DBS Offshore Wind

RWE Renewables UK Dogger Bank South (West) Limited

RWE Renewables UK Dogger Bank South (East) Limited

Dogger Bank South Offshore Wind Farms

Flood Risk and Climate Change Technical Note

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Glossary

Term	Definition
Crest Levels	Highest level above a certain point (i.e. the datum point or reference point) along a linear defence or asset, which can be either a formal defence level or an informal level comprising the highest point along a bank.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Project (NSIP).
Dogger Bank South (DBS) Offshore Wind Farms	The collective name for the two Projects, DBS East and DBS West.
Fluvial flooding	When flows within watercourses exceed the capacity of the watercourse causing out of bank flows.
Impact	Used to describe a change resulting from an activity via the Projects, i.e. increased suspended sediments / increased noise.
Landfall	The point on the coastline at which the Offshore Export Cables are brought onshore, connecting to the onshore cables at the Transition Joint Bay (TJB) above mean high water.
Landfall Zone	The generic term applied to the entire landfall area between Mean Low Water Spring (MLWS) and the Transition Joint Bays (TJBs) inclusive of all construction works, including the landfall compounds, Onshore Export Cable Corridor and intertidal working area including the Offshore Export Cables.
Main River	Main Rivers are usually large rivers or streams that are designated under the Water Resources Act (1991) and are shown on the statutory Main River Map. They are managed by the Environment Agency, who carry out construction, maintenance and improvement works to manage flood risk.

Term	Definition
Onshore Converter Stations	A compound containing electrical equipment required to transform and stabilise electricity generated by the Projects so that it can be connected to the electricity transmission network. There will be one Onshore Converter Station for each Project.
Onshore Export Cable Corridor	This is the area which includes cable trenches, haul roads, spoil storage areas, and limits of deviation for micro-siting. For assessment purposes, the cable corridor does not include the Onshore Converter Stations, Transition Joint Bays or temporary access routes; but includes Temporary Construction Compounds (purely for the cable route).
Onshore Substation Zone	Parcel of land within the Onshore Development Area where the Onshore Converter Station infrastructure (including the Haul Roads, Temporary Construction Compounds and associated cable routeing) would be located.
Order Limits	The limits within which the Projects may be carried.
Ordinary watercourse	Rivers which are not Main Rivers are called 'ordinary watercourses'. Lead Local Flood Authorities, District Councils and Internal Drainage Boards carry out flood risk management work on ordinary watercourses.
Surface water flooding	Surface water flooding occurs when rainwater does not drain away through normal drainage systems or soak into the ground, but lies on or flows over the ground instead.
The Applicants	The Applicants for the Projects are RWE Renewables UK Dogger Bank South (East) Limited and RWE Renewables UK Dogger Bank South (West) Limited. The Applicants are themselves jointly owned by the RWE Group of companies (51% stake) and (Abu Dhabi Future Energy Company)- Masdar (49% stake).

Term	Definition
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South Offshore Wind Farms).

Acronyms

Acronym	Definition
AEP	Annual Exceedance Probability
AIMS	Asset Information Management System
AOD	Above Ordnance Datum
DCO	Development Consent Order
DEFRA	Department for Environment, Food and Rural Affairs
ExA	Examining Authority
FRA	Flood Risk Assessment
LiDAR	Light Detection and Ranging
LLFA	Lead Local Flood Authority
NaFRA	National Flood Risk Assessment
NCERM	National Coastal Erosion Risk Map
NPPF	National Planning Policy Framework
PPG	Planning Practice Guidance
RoFSW	Risk of Flooding from Surface Water
TCC	Temporary Construction Compound

1 Flood Risk and Climate Change Technical Note

1.1 Environment Agency NaFRA2 and NCERM data

1.1.1 Background

1. Within **Appendix 20-4 Flood Risk Assessment** [APP-168] produced to support the Development Consent Order (DCO) application for Dogger Bank South (hereafter referred to as the Projects), a number of different publicly available datasets were utilised to assess the flood risk from all sources to the onshore elements of the Projects infrastructure. This included datasets from the Environment Agency, as well as from the East Riding of Yorkshire Council, in their role as the Lead Local Flood Authority (LLFA).

2. The Environment Agency recently published new national risk information for flooding and coastal erosion. This includes the following updates:

   - 17 December 2024: A *'National assessment of flood and coastal erosion risk in England 2024'* report was published, which provides a summary of the new data.
   - 28 January 2025: New National Flood Risk Assessment (NaFRA) *'Risk of flooding from rivers and sea'* and *'Risk of flooding from surface water'* data was released.
   - 28 January 2025: New National Coastal Erosion Risk Map (NCERM) data was released.
   - 25 March 2025: New NaFRA Flood Zone data on Flood Map for Planning and available on data.gov.uk.

3. A comprehensive review of the new datasets has been undertaken, along with an assessment of the potential impact on both the temporary and permanent onshore elements of the Projects. This will be appended to **Appendix 20-4 Flood Risk Assessment** [APP-168] at Deadline 7, to ensure all current information is incorporated into the final Environmental Statement as requested by the Examining Authority (ExA) in the Rule 17 letter, dated 15 April 2025.

1.1.2 Environment Agency's New National Flood and Coastal Erosion Risk Information

4. As noted above, the Environment Agency recently published new national risk information for flooding and coastal erosion. This section of the Technical Note provides a summary of the key changes to the datasets, using the Applicants knowledge of the previous dataset, as well as an announcement page discussing the updates on DEFRA's website (updated 25 March 2025[1]) and the Environment Agency's *'National assessment of flood and coastal erosion risk in England'* (January 2025) report[2].

1.1.2.1 NaFRA *'Risk of flooding from rivers and sea'* and *'Risk of flooding from surface water'*

5. The new NaFRA *'Risk of flooding from rivers and sea'* and *'Risk of flooding from surface water'* data, is shown online in 'Check your long-term flood risk' (https://check-long-term-flood-risk.service.gov.uk/map).

