

MONA OFFSHORE WIND PROJECT

Preliminary Environmental Information Report

Volume 7, annex 17.2: Surface watercourses and NRW Flood Zones



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Final

Image of an offshore wind farm

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Glossary

Term	Meaning
Flood Zone 1	Low Probability Land having a less than 1 in 1,000 annual probability of river or sea flooding.
Flood Zone 2	Medium Probability Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding, or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Flood Zone 3a	High Probability Land having between a 1 in 100 or greater annual probability of river flooding, or land having between a 1 in 200 or greater annual probability of sea flooding
Flood Zone 3b	The Functional Floodplain. The zone comprises land where water has to flow or to be stored in times of flood.

Acronyms

Acronym	Description
MHWS	Mean High Water Springs
NRW	Natural Resources Wales
OS	Ordnance Survey

Units

Unit	Description
km	Kilometres
m	Metres

1 SURFACE WATERCOURSES AND NRW FLOOD ZONES

1.1 Introduction

1.1.1.1 This Hydrology and flood risk technical report identifies surface watercourses and flood zones within the Mona hydrology and flood risk study area. This information has been used to inform the baseline and impact assessment on hydrological and flood risk receptors from the Mona Offshore Wind Project as reported in volume 3, chapter 18: Hydrology and flood risk of the Preliminary Environmental Information Report.

1.2 Study area

1.2.1.1 The Mona hydrology and flood risk study area focuses on areas landward of Mean High Water Springs (MHWS) and is described below and shown on Figure 1.1:

- The area of land to be temporarily or permanently occupied during the construction, operation and maintenance and decommissioning of the Mona Offshore Wind Project (hereafter referred to as the Mona Proposed Onshore Development Area).
- Surface water receptors and flood risk receptors located within 250m of the Mona Proposed Onshore Development Area (excluding the Mona Onshore Substation). The 250m buffer is considered appropriate for data collection taking into account the likely zone of influence by hydrological receptors. The buffer has also been chosen to identify any existing receptors, assets or infrastructure that have the potential to be affected by temporary flood risk as a result of the Mona Offshore Wind Project.
- Flood risk receptors located within 1km of the Mona Onshore Substation Area. The 1km buffer was chosen primarily to identify any existing receptors, assets or infrastructure that have the potential to be affected by flood risk as a result of the Mona Offshore Wind Project.

1.3 Methodology

1.3.1.1 The information within this technical report has been identified through a desktop study using the following information:

- Ordnance Survey (OS) Open Rivers Mapping Data
- Natural Resources Wales (NRW) Flood Map for Planning

1.3.1.2 Surface water catchments have been identified from the Western Wales River Basin Management Plan (NRW, 2022) (see Figure 1.2).

1.3.1.3 The NRW indicative Flood Zones show the probability of river and sea flooding and do not consider the presences of defences (see Figure 1.3 to Figure 1.7).

1.3.1.4 Flood zone definitions are presented below:

- Zone 1 Low Probability Land which has a less than 1 in 1,000 annual probability of river or sea flooding.

- Zone 2 Medium Probability Land which has between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
- Zone 3a High Probability Land which has a 1 in 100 or greater annual probability of river flooding; or land having a 1 in 200 or greater annual probability of sea flooding.
- Zone 3b The Functional Floodplain which comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with NRW.
- The mapping has been produced using Product 5 and 6 data from the Point of Ayr to Pensarn 2017 coastal flood model was obtained from NRW and provides flood extents and depths as a result of coastal defence overtopping and breach. The modelling additionally assessed how flood depths and extents will evolve with climate change; with flood model outputs for the present-day and 2117 scenarios.

1.3.1.5 Product 5 and 6 data from the Point of Ayr to Pensarn 2017 coastal flood model was obtained from NRW. The model provides flood extents and depths as a result of coastal defence overtopping and breach. It also assesses how flood depths and extents will evolve with climate change and provides flood model outputs for the present-day and 2117 scenarios. Flood maps have been generated for the Mona landfall area (see Figure 1.8 to Figure 1.12).

