

# Rampion 2 Wind Farm

## Category 7: Other Documents

### Outline Diver Communication Plan

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## Document revisions

Revision	Date	Status/reason for issue	Author	Checked by	Approved by
A	04/08/2023	Final for DCO Application	GoBe	RED	RED

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# Executive Summary

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This **Outline Diver Communication Plan** (Document Reference: 7.20) (the Outline Plan) sets out the key principles of how Rampion Extension Development Limited (RED) intends to manage and minimise the risk posed by subsea noise to the diving community in Sussex, arising from the construction of Rampion 2.

It contains a number of practical measures which will be implemented during construction, as well as a communications plan for how the diving community will be engaged prior to construction commencing and kept informed of progress with the works.

Communication and proactive liaison with the diving community are key principles for this Outline Plan and include the appointment of a Diving Liaison Officer (DLO) to act as focal point between RED and the diving community, establishment of a comprehensive database of local and regional dive interests and the use of a number of different media and tools to engage and inform those interests. RED will appoint a DLO who has extensive knowledge of local diving clubs and popular diving spots in the surrounding area.

Other key mitigation measures include the use of guard vessels and implementing temporary Diving Exclusion Zones around sites of noise-generating pile driving activity and the use of a 'Soft-Start Procedure' to control noise levels initially to a low level and then gradually ramp up over a period of 20 minutes.

Diver Mitigation was delivered through a Communication Plan during the construction of the Rampion Offshore Wind Farm (Rampion 1). An equivalent protocol to that set out within this document was utilised in order to install a Meteorological Mast at the Project site as well as covering the main construction of Rampion 1, both of which required the piling into the seabed of piled foundations, generating subsea noise emissions during the construction period.

This Outline Plan will continue to be developed and refined into Final Diver Communication Plan (the Final Plan) through seeking advice from the diving community, from appointed experts and from the Health & Safety Executive, to ensure that Rampion 2 will not pose a risk to divers off the Sussex coast.

The production of the Final Plan which shall accord with this Outline Plan, is a requirement of DCO Condition 11(1)(g) of the Schedules 11 and 12.