6. Using the previously mentioned resources, a comparison has been made between the previous NaFRA data and the new NaFRA data. A summary of the key similarities and differences is provided below. A review of the previous NaFRA data in comparison with the new NaFRA data, including figures for comparison, are provided in section 1.1.3 and section 1.1.4.

- Both datasets now provide a present day and future scenario representation of flood risk;
- The fluvial, tidal / coastal and surface water datasets now include climate change scenarios, which were not previously available online;
- For the climate change scenarios, the Environment Agency selected the scenarios which were considered to be most relevant to the expected users;
- As the 'Check your long-term flood risk' tool is aimed at supporting users with short and medium term decisions to manage future flood risk, the following scenarios have been chosen:
  - the 'Central' allowance for the 2050s epoch (2040 – 2069) for risk of flooding from rivers;
  - the 'Higher Central' allowance for risk of flooding from the sea, accounting for cumulative sea level rise to 2065; and
  - the 'Central' allowance for the 2050s epoch (2040 –2060) for risk of flooding from surface water.

[1] https://environment.data.gov.uk/support/announcements/569147407/568393733

[2] https://www.gov.uk/government/publications/national-assessment-of-flood-and-coastal-erosion-risk-in-england-2024/national-assessment-of-flood-and-coastal-erosion-risk-in-england-2024

- In addition, the representation of the flood depth information has changed since the previous datasets;
- The previous Risk of Flooding from Surface Water (RoFSW) Depth datasets showed the maximum depth of flooding from surface water that could result from an event with a 0.1%, 1% and 3.3% chance of happening in any given year; and
- The new RoFSW Depth datasets show the annual chance of flooding beyond a specific depth, for depths at intervals from 20cm to 120cm.

1.1.2.2 National Coastal Erosion Risk Map (NCERM)

7. The Environment Agency's new NCERM data provides the following information:

- The most up to date representation of coastal erosion for England.
- Climate change scenarios based on UKCP18 sea level rise allowances. Including the 'Higher Central' and 'Upper End' allowances between now and 2055, and between now and 2105.
- It reflects the latest coastal management approaches set out in the Shoreline Management Plans for a range of time periods (2005 – 2025, 2025 – 2055 and 2055 –2105).
- Supports coastal managers and planners making short and long-term decisions to manage current and future coastal erosion risk through The National Coastal Erosion Risk Map and the Shoreline Management Plan Explorer website.

1.1.2.3 NaFRA Flood Zone data on Flood Map for Planning

8. The new NaFRA Flood Zone data and Flood Map for Planning have been updated and are a replacement for the old Flood Map for Planning. The following notable differences / updates from the previous data are:

- The Flood Zones and Flood Map for Planning were updated using the latest flood modelling and data.
- The updated mapping / dataset comprise no change in the definitions of Flood Zones – i.e. Flood Zone 1 through to Flood Zone 3b remain the same as those provided in the National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG) for Flood Risk and Coastal Change.
- The updated Flood Map for Planning has been extended so that it shows river and sea flood risk extents both with and without the presence of defences.
- For reference the previous Flood Map for Planning, and the Flood Zones, were only presented for the scenario assuming there were no defences in place.
- The dataset now includes an allowance for climate change, which were not previously available online.
- The Flood Map for Planning is aimed at supporting planners and developers with making long-term decisions regarding development and, as such, these decisions need to account for the full lifetime of development. Therefore, the Environment Agency has selected the following scenarios:

- The 'Central' allowance for the 2080s epoch (2070 – 2125) for risk of flooding from rivers; and
- The 'Upper End' allowance for risk of flooding from the sea, accounting for cumulative sea level rise to 2125.

1.1.3 Fluvial / tidal flood risk

1.1.3.1 Flood Zone maps

9. To understand how the updated Flood Zone extents could impact the Projects, the previous Flood Zone extents which were used in the DCO documentation, principally **Appendix 20-4 Flood Risk Assessment** [APP-168], have been compared against the updated Flood Zone extents (March 2025).

10. The revised Flood Zone mapping has been included in Appendix A, **Figure 1** entitled Flood Zones.

11. The focus of this assessment has been sub-divided into the Landfall, Onshore Export Cable Corridor (including the Onward Cable Connection), and Onshore Substation Zone.

1.1.3.1.1 Impact on the Landfall

12. At the Landfall location, the main change in the Flood Zone mapping is that the width of the Flood Zone 3 extent has increased slightly in the updated map (March 2025) to include a wider area of the beach.

13. In this location, it does not extent further inland and there is no material change in the flood risk to this element of the Projects.

1.1.3.1.2 Impact on the Onshore Export Cable Corridor

14. Overall, the Flood Zone 2 and Flood Zone 3 extents that impact the Onshore Export Cable Corridor, including the Onward Cable Connection, have not changed significantly in the updated map (March 2025).

15. The main change is that the revised Flood Zone mapping extents appear to be more detailed in some locations.

16. A summary of the main changes starting at the Landfall, i.e. eastern end of the Onshore Export Cable Corridor, to the Onshore Substation Zone has been provided as follows:

- There is an area in proximity of Donnington where there was an existing flood risk crossing the Onshore Export Cable Corridor, this flood risk remains but the shape and detail associated with it has changed and become a less cohesive area, which can be seen on Page 1 of **Figure 1**;
- In addition, an area north of the A1035 and Sigglesthorne now includes an area of flood risk passing over the route of the Onshore Export Cable Corridor. It is noted that this potential flood risk was previously identified as a surface water flow route

on the Risk of Flooding from Surface Water mapping but is now included on the Flood Zone mapping, which can be seen on Page 1 of **Figure 1**; and
- There is an area of the Onshore Export Cable Corridor north of Beverley which has changed, which can be seen on Page 3 of **Figure 1**. In the new Flood Zone mapping the Flood Zone 2 and Flood Zone 3 extents appear to have decreased as a result of the updates.