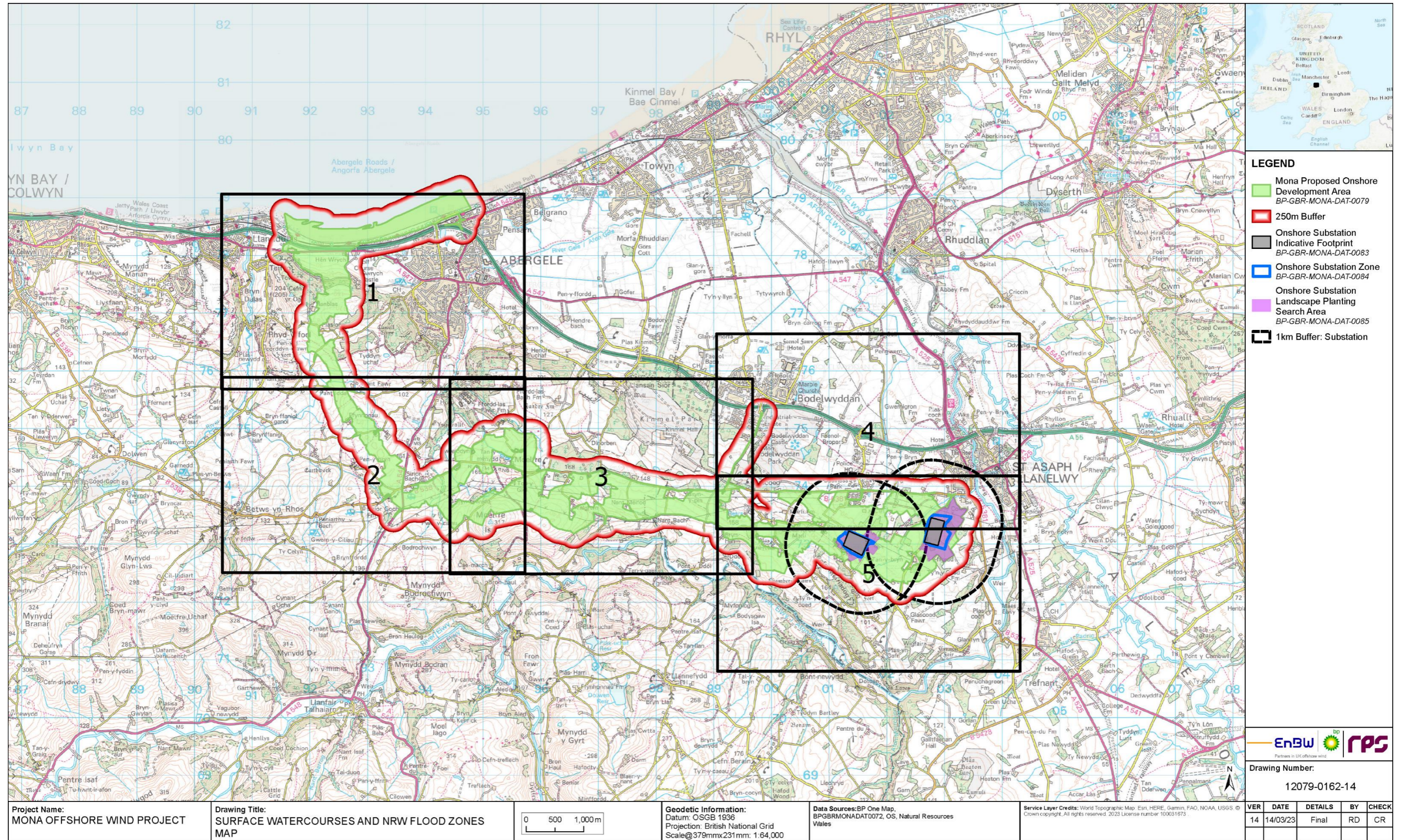


Figure 1.1: Overview of surface watercourses within the Mona hydrology and flood risk study area.