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# 1. Background

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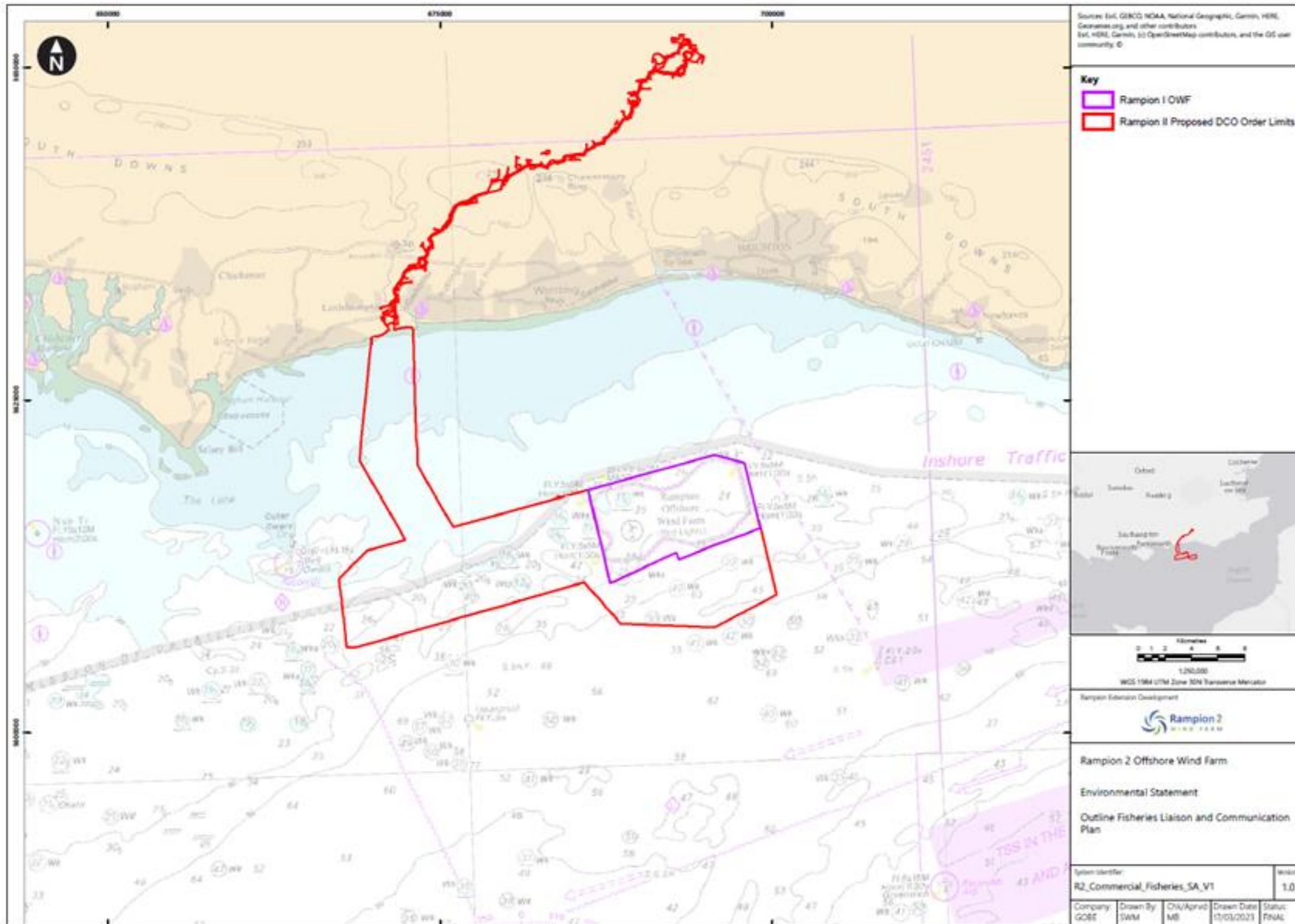
- 1.1.1 Rampion Extension Development Limited (hereafter referred to as 'RED') (the Applicant) is developing the Rampion 2 Offshore Wind Farm Project (Rampion 2) located adjacent to the existing Rampion Offshore Wind Farm Project ('Rampion 1') in the English Channel.
- 1.1.2 Rampion 2 will be located between 13km and 26km from the Sussex Coast in the English Channel and the offshore array area will occupy an area of approximately 160km<sup>2</sup>.
- 1.1.3 The key offshore elements of the Proposed Development will be as follows:
- up to 90 offshore wind turbine generators (WTGs) and associated foundations;
  - blade tip of the WTGs will be up to 325m above Lowest Astronomical Tide (LAT) and will have a 22m minimum air gap above Mean High Water Springs (MHWS);
  - inter-array cables connecting the WTGs to up to three offshore substations;
  - up to two offshore interconnector export cables between the offshore substations;
  - up to four offshore export cables each in its own trench, will be buried under the seabed within the final cable corridor; and
  - the export cable circuits will be High Voltage Alternating Current (HVAC), with a voltage of up to 275kV.
- 1.1.4 The key onshore elements of the Proposed Development will be as follows:
- a single landfall site near Climping, Arun District, connecting offshore and onshore cables using Horizontal Directional Drilling (HDD) installation techniques;
  - buried onshore cables in a single corridor for the maximum route length of up to 38.8km using:
    - ▶ trenching and backfilling installation techniques; and
    - ▶ trenchless and open cut crossings.
  - a new onshore substation, proposed near Cowfold, Horsham District, which will connect to an extension to the existing National Grid Bolney substation, Mid Sussex, via buried onshore cables; and
  - extension to and additional infrastructure at the existing National Grid Bolney substation, Mid Sussex District to connect Rampion 2 to the national grid electrical network.
- 1.1.5 A full description of the Proposed Development is provided in [Chapter 4: The Proposed Development, Volume 2](#) of the ES (Document Reference 6.2).