17. Other than the above minor changes, the Flood Zone 2 and Flood Zone 3 extents are largely unchanged.

18. On this basis, it is concluded there is no material change in the flood risk to this element of the Projects.

1.1.3.1.3 Impact on the Onshore Substation Zone

19. In the previous Flood Zone mapping the Onshore Converter Stations, within the Onshore Substation Zone, were located in Flood Zone 1 and not at risk of flooding from either rivers or the sea.

20. In the updated map (March 2025), the Flood Zone 2 and Flood Zone 3 extents have changed slightly in an area to the north of the Onshore Substation Zone.

21. It is noted that this potential flood risk was previously identified as a surface water flow route on the Risk of Flooding from Surface Water mapping but is now included on the Flood Zone mapping.

22. It remains however, that in the updated map (March 2025) the Onshore Substation Zone remains located in Flood Zone 1.

23. On this basis, it is concluded there is no change in the flood risk to this element of the Project.

1.1.3.2 New datasets

24. As part of the update, the Environment Agency has also published a suite of new mapping. This includes both defended and undefended mapping, for the present-day and climate change scenarios.

25. These have been included as a number of supplementary figures appended to this Technical Note as follows:

- **Figure 2** – 3.3% Annual Exceedance Probability (AEP) defended (present day & climate change)
- **Figure 3** – Present day extents (defended and undefended)
- **Figure 4** – Climate Change Extents (defended and undefended)

26. From reviewing the maps, in both **Figure 2** and **Figure 3**, the present-day flood risk extents are similar to the Flood Zones, shown on **Figure 1**, but with increased granularity.

27. As such, it is concluded that the areas affected by flood risk in the present day defended and undefended mapping are already largely covered by the flooding shown on the Flood Zone extents, shown on **Figure 1**.

28. Similarly, the defended and undefended flood extents for the climate change scenarios have similar extents to the Flood Zones (**Figure 1**).

29. Given that the Onshore Export Cable Corridor is only likely to be at risk of flooding during the present day scenario, as it will be located below ground once operational, i.e. by approximately 2031, it is concluded that following review of the updated mapping there is no increased flood risk to this element of the Projects.

30. At the Onshore Substation Zone the mapping for both the defended and undefended, present day and with climate change allowance scenarios indicates that it would not be affected by flooding either now or in the future, up to 2125.

31. This is the first time that future scenarios including climate change have been widely available.

32. Given that the updated mapping, reproduced in **Figure 4**, shows the Onshore Converter Stations, as permanent above ground infrastructure associated with the Projects, within the Onshore Substation Zone, are not at risk in the future, there are no changes in the conclusions in relation to the flood risk in this location.

1.1.3.3 Fluvial / tidal flood risk summary

33. Overall, a review of the updates to the Flood Zone extents, summarised in section 1.1.3.1, indicates there are minor changes to flood risk within the Landfall, along the Onshore Export Cable Corridor, including the Onward Cable Connection, and at the Onshore Substation Zone.

34. Furthermore, as the only operational above ground infrastructure, the Onshore Converter Stations within the Onshore Substation Zone, continue to be located in Flood Zone 1, at low risk of flooding from rivers or the sea.

35. The new datasets for defended and undefended flood risk during the present day and climate change events are similar to the Flood Zone extents (**Figure 1**). Therefore, the impact on flood risk is negligible.

36. Additionally, a review of the climate change scenarios at the Onshore Substation Zone for both the defended and undefended scenarios has confirmed that it would not be at risk of flooding during any of the future events i.e. up to and including the 0.1% AEP (1 in 1,000 year event) in 2125 when considering the updated Flood Map for Planning.

1.1.4 Surface water flood risk

37. As discussed above, the Environment Agency's surface water flood risk maps have also been updated.

38. To understand whether this has changed the risk of surface water flooding to the Projects, the previous surface water flood risk data used in **Appendix 20-4 Flood Risk Assessment** [APP-168] has been compared with the updated Environment Agency data.

39. The updated mapping has been included as a number of supplementary figures appended to this Technical Note as follows:

- **Figure 5**– Environment Agency Risk of Flooding Surface Water (present day); and
- **Figure 6** – Environment Agency Risk of Flooding Surface Water Climate Change.

40. A number of key differences between the surface water mapping in **Appendix 20-4 Flood Risk Assessment** [APP-168] and the updated data map (January 2025) have been summarised below:

- In **Appendix 20-4 Flood Risk Assessment** [APP-168], in a number of areas the surface water flood risk comprises numerous surface water flow routes; however, it is noticeable that the updated dataset does not now show all of these surface water flow routes and instead it comprises isolated areas of surface water flood risk;
- There is huge variability in surface water flood risk both within the Onshore Order Limits and the wider area. Both the mapping in **Appendix 20-4 Flood Risk Assessment** [APP-168] and the updated mapping indicates that the surface water flood risk is variable ranging from low to high chance;
- As noted previously, the updated dataset includes both the present day (**Figure 5**) and climate change scenarios (**Figure 6**); and
- The surface water dataset considered in **Appendix 20-4 Flood Risk Assessment** [APP-168] did not include climate change scenarios, as these were not previously available online.

1.1.4.1 Present day

41. The updated dataset for the present day surface water events has been used to assess the risk of flooding to the Landfall, Onshore Export Cable Corridor, including the Onward Cable Connection, and Onshore Substation Zone, as shown on the mapping included as **Figure 5**.

1.1.4.1.1 Impact on the Landfall

42. At the Landfall the previous mapping indicated there were areas of increased surface water flooding, associated with the Ordinary Watercourse to the north of Hornsea Road.

43. A review of the updated mapping indicates that the risk of surface water flooding to the Landfall remains largely unchanged.