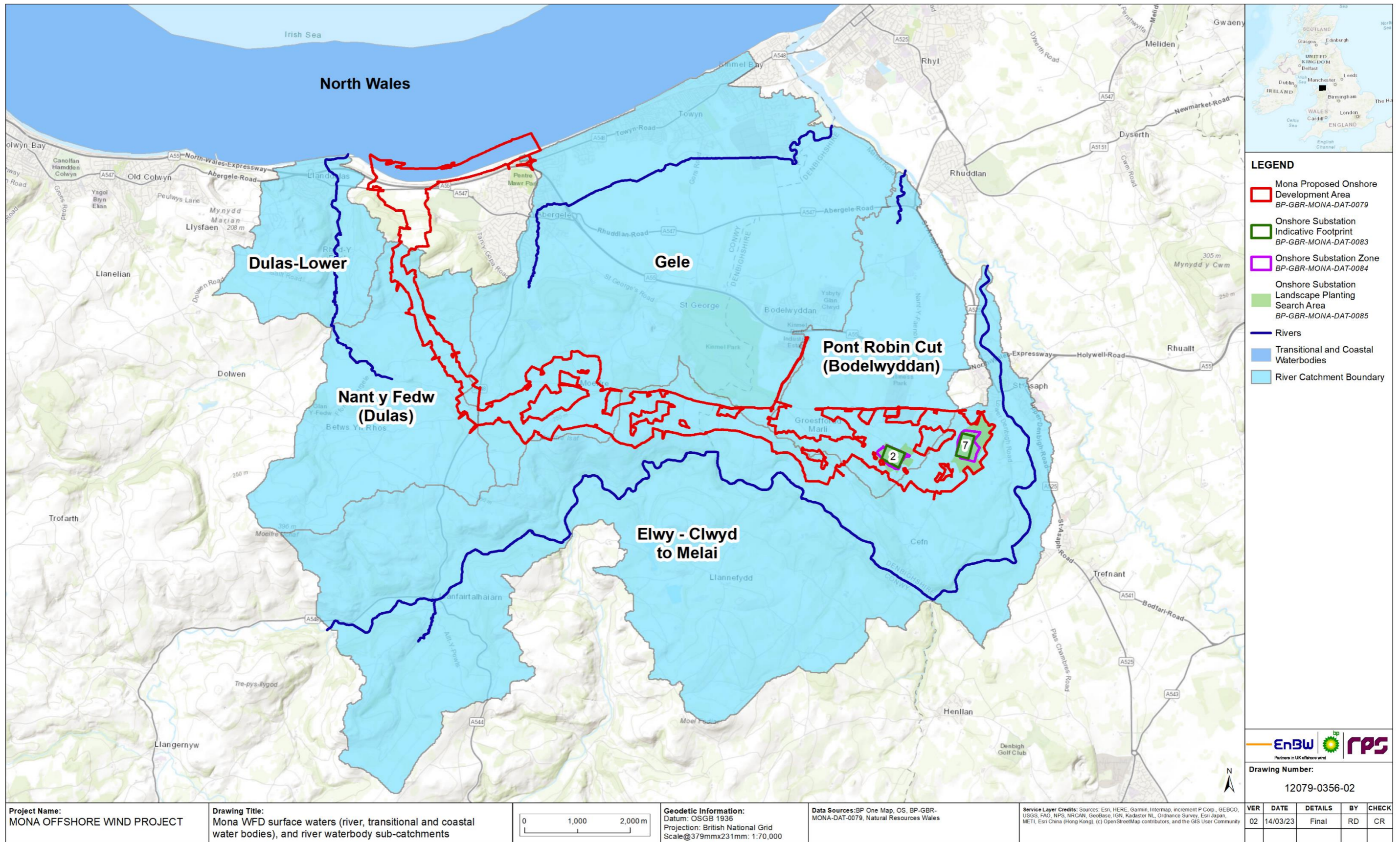


Figure 1.2: Surface water and transitional coastal water catchment plan

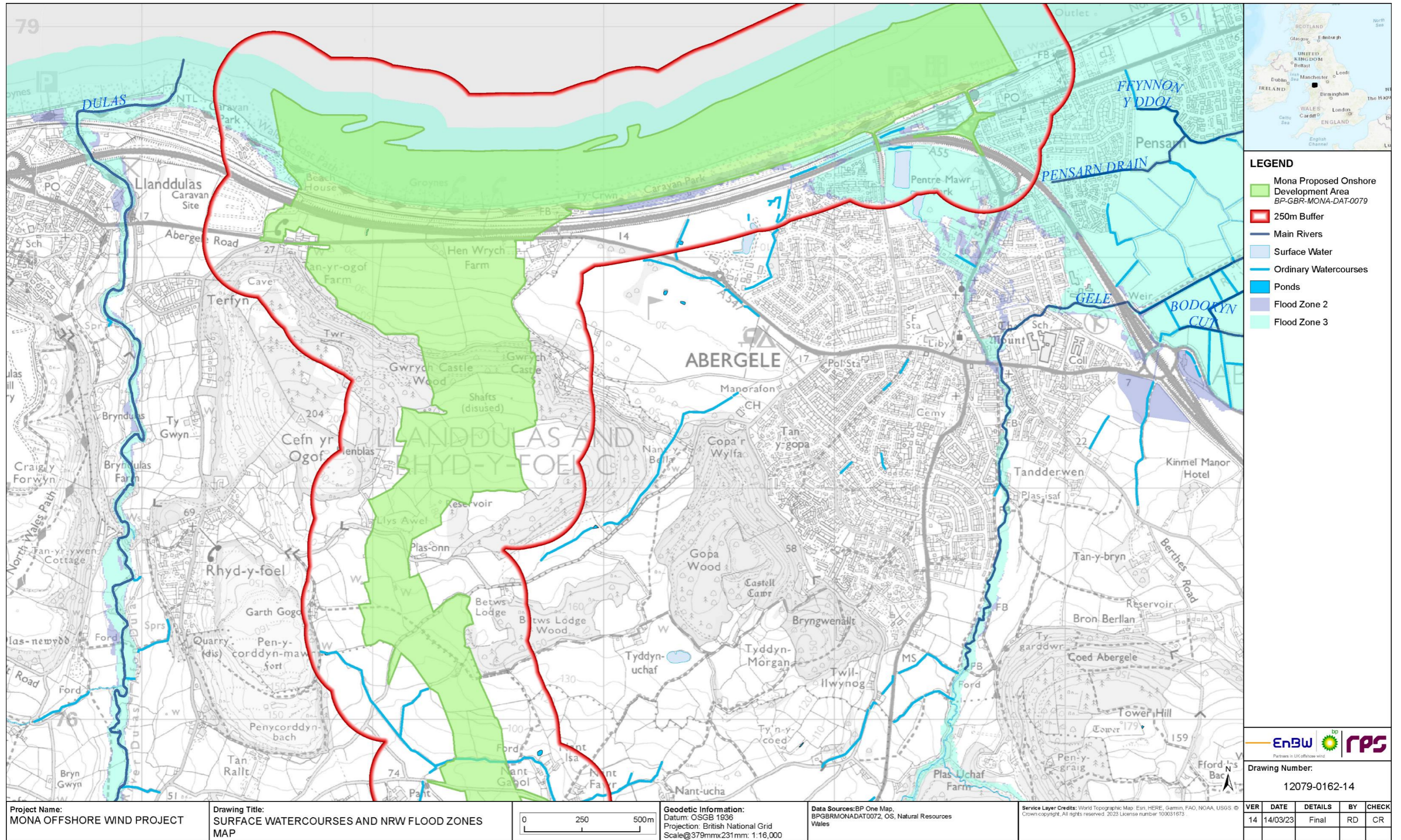


Figure 1.3: Surface watercourses and NRW flood zones within the Mona hydrology and flood risk study area (sheet 1).

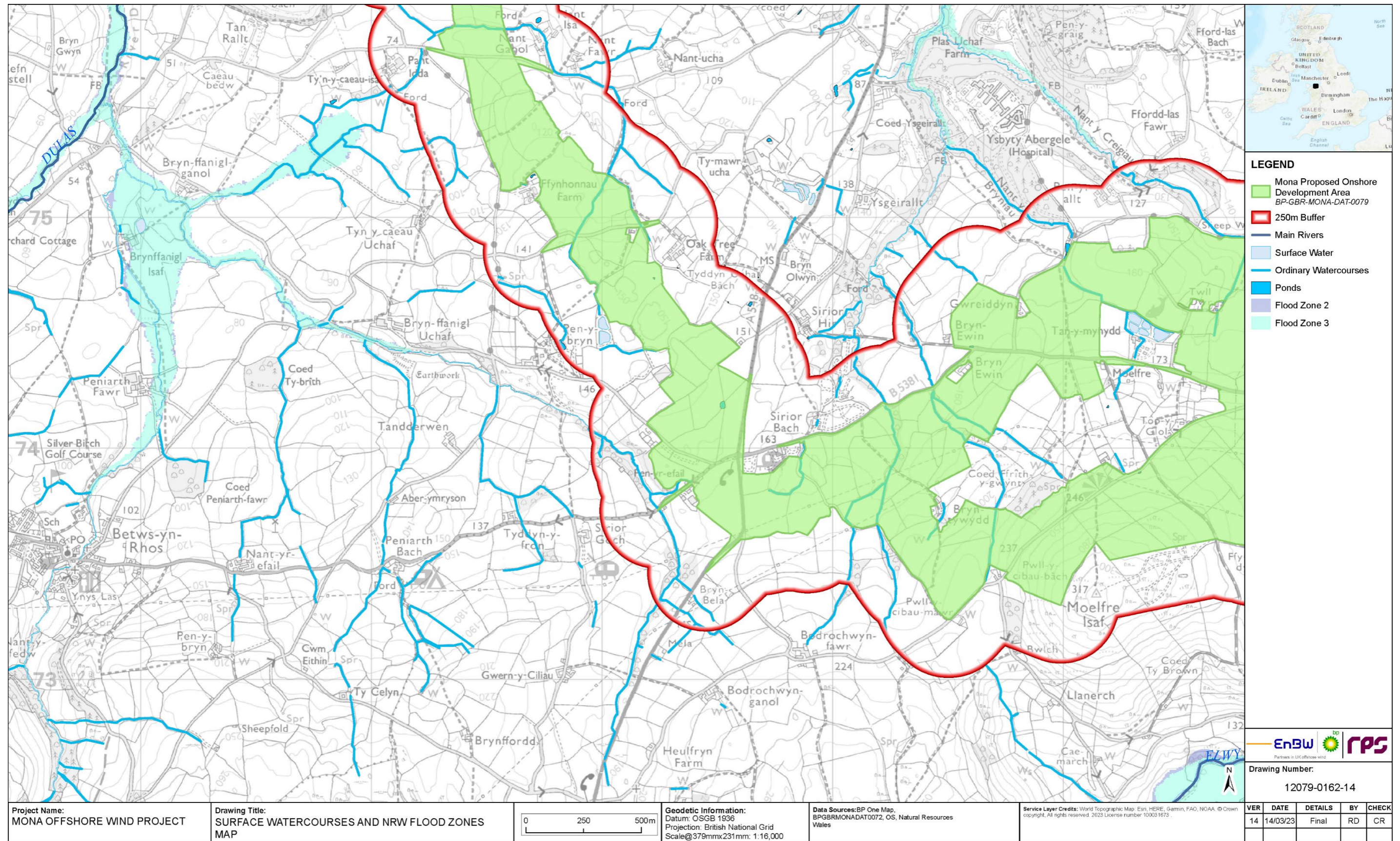


Figure 1.4: Surface watercourses and NRW flood zones within the Mona hydrology and flood risk study area (sheet 2).