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Graphic 1-1 Location of Rampion 2



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- 1.1.6 The installation of foundations for Rampion 2 will involve percussive piling of large steel tubes (piles) deep into the seabed using a high energy hydraulic hammer mounted aboard the installation vessel. This will generate substantial subsea noise levels in the direct vicinity of the piling operations, which will diminish over distance from the piling location.
- 1.1.7 Recreational diving is a popular activity off the Sussex coast, benefitting from a high number of wrecks and variable seabed features that create points of interest for divers and the proximity of Brighton, Worthing and other nearby tourist destinations for local, regional and national divers.
- 1.1.8 Within a range of 3km (unmitigated) from the site of piling there is potential for the noise to cause discomfort to divers, or even injury at closer ranges and/or over prolonged periods of exposure. Noise abatement mitigation will be employed for all piling works at Rampion 2, however, which will reduce this to 1.3km based on the efficacy of the most conservative assessment of noise reduction equipment that may be used (PULSE low noise hammer (-6dB)).
- 1.1.9 At larger distances from the piling site, although the noise levels are further reduced and not harmful in themselves, there remains the potential that a sudden unexpected noise could cause a 'startle' effect. In the worst-case scenario, a diver unaware of the source of the noise, particularly as it is more difficult to gauge direction and range of noise underwater, could panic and end up surfacing too rapidly, which depending on the depth of dive could lead to some symptoms of decompression illness (DCI, or 'the bends'). This is likely to be a higher risk potential in less experienced divers and/or those who are unaware that there may be some noise occurring during their dive.
- 1.1.10 The safety of those who use the marine environment for recreational or commercial purposes, those working on Rampion 2 for RED and its appointed contractors are of utmost importance.
- 1.1.11 All health and safety implications arising from this document will be reviewed and captured within the overall project Health, Safety, Security & Environment (HSSE) strategy document and will form part of the project risk and hazard review process, thus ensuring control and mitigation measures are disseminated to all relevant parties associated with the works.

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## 2. Communication Plan

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2.1.1 The Final Plan (as required under dML Condition 11 in Schedules 11 and 12 of the DCO) will incorporate the following elements:

### 2.2 Appointment of a Diving Liaison Officer (DLO)

2.2.1 RED will appoint a DLO with extensive experience working in the diving community in Sussex and will assist RED in compiling a comprehensive database of diving contacts to distribute details of Rampion 2 and information relevant to the diving community.

2.2.2 The role of the DLO will be to ensure the database is kept updated, to advise RED on diving related matters such as popular diving locations in the area or of diving events that are taking place, and to act as a single focal point with relevant expertise to engage with the broad range of groups and individuals who practice or have interests in diving within Sussex.

2.2.3 Red will ensure that the DLO will be engaged until completion of the offshore construction of Rampion 2.

2.2.4 The Final Plan will include the contact details of the DLO, details of their responsibilities, and set out a strategy for how the DLO will distribute the information set out below.

### 2.3 Informing and raising awareness prior to construction

2.3.1 A dedicated page on the Rampion 2 website will be created to inform those in the diving community database at least 3 months in advance of offshore construction commencing. A diver factsheet/ newsletter will be produced by RED and be distributed by the DLO, utilising the database of diving contacts, and will direct readers to the Rampion 2 website. The website, factsheet and newsletter will provide the following information:

- overview of Rampion 2;
- introduction to the issue of piling noise and an explanation of the potential impacts on divers;
- explanation of construction, including the zoning / phasing of construction within the site, installation methods of foundations and turbines, duration and frequency of piling operations and a construction timetable;
- health and safety issues, including the Safety Mitigation Plan and an introduction to the proposed mitigation measures including 'Soft-Start Piling' and Exclusion Zones;
- charts illustrating the Rampion 2 site and layout, wreck sites of interest to divers within the surrounding area and safe distance recommendations; and
- contact details for the DLO and the Rampion 2 Development Manager.

2.3.2 Articles, press releases and advertisements will also be published on the dedicated website, distributed to contacts within the database of diving contacts via email, and posted on relevant social media outlets at appropriate times during the pre-construction period to seek to maximise awareness of the upcoming works.

2.3.3 The Final Plan will include details of when the information above will be distributed.

## 2.4 Face to face engagement

2.4.1 The Final Plan will provide details of additional face to face engagement events to inform the local diving community and allow them to discuss their concerns, such as:

- exhibiting at the national dive show; and
- engaging with local dive clubs.

These engagement events will be publicised using the methods outlined in **paragraph 2.3.2**.