44. On this basis, it is concluded there is no material change in the surface water flood risk to this element of the Projects.

1.1.4.1.2 Impact on the Onshore Export Cable Corridor

45. Along the Onshore Export Cable Corridor, the previous mapping indicated a number of locations where there were surface water flow paths passing over the route of the Onshore Export Cable Corridor.

46. Generally, the overland flow routes which were shown to cross the Onshore Export Cable Corridor in **Appendix 20-4 Flood Risk Assessment** [APP-168] are now no longer shown in the updated dataset and instead appear as isolated areas of flood risk.

47. This can be seen at key locations such as an area to the west of Sunnington, north west of Seaton and south of Catwick. As noted in section 1.1.3.1.2 some surface water flow paths no longer appear on the mapping and instead appear on the Flood Zone mapping (**Figure 1)**.

48. Notably there are minor changes to the surface water flood risk along the Onshore Export Cable Corridor.

49. However, when comparing both present day surface water datasets (previous data and updated data (Jan 2025)), it appears that the Onshore Export Cable Corridor has a similar level of surface water flood risk to that assessed in **Appendix 20-4 Flood Risk Assessment** [APP-168].

50. On this basis, it is concluded there is no material change in the surface water flood risk to this element of the Projects.

1.1.4.1.3 Impact on the Onshore Substation Zone

51. In the previous surface water mapping the Onshore Converter Stations were located in an area where there are a number of Ordinary Watercourses present.

52. A review of the updated mapping has indicated that there is no change in the present day surface water mapping in this location.

53. On this basis, it is concluded there is no material change in the surface water flood risk to this element of the Projects.

1.1.4.2 Climate change

54. As noted above, the surface water dataset considered in **Appendix 20-4 Flood Risk Assessment** [APP-168] did not include climate change scenarios, as these were not available online at the time of the assessment.

55. Given that the Landfall and Onshore Export Cable Corridor are only likely to be at risk of flooding during the present day scenario, as they will be below ground once operational, they have not been considered in the context of the climate change scenarios.

56. As such, the surface water flood risk dataset for the climate change scenario has been used to assess flood risk to the Onshore Convertor Stations within the Onshore Substation Zone, as shown on the mapping included in **Figure 6**.

1.1.4.2.1 Impact on the Onshore Substation Zone

57. In the previous present day surface water mapping the Onshore Converter Stations were located in an area where there are a number of Ordinary Watercourses present.

58. A review of the climate change scenario surface water flood risk mapping has been compared with the present day scenario and it is noted that the flood risk is very similar in both these scenarios.

59. As such the future surface water flood risk, i.e. up to 2060, to the Onshore Convertor Station appears to remain largely the same as that presented in **Appendix 20-4 Flood Risk Assessment** [APP-168] for the previous present day scenario.

1.1.4.3 Surface water flood risk summary

60. Overall, the Environment Agency's updates to the surface water flood risk dataset appear to only have a minor impact on surface water flood risk to the Landfall, Onshore Export Cable Corridor and Onshore Substation Zone.

61. The main changes resulting from this update to the surface water mapping are that overland flow routes appear, in a number of locations, to have been replaced with isolated areas of flood risk.

62. Overall, the surface water flood risk to the Landfall, Onshore Export Cable Corridor and Onshore Substation Zone remains similar to that presented in **Appendix 20-4 Flood Risk Assessment** [APP-168].

63. On this basis, it is concluded there is no material change in the surface water flood risk to the Projects as a result of the new and updated surface water mapping.

1.2 Review of flood risk at Temporary Construction Compounds

1.2.1 Background

64. In addition to the above clarification with regards to the potential impact of the updated and newly available data published by the Environment Agency, queries have also been raised by both the ExA and the Environment Agency in relation to the flood risk and potential displacement of flood water during an extreme event at two of the Temporary Construction Compounds (TCCs).

65. The Applicants confirmed that to address Action Points 1, 4 and 5 of the **Applicants' Responses to April 2025 Hearing Action Points** [REP4-096] a Technical Note would be prepared and submitted at Deadline 5. Therefore, this Technical Note has been prepared with the aim of addressing those concerns, as well as those raised by the Environment Agency in their **Response to Issue Specific Hearing 4 Action Points and Rule 17 letter** [REP4-108].

66. For clarity these TCCs are referenced as follows:

- TCC located to the north of Tickton (Section 7 – TCC-A); and
- TCC adjacent to Hull Bridge Road (Section 8 – TCC-B).

67. Throughout the remainder of this Technical Note the two TCCS will be referenced by the short code provided above (i.e. Section 7 – TCC-A and Section 8 – TCC-B respectively).

68. This section of the Technical Note has been prepared to address the concerns raised by the Environment Agency and ExA in relation to the flood risk at the TCCs for Section 7 – TCC-A and Section 8 – TCC-B, located along the construction route for the Onshore Export Cable.

69. Section 8 – TCC-B is located to the north of Hull Bridge Road at approximate grid reference TA 06641 42925 and Section 7 – TCC-A is located to the north of Tickton at approximate grid reference TA 04601 41263. These locations are shown on **Figure 7** in Appendix A.

70. In addition, it is noted that this risk is related to the construction phase only, as the two TCCs will be removed once the Onshore Export Cable has been constructed. The Applicants would like to clarify that the two TCCs may be in place for somewhere between 4 and 6 years in a worst-case sequential construction scenario. The Applicants have also confirmed that up to 50% of the TCCs would likely be removed within two years, although we cannot confirm which ones at this stage of design. Therefore, the 4 to 6 year time period has been considered as a worst case.

71. As such, the following review has been limited to the consideration of present day flood risk scenarios only and does not consider the future or with climate change scenarios.