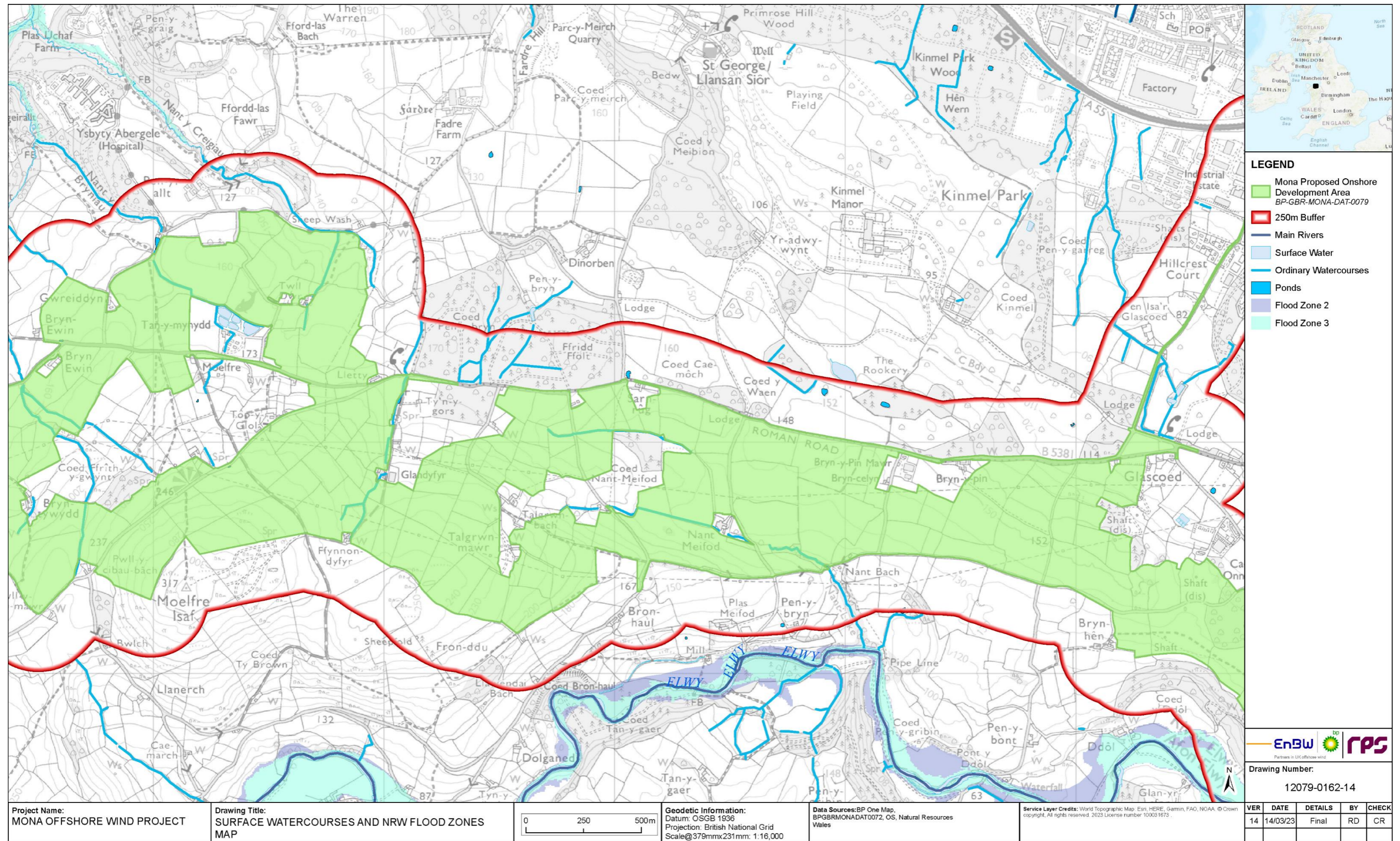


Figure 1.5: Surface watercourses and NRW flood zones within the Mona hydrology and flood risk study area (sheet 3).

