 0.4m Notes: Located within a wider channel measuring 1.5m wide.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	
Potential Crossing Type Likely Required CAR Authorisation	<p>Culvert Registration</p>





Watercourse Crossing ID	WX05
Watercourse Crossing Details	<p>E/N: E340458, N856555 Status: New Watercourse Width: 0.2m Watercourse Depth: 0.1m Notes: Located within a deeper channel measuring 0.8m wide.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	
Potential Crossing Type Likely Required CAR Authorisation	Culvert Registration



Watercourse Crossing ID	WX06
Watercourse Crossing Details	<p>E/N: E343131, N858048</p> <p>Status: New</p> <p>Watercourse Width: 0.2m</p> <p>Watercourse Depth: 0.5m</p> <p>Notes: Very little water. Incised channel.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	
Potential Crossing Type Likely Required CAR Authorisation	Culvert Registration



Watercourse Crossing ID	WX07
Watercourse Crossing Details	<p>E/N: E345659, N859152 Status: New Watercourse Width: 0.2m Watercourse Depth: 0.2m Notes: Located within a deeper channel measuring up to 1m wide.</p>
Photograph Looking Upstream	
Photograph Looking Downstream	
Potential Crossing Type Likely Required CAR Authorisation	Culvert Registration