1.2.2 Environment Agency's Flood Map for Planning

72. As previously noted in this Technical Note, the Environment Agency's Flood Map for Planning was updated in early 2025 and is available online. This updated mapping has been presented in **Figure 8** of Appendix A and indicates that Section 7 – TCC-A is located in Flood Zone 2 and Flood Zone 3 whilst Section 8 – TCC-B is primarily located in Flood Zone 3, with a smaller area in Flood Zone 2.

73. Each Flood Zone has the annual probability whereby it is classified as having the following chance of flooding from fluvial or tidal sources:

- Flood Zone 1: land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%)
- Flood Zone 2: land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year
- Flood Zone 3a: Land having a 1 in 100 or greater probability of river flooding each year (greater than 1% annual probability); or land having a 1 in 200 or greater probability of sea flooding (greater than 0.5% annual probability)
- Flood Zone 3b: Land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise:
  - Land having an annual probability of 1 in 30 (greater than 3.3% AEP) of flooding, with existing flood risk management features and structures operating effectively.
  - Land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding).

74. It is important to note that the Flood Map for Planning does not take into account the presence of defences and therefore the locations identified for the two TCCs may also be protected from flooding by the presence of defences whether formal or informal in nature.

75. In addition, the Environment Agency noted in their Response to Issue Specific Hearing 4 Action Points and Rule 17 letter [REP4-108] that:

"*The Flood Map for Planning (Flood Zones 2 and 3) and supporting datasets are designed to only give an indication of flood risk to an area of land and are not suitable for showing whether an individual property/area is at risk of flooding (in an undefended scenario).*

…Risk of Flood from Rivers and Seas is a probabilistic product that represent the presence and condition of flood risk management assets and takes account of the chance of them overtopping or failing and shows the overall flood risk from rivers and the sea. Though this is the case, these outputs do not provide the design flood depths needed for detailed planning considerations required in an FRA. As such, detailed local modelling, like the 2013 River Hull and Holderness Drain Flood Mapping Study, must be used (if available) to inform any detailed Flood Risk Assessment's required."

76. As such, whilst both the new defended and undefended datasets and mapping have been reviewed, they are considered to be indicative only.

77. However, given the proximity of both of these locations to significant watercourses, comprising Environment Agency Main Rivers, it is concluded that it is realistic to assume that there are likely to be defences providing protection from flooding to these locations. This consideration has also formed part of the assessment set out within this Technical Note.

1.2.3 Environment Agency data

78. As part of **Appendix 20-4 Flood Risk Assessment** [APP-168] produced to support the DCO application a data request was submitted to the Environment Agency for flood product data packages to inform the assessment. This data was provided, in November 2023, and subsequently used to inform the assessment within **Appendix 20-4 Flood Risk Assessment** [APP-168] including the results of the 2013 River Hull and Holderness Drain Modelling Study.

79. Following receipt of the original dataset, the Applicants noted that there were ongoing uncertainties around the data for the TCCs and Onshore Export Cable Corridor and as such further clarification was required on the modelled flood extents and therefore an updated data request was submitted in March 2025. In addition, it was also noted that similar queries had been raised by the ExA and Environment Agency.

80. This request was submitted on the basis the provided data indicated none of the modelled flood extents (either defended or undefended scenarios) seem to show flooding at the TCC locations and therefore no flood depth / level data had been provided. However, both of the TCCs were shown as being located in Flood Zone 3 on the Flood Map for Planning, as discussed in section 1.2.2.

81. This was also considered in the context of the clarification provided by the Environment Agency in their **Response to Issue Specific Hearing 4 Action Points and Rule 17 letter** [REP4-108] that:

82. *"…As such, detailed local modelling, like the 2013 River Hull and Holderness Drain Flood Mapping Study, must be used (if available) to inform any detailed Flood Risk Assessment's required."*On this basis, further clarification was sought as an updated data request for both Section 7 – TCC-A and Section 8 – TCC-B. These were submitted via email on 6th March 2025 and referenced by the Environment Agency as:

- EIR2025_00350 (TCC north of Tickton); and
- EIR2025_00348 (TCC north of Hull Bridge Road)

83. The Environment Agency provided a response and the supporting dataset information via email on 3rd April 2025 and it was noted that this included the model results from the 2013 River Hull and Holderness Drain Modelling Study.

84. Following questions at Issue Specific Hearing 4 a meeting was held between the Environment Agency and the Applicants on 22nd April 2025. This meeting aimed to discuss and obtain clarification to aid the Applicants in responding to Action Points 1, 4 and 5 of the **Applicants' Responses to April 2025 Hearing Action Points** [REP4-096], as well as those which were subsequently raised by the Environment Agency in their **Response to Issue Specific Hearing 4 Action Points and Rule 17 letter** [REP4-108].

85. Following this meeting the Environment Agency provided an additional summary and further updates to the March 2025 data requests.

86. In this updated request received on 22nd April 2025, the Environment Agency provided the following clarification:

"*As discussed in this afternoon's meeting, we have had the response below from our Data and Evidence team:*

I've had a chance to review the below follow-on query regarding the 2013 Hull and Holderness modelling provided, and I can confirm that the miss-match between the flood map and the gridded outputs/level data is due to only the 1d modelled outputs (modelled flood outlines) being produced for the area north of the A1035. This means that even though this model was used to inform the flood zones in the Flood Map for Planning (using the 1D flood outlines), there is no gridded data (2d) outputs available north of the A1035.

This means we are unable to provide onsite flood levels for the sites in question, only in-channel levels.

Our Flood Map for Planning only uses the 1D modelled flood outlines to contribute towards the flood zones, as such 2D data outputs are often limited to urban/critical areas to manage costs."