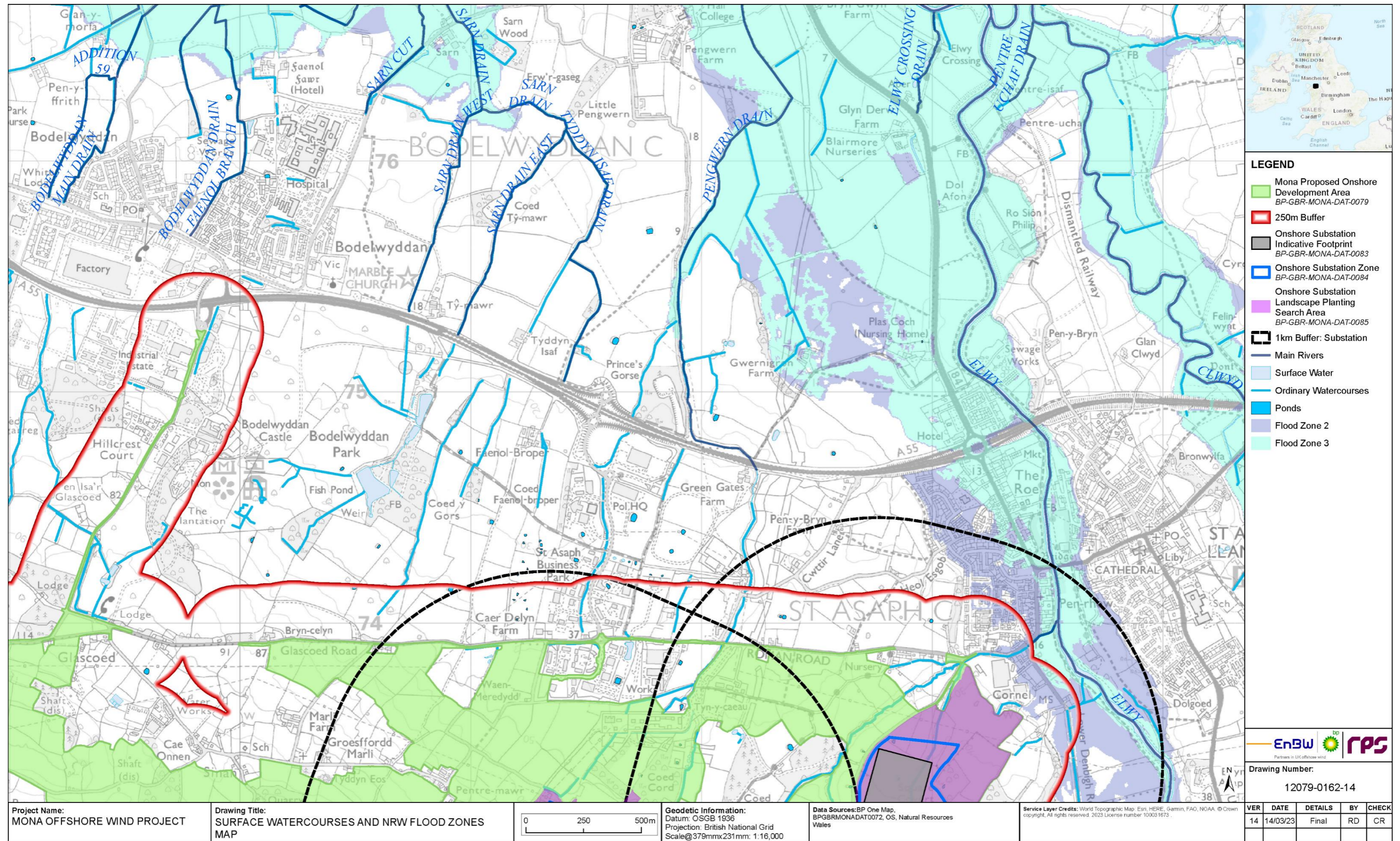


Figure 1.6: Surface watercourses and NRW flood zones within the Mona hydrology and flood risk study area (sheet 4).

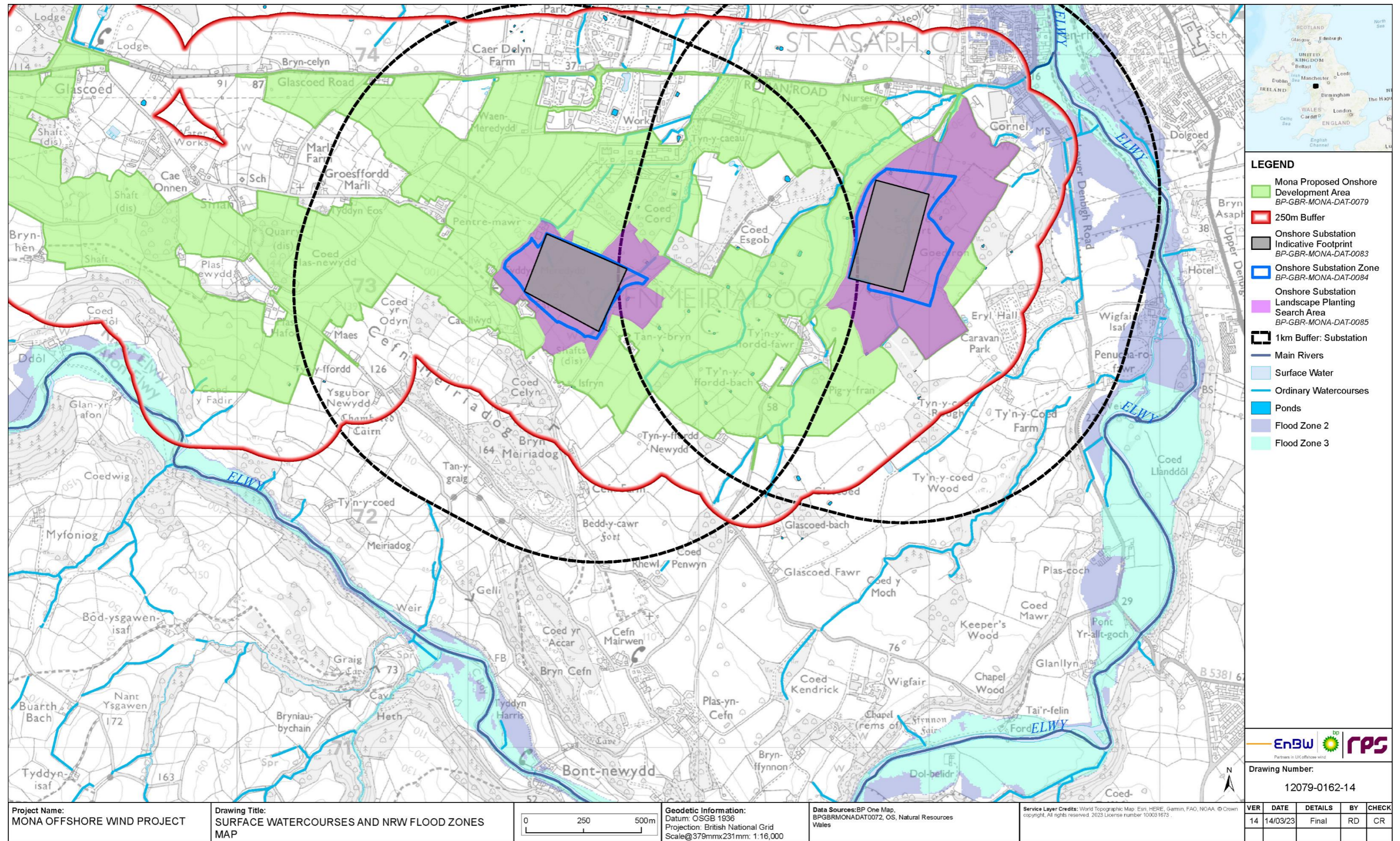


Figure 1.7: Surface watercourses and NRW flood zones within the Mona hydrology and flood risk study area (sheet 5).