## 2.5 Construction phase updates

2.5.1 The Applicant and their appointed DLO will communicate information prior to commencement of piling works, and ongoing through the construction phase, to the diving community via:

- Notices to Mariners (NtMs) published at key stages during construction;
- coastguard notifications (all dive boats should radio in before commencing their dive and the Coastguard broadcasts warnings);
- email alerts and notifications to the key contacts on the database;
- a dedicated telephone number, with daily pre-recorded message updates regarding the construction, which can take account of changes in the weather;
- a dedicated page available on the Rampion 2 website;
- hyperlinks placed on diver websites, forums and social media to the Rampion 2 website, articles and press releases; and
- signs posted at popular local beaches, slipways, launch points, diving shops, air recharge points, marinas and diving clubs.

### 3. Glossary of terms and abbreviations

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**Table 3-1: Glossary of terms and abbreviations**

<b>Term</b>	<b>Definition</b>
<b>BSAC</b>	British Sub-Aqua Club
<b>CDM</b>	Construction, Design & Management
<b>DCI</b>	Decompression Illness
<b>DCO</b>	Development Consent Order
<b>DLO</b>	Diving Liaison Officer
<b>HSSE</b>	Health, Safety, Security and Environment
<b>NTMs</b>	Notice to Mariners
<b>PADI</b>	Professional Association of Diving Instructors
<b>RED</b>	Rampion Extension Development Limited
<b>WTGs</b>	Wind Turbine Generators
<b>MW</b>	Megawatts



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## 4. References

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Health and Safety Executive, (2015). *The Construction (Design and Management) Regulations 2015*. [Online] Available at: <https://www.hse.gov.uk/construction/cdm/2015/index.htm>. [Accessed: 23 March 2023].



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# Appendix A

## Outline Diver Safety Mitigation Plan

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In seeking to mitigate the risk from activities generating noise, a standard hierarchical approach to risk control has been adopted using the '*Eliminate > Reduce > Control > Inform*' model, as shown in **Table A-1** below.

First priority is given to exploring ways to eliminate a hazard, but if this is not possible, consideration should then be made as to how to reduce it, then control any residual level of hazard and ensure that individuals are informed about the nature of any residual hazard and provided instruction on how to avoid it.

A Final Diver Safety Mitigation Plan will be produced prior to construction and will:

- follow the framework outlined in **Table A-1**;
- be produced in collaboration with the DLO; and
- will incorporate feedback from consultation with diving groups.



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**Table A-1 Proposed mitigation measures to protect the safety of divers**

<b>Control Hierarchy</b>	<b>Method</b>	<b>Objective</b>	<b>Measure Proposed</b>
<b>1</b>	Eliminate	Seek to eliminate the hazard altogether through design or by avoiding the need for piling.	The nature of the Rampion 2 site indicates it will require a substantial number of piled foundations. As it is not possible to eliminate piling noise; the focus must therefore be on 'Reduce – Control – Inform' measures.
<b>2</b>	Reduce	Reduce the noise level either through limiting the noise emission at source or ensuring minimum potential noise exposure.	Use of a temporary Diving Exclusion Zone within 2 km of any piled location which will be patrolled by guard boats during the pile driving operations; should any dive vessels or divers inadvertently come within this exclusion zone, piling will be temporarily suspended until they retreat outside the exclusion zone.
<b>3</b>	Control	Control the noise levels in a manner which allows early warning from lower noise levels to enable individuals to avoid sudden loud noise levels	Use of a 'Soft-Start Piling' technique; Underwater noise will be audible, although at a lower level, over a greater distance outside the 2 km exclusion area, therefore, to avoid unexpectedly startling anyone diving during this period outside the exclusion zone, the energy level of the pile driving will be gradually built up over a period of 20 minutes.

Control Hierarchy	Method	Objective	Measure Proposed
4	Inform	Ensure that those who may be exposed to the residual hazard are suitably informed from the above measures being implemented, are aware of the hazard and the need to observe the controls put in place	<ul style="list-style-type: none"> <li>i) Appointment of a DLO;</li> <li>ii) Implementation of comprehensive Communications Plan with the diving community – including Diver Factsheet/Newsletter and Construction Updates immediately prior to and during construction.</li> </ul> <p>General awareness of the Project, construction timescales, and specific notice of when piling will be happening, will ensure the dive community can plan dives appropriately and those who choose to dive out towards the Rampion site will be aware of the likelihood of underwater noise, which in combination with the soft start procedure will ensure no one is subjected to a sudden noise ‘startle’ effect.</p>

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