87. In addition, they provided the following clarification regarding new modelling currently being prepared for use:

"*In addition to this model, we have just taken delivery of a new **2024 Holderness Drain model** which may be of use to the customer.*

*Though this is a new, updated model, it only covers Holderness drain (not the River Hull) and still has a **2D grid coverage limited to below the A1035**. Please see the below map (also attached in pdf) that shows the 2D mapped extents. The red area shows the 2D modelled grid extents stopping at the A1035, and the 1D modelled flood outlines propagating to the full extent of the catchment."*

88. Based on the above clarifications, a review of the model nodes contained within the2013 River Hull and Holderness Drain Modelling Study has been considered within section 1.2.4 of this Technical Note and the implications on flood risk to the two TCCs subsequently assessed in section 1.2.6 and section 1.2.7.

89. In addition, a review of the 2024 Holderness Drain Mapping Study has been included in section 1.2.5.

1.2.4 Summary of 2013 River Hull and Holderness Drain modelling

90. As part of the various data requests outlined in section 1.2.3, the Environment Agency has provided the 2013 River Hull and Holderness Drain Flood Mapping Study which was produced by Halcrow.

91. During the DCO Examination process the Environment Agency confirmed that this remains the most up to date and valid model available for assessment of flood risk at the two TCCs and therefore it has been concluded that it is also valid for use in this assessment.

92. Furthermore, in their Response to Issue Specific Hearing 4 Action Points and Rule 17 letter [REP4-108] the Environment Agency noted that:

"…As such, detailed local modelling, like the 2013 River Hull and Holderness Drain Flood Mapping Study, must be used (if available) to inform any detailed Flood Risk Assessment's required."

93. The 2013 River Hull and Holderness Drain Flood Mapping Study was developed to increase the understanding of the flood risk zone within the catchment. The model has used the ISIS-Tuflow software to represent the River Hull and Holderness Drain system.

94. The floodplain south of the A1035 has been modelled in 2D, which gives out of channel flood depths across the floodplain, whereas north of the A1035 it has only been modelled in 1D. As previously noted, the TCCs at Section 7 – TCC-A and Section 8 – TCC-B are located within the area modelled in 1D only.

95. As noted above, despite the model including the 2D domain to the south of the A1035, there are no floodplain levels or depths available for the area north of A1035. As a result of this, there is no relevant flood level and depth mapping which can be used for assessment in this Technical Note.

96. On the basis, there is no 2D modelling covering Section 7 – TCC-A and Section 8 – TCC-B and in accordance with the Environment Agency clarification, the use of the 1D modelling outputs and in-channel nodes has been adopted to assess the flood risk at the TCCs.

97. Furthermore, the TCCs are only expected to be in place for a maximum of 6 years, as a worst case(with the potential for it to be a shorter period of time) and therefore, only the 1 in 100 year present day events have been considered in this assessment.

98. Following review of the 2013 River Hull and Holderness Drain Flood Mapping Study, it was noted that a large number of scenarios have been modelled comprising a suite of potential situations. These have been summarised as follows:

- With Defences operating which considered the flood risk under existing conditions i.e. assuming all defences and water management assets were intact and operating properly;
- Without Defences i.e. flooding unconstrained by flood defences, which are scenarios used for the development of Flood Zones 2 and 3. This included several sub-scenarios:
  - All defences removed as a simplified approach whereby all defences were removed;
  - Defences Reach removal where five reaches of the River Hull defences were removed in turn; and
  - Single Asset failure scenarios modelled to reflect failure in a number of individual assets such as pumps, outfall and tidal barriers were assessed for individual failure.

99. Although, the outputs from all scenarios have been considered in this Technical Note, the focus has been on assessing flood risk during the "With Defences" scenario as it is understood that the Environment Agency has no plans in the short term to undertake capital works, resulting in the removal or reduction in any of the existing defences.

100. Details related to the relevant in-channel nodes, associated water levels and the conclusions on flood risk to each of the TCCs, is set out in the relevant sections of this Technical Note, comprising section 1.2.7 for Section 7 – TCC-A (north of Tickton) and section 1.2.8 for Section 8 – TCC-B (adjacent to Hull Bridge Road).

1.2.5 Summary of 2024 Holderness Drain Mapping Study

101. A review of the modelled outputs provided by the 2024 Holderness Drain Mapping Study have been assessed part of this Technical Note.

102. It has been confirmed that the new model only covers the Holderness Drain and not the River Hull, as they were considered within the study not to be hydrologically connected.

103. Furthermore, the updated model still has a 2D grid coverage limited to the areas below (south of) the A1035. The Environment Agency has provided a summary of the model coverage, reproduced as **Plate 1**, where the areas represented in the 2D domain are shown in red and the modelled flood outline in the area where the model extent is limited to a 1D grid, i.e. above the A1035, is represented in green.

104. Due to the modelling not including a 2D grid to the north of the A1035 no flood depths or flood levels have been produced.

105. Furthermore, a review of the 1D modelled flood outline indicates this does not extend to the two TCCs. A review of the GIS outputs from the model has also been undertaken and these confirm that the flood extents or modelled flood outlines do not result in flooding from this model affecting either of the TCCs, at Section 7 – TCC-A and Section 8 – TCC-B.

106. As such, it is concluded that the results of this new and updated modelling for the Holderness Drian, when reviewing both the 1D or 2D domain and the modelled flood outline would not result in flooding occurring from the Holderness Drain at either of the two TCCs. Therefore, the 2024 Holderness Drain model has not been considered further in this Technical Note.