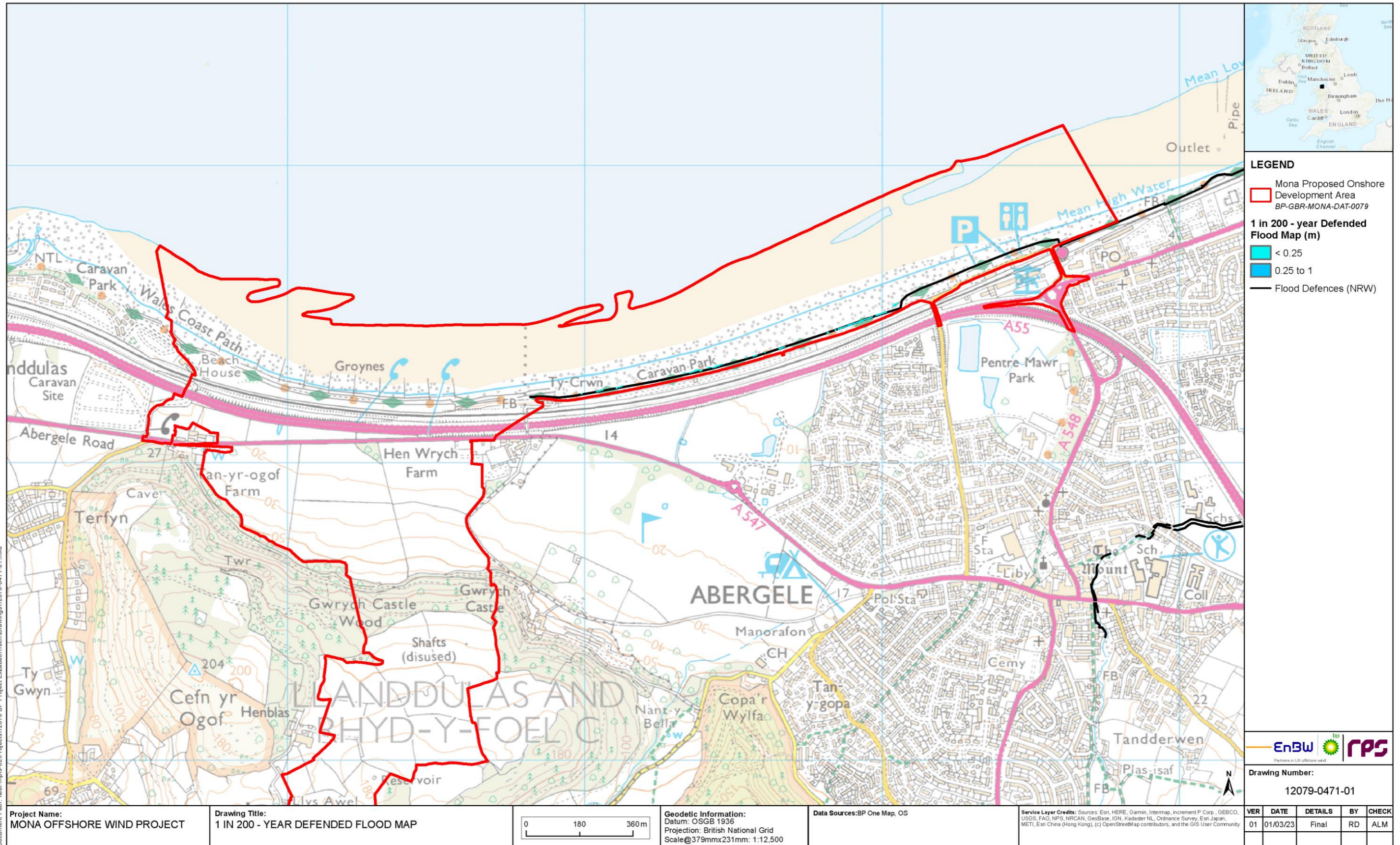


Figure 1.8: 1 in 200-year present day defended flood map.

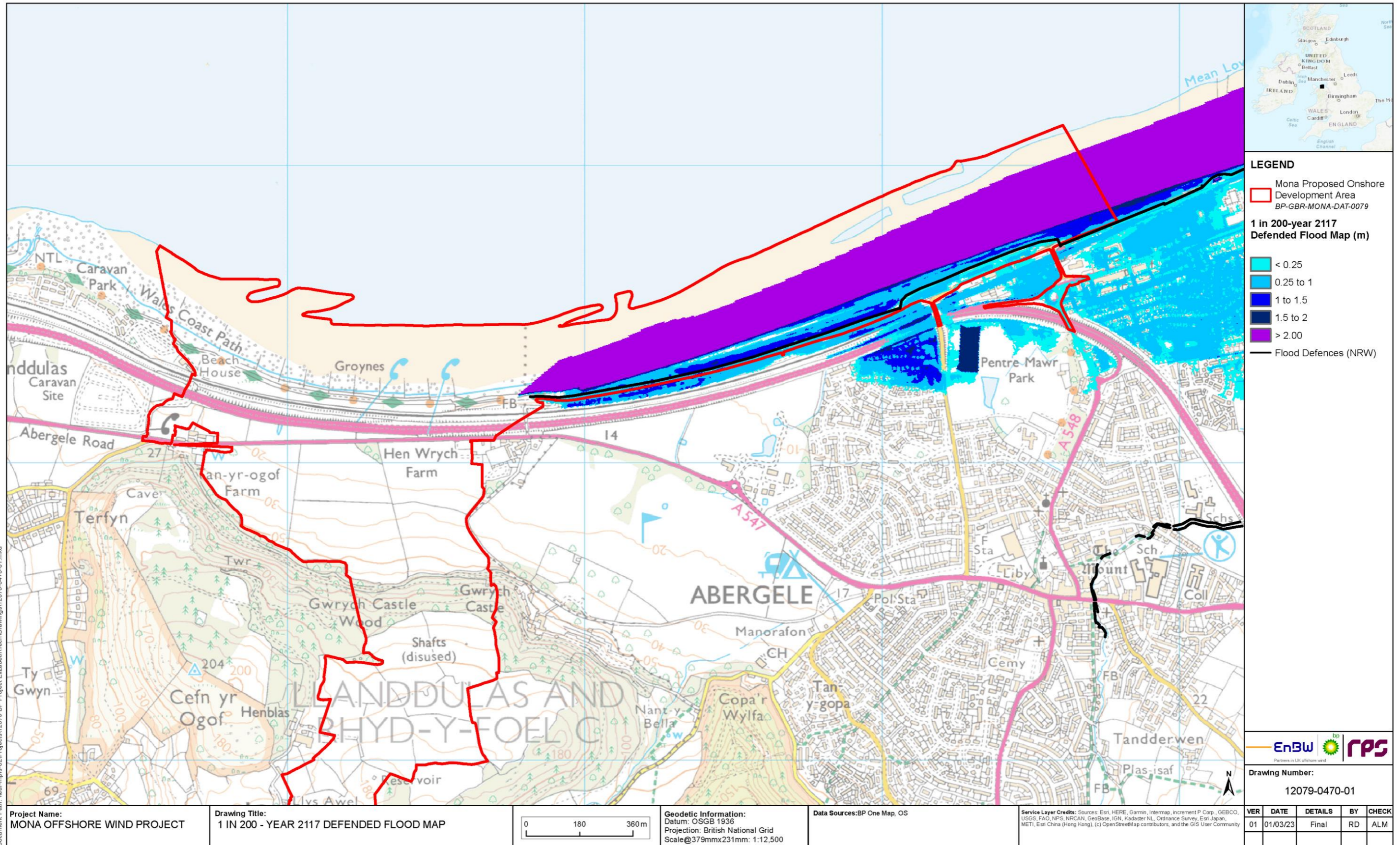


Figure 1.9: 1 in 200-year 2117 defended flood map.