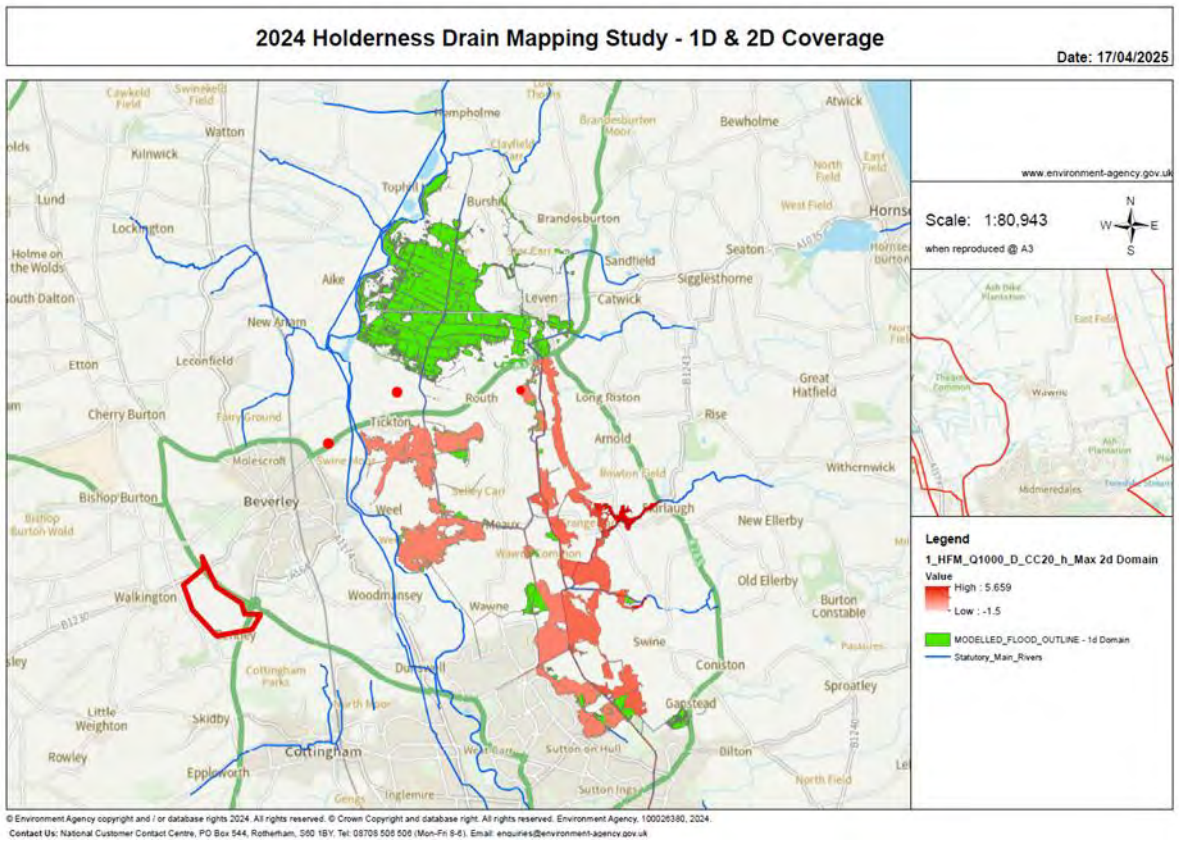


Plate 1 Extract of 2024 Holderness Drain Mapping Study showing 1D / 2D coverage and modelled flood outline (locations of the two TCCS are shown as red dots to the north and south west of Tickton)

1.2.6 Assessment Approach

107. As noted above, as 2D modelling is unavailable for both the Section 7 – TCC-A and Section 8 – TCC B, the use of 1D in channel water levels from the 2013 River Hull and Holderness Drain Flood Mapping Study have been utilised instead.

108. Where available, 2D modelling results would be used for demonstrating the flood risk to a Site, where the Environment Agency Flood Map for Planning has indicated there is an area at high flood risk.

109. However, this approach was not applicable for this Technical Note on the basis the model in this location is 1D only.

110. As such, the alternative approach has used the 1D model in conjunction with publicly available online data, comprising Asset Information Management System (AIMS) data and LIDAR data to undertake a comparison of defences, bank levels and topography with the in-channel water level nodes provided by the environment Agency. As such the Applicants have used this approach as a suitable alternative approach given the unavailability of 2D information.

111. A similar assessment approach has previously been utilised in locations where there was a need to consider the potential flood risk impact on off-site receptors where 2D modelled data has not been available for DCO projects such as:

- Sheringham and Dudgeon Extension Projects in the Technical Note entitled 'Flood Risk at Matlaske Road Technical Note' [REP2-054] on the relevant Planning Inspectorate website; and
- North Falls Offshore Windfarm Project in the Technical Note entitled 'Flood Risk Assessment (Clarification regarding flood risk associated with watercourse crossings) - Technical Note' [REP4-032] on the relevant Planning Inspectorate website.

112. These have demonstrated that the respective Projects will remain safe from flooding during its lifetime and does not increase the off-site flood risk elsewhere through the use of LiDAR and in-channel water levels and flood extents. It is important to note that whilst the Applicants have adopted a similar approach to the above for the current Projects, all projects and flood risk should be considered unique and therefore the approach will not be identical.

113. This Technical Note has used the in-channel water levels from the 2013 River Hull and Holderness Drain Flood Mapping Study for key node points in proximity to the two TCCs. The relevant node points are considered to be different depending on the which TCC is under consideration and therefore this assessment has been undertaken independently for each of the TCCs.

114. To assess the bank levels and potential for defences to be present, whether formal or informal, along the watercourses, two datasets have been assessed. These comprise:

- AIMS Spatial Flood Defences (inc. standardised attributes) dataset published by the Environment Agency, updated daily, and freely available online (https://www.data.gov.uk/dataset/cc76738e-fc17-49f9-a216-977c61858dda/aims-spatial-flood-defences-inc-standardised-attributes):
  - The Environment Agency notes that the Spatial Flood Defences layer is the only comprehensive and up-to-date dataset in England that shows flood defences currently owned, managed or inspected by the Environment Agency. It also notes that:
  - Flood defences can be structures, buildings or parts of buildings. Typically, these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.
  - A defence is any asset that provides flood defence or coastal protection functions. This includes both man-made and natural defences.
- LiDAR data which is also freely available online:
  - It can be downloaded from the DEFRA Survey Data Download portal (https://environment.data.gov.uk/survey).
  - For the TCCs the most current dataset was published in 2022 and the resolution in this location is 1m resolution.