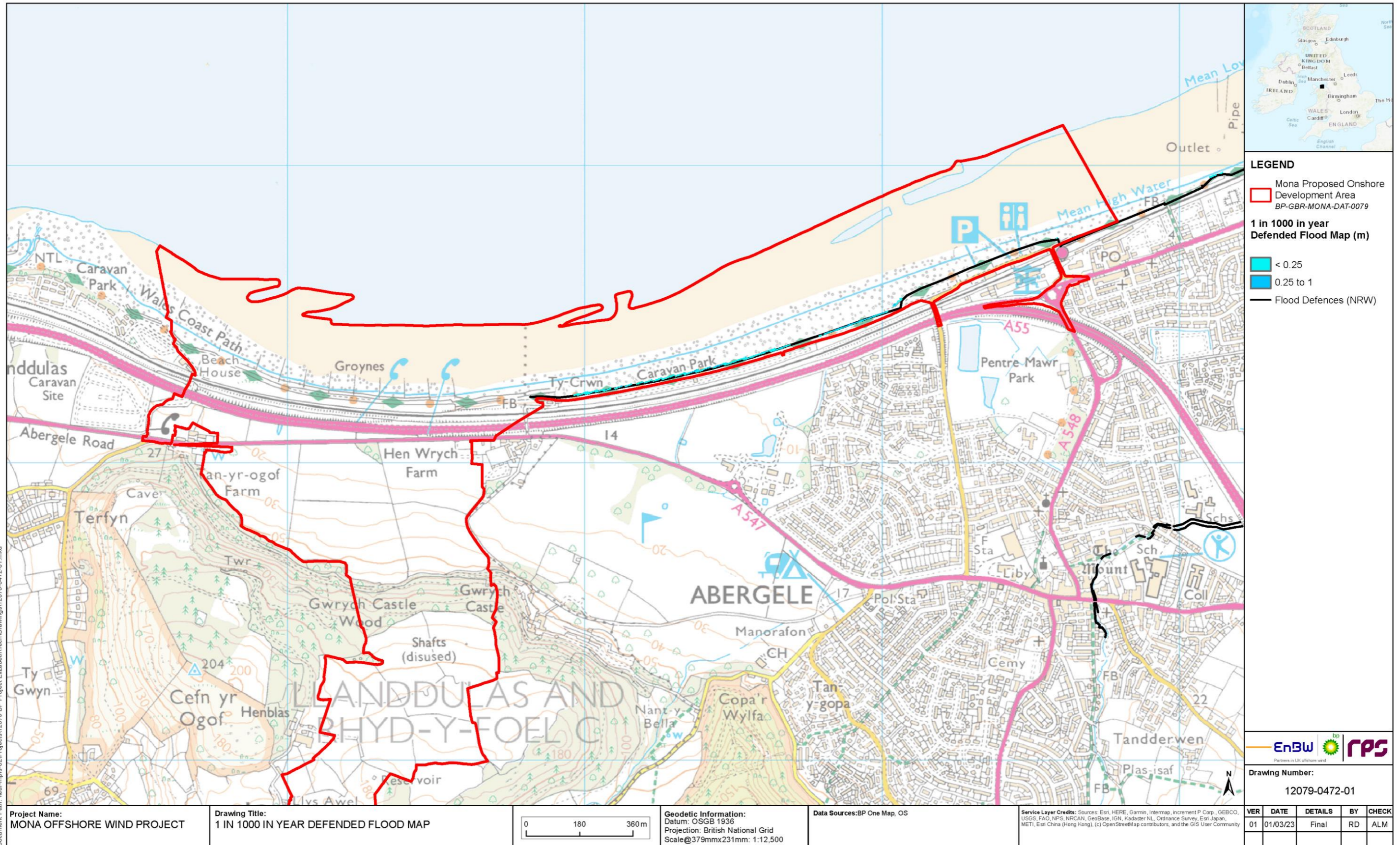


Figure 1.10: 1 in 1,000 year present day defended flood map.

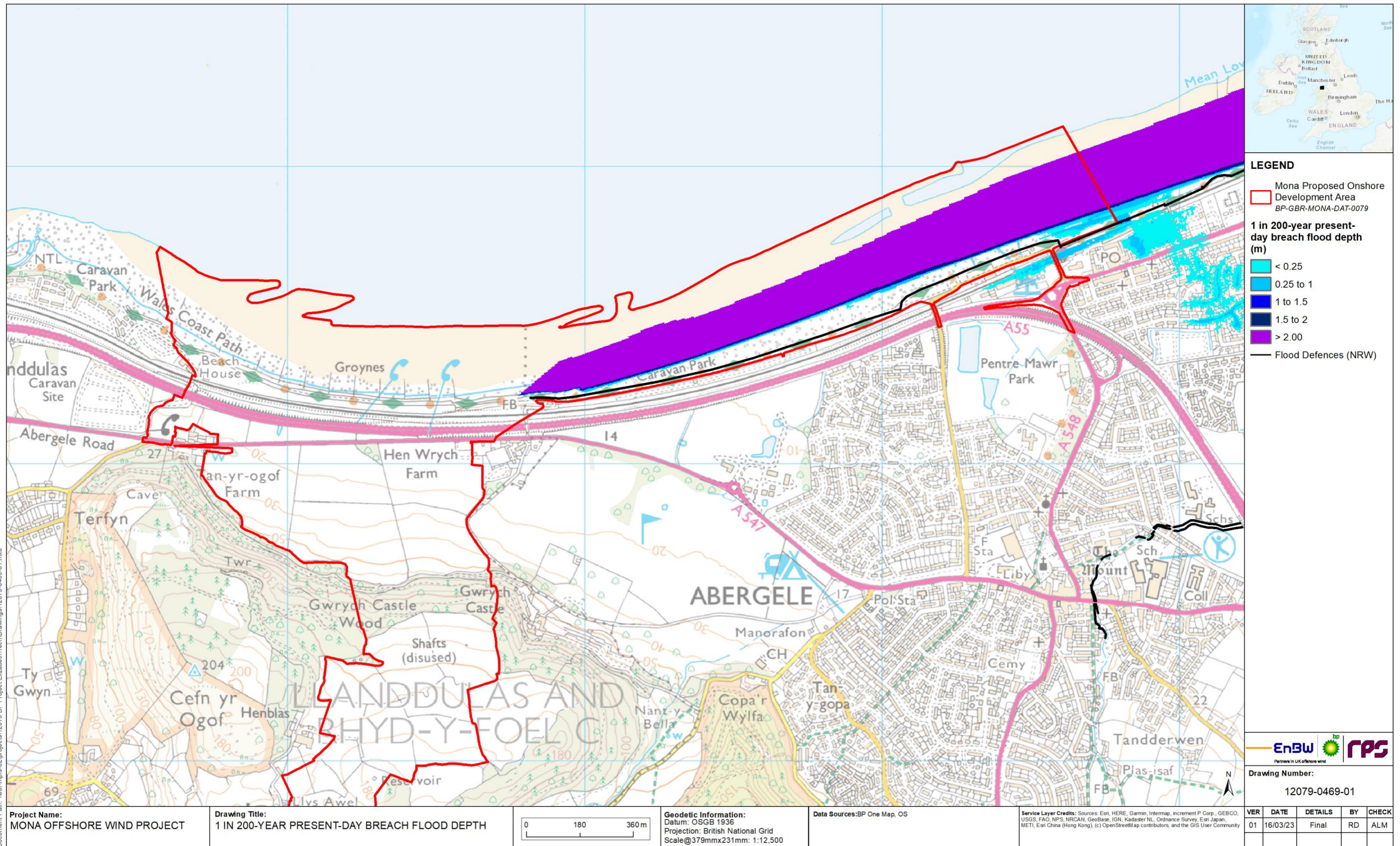


Figure 1.11: 1 in 200 year present day tidal breach flood map.

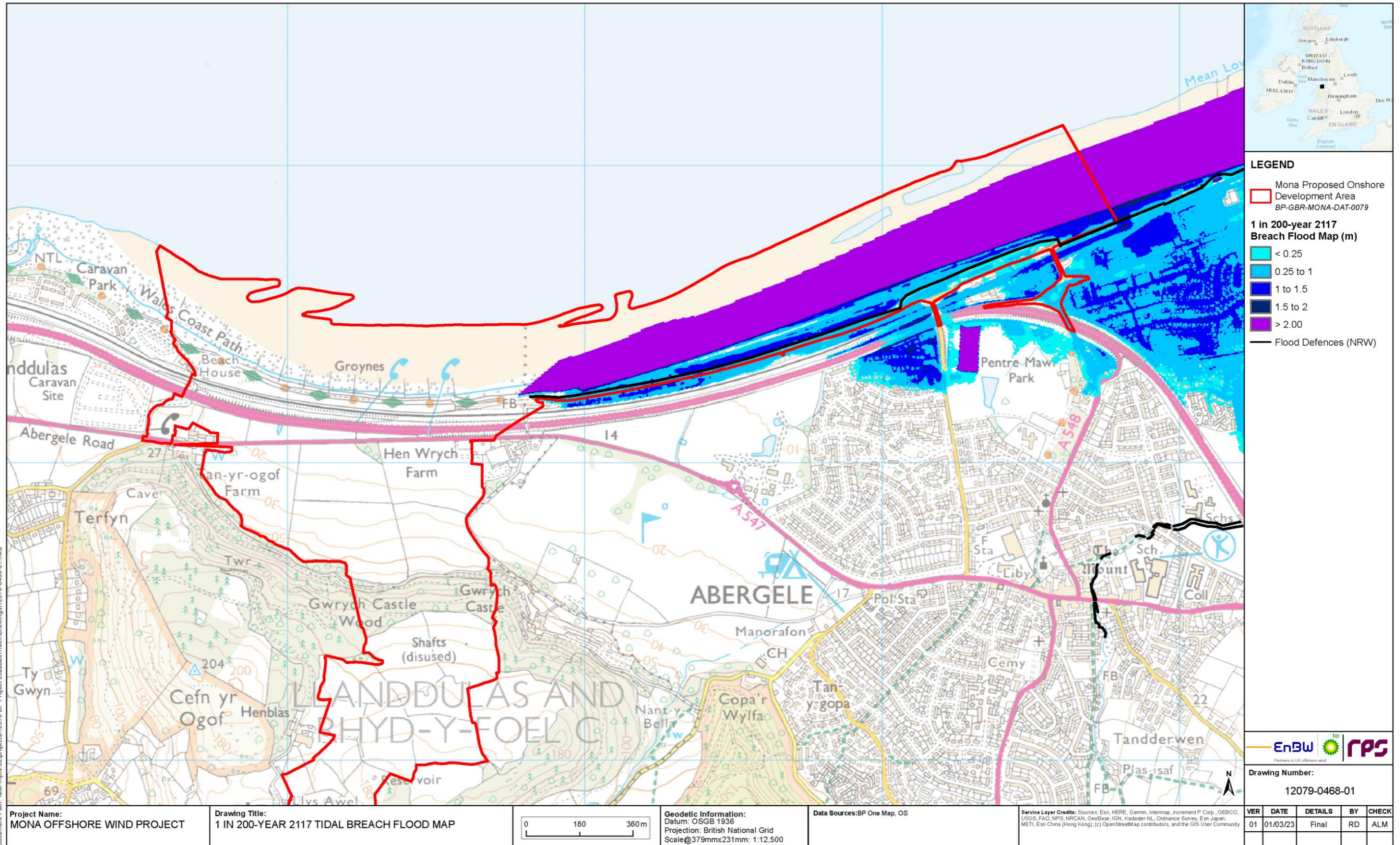


Figure 1.12: 1 in 200-year 2117 tidal breach flood map

1.4 References

NRW (2017) Point of Ayr to Pensarn coastal flood model

NRW Flood Map for Planning. Available: <https://flood-map-forplanning.naturalresources.wales/> Accessed: December 2021.

NRW (2022) Western Wales River Basin Management Plan 2021-2027 - Summary

Ordnance Survey (OS) Open Rivers. Available:

<https://www.ordnancesurvey.co.uk/business-government/products/open-map-rivers>

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