115. The in-channel water levels from the 2013 River Hull and Holderness Drain Flood Mapping Study have subsequently been compared with the AIMs and LiDAR datasets. This has been used in conjunction with professional judgement to demonstrate, whether the in-channel water levels are likely to be able to overtop the existing banks or defences and whether, based on the intervening ground elevations, any flood water is likely to be able to reach the TCCs.

1.2.7 Review of flood risk at Section 7 -TCC-A (north of Tickton)

1.2.7.1 Historic Flood Outlines

116. As part of the Environment Agency Product 4 data for Section 7 – TCC A, this included the historic flood outlines for the TCC and surrounding areas, as shown on **Plate 2**.

117. The historic flood outlines indicate that Section 7 – TCC A has no records of historic flooding.

118. Furthermore, the nearest historic flood events occurred in 2007 and 2020 and these events affected land located to the east of the TCC, not only outside the extent of the TCC but also on the opposite side of the relevant watercourse.

119. Whilst this is not definitive confirmation that flooding has not affected the TCC in the past, it provides an indication of the likely flood risk in this location.

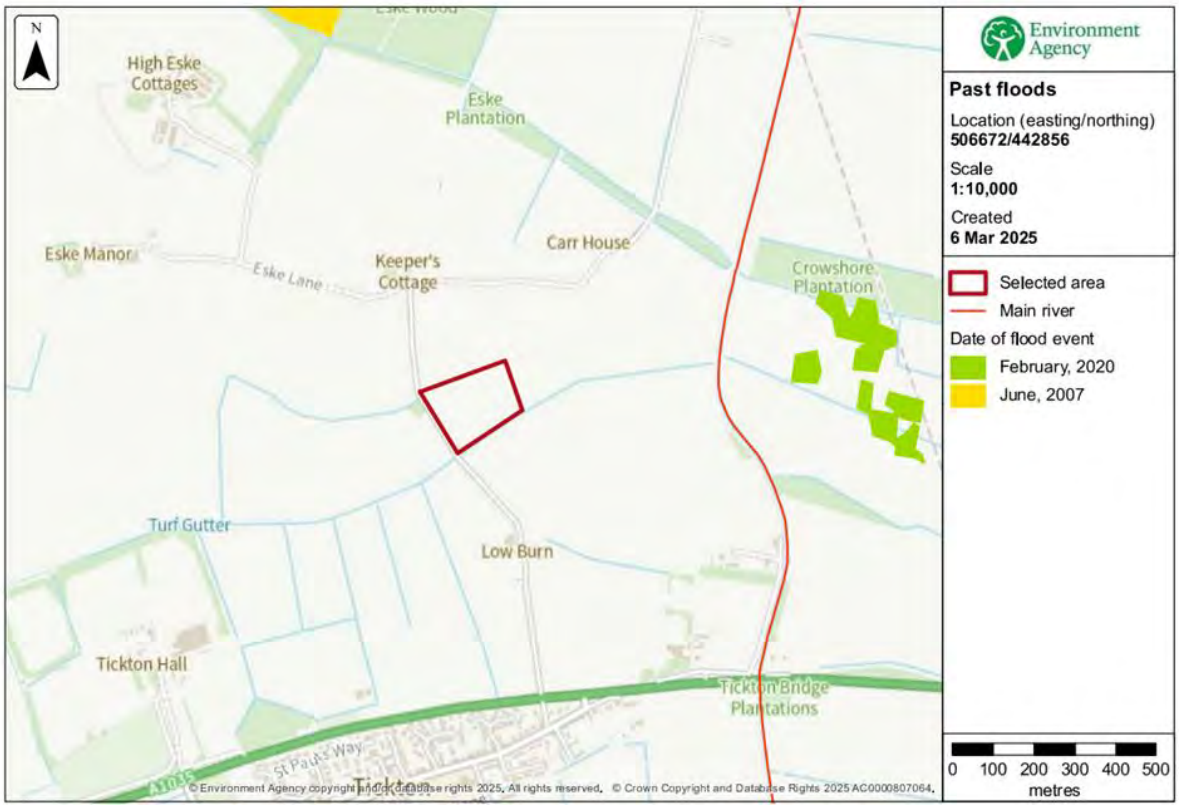


Plate 2 Historic Flood Outlines for Section 7 – TCC A (north of Tickton)

1.2.7.2 Modelled Flood Outlines

120. The TCC known as Section 7 – TCC-A is located to the north of the A1035 (north of Tickton) and has an approximate grid reference of TA 06641 42925.

121. As noted in previous sections, all the modelled information for flood risk has been taken from the 2013 River Hull and Holderness Drain Flood Mapping Study.

122. An initial review of the Environment Agency modelled outputs from the 2013 River Hull and Holderness Drain Flood Mapping Study, provided in April 2025, indicates that Section 7 – TCC-A is not affected by flooding in the "Defended Modelled Fluvial Event". Although the flood extent for the 0.1% AP (1 in 1,000 year) event is shown as being close to the eastern boundary of Section 7 – TCC-A, the 1% AP (1 in 100 year) event is limited to an area to the east, as shown on **Plate 3**.

123. As discussed above, only a 1D model is available for Section 7 – TCC-A and as such the Environment Agency has extrapolated the flood levels from the in-channel nodes over the national LiDAR dataset to produce the modelled flood extents, with the outputs of these presented in **Figure 9** of Appendix A.

124. As the in-channel nodes are only 1D, this approach within the modelling does not account for any defences or crest levels present, meaning that the flood outlines do not necessarily represent an accurate flood outline.

125. Despite the flood outlines not accounting for the presence of any defences or crest levels along the watercourse Levels, Section 7 – TCC-A does not appear to be affected during the Defended or Defence Reach Removed scenarios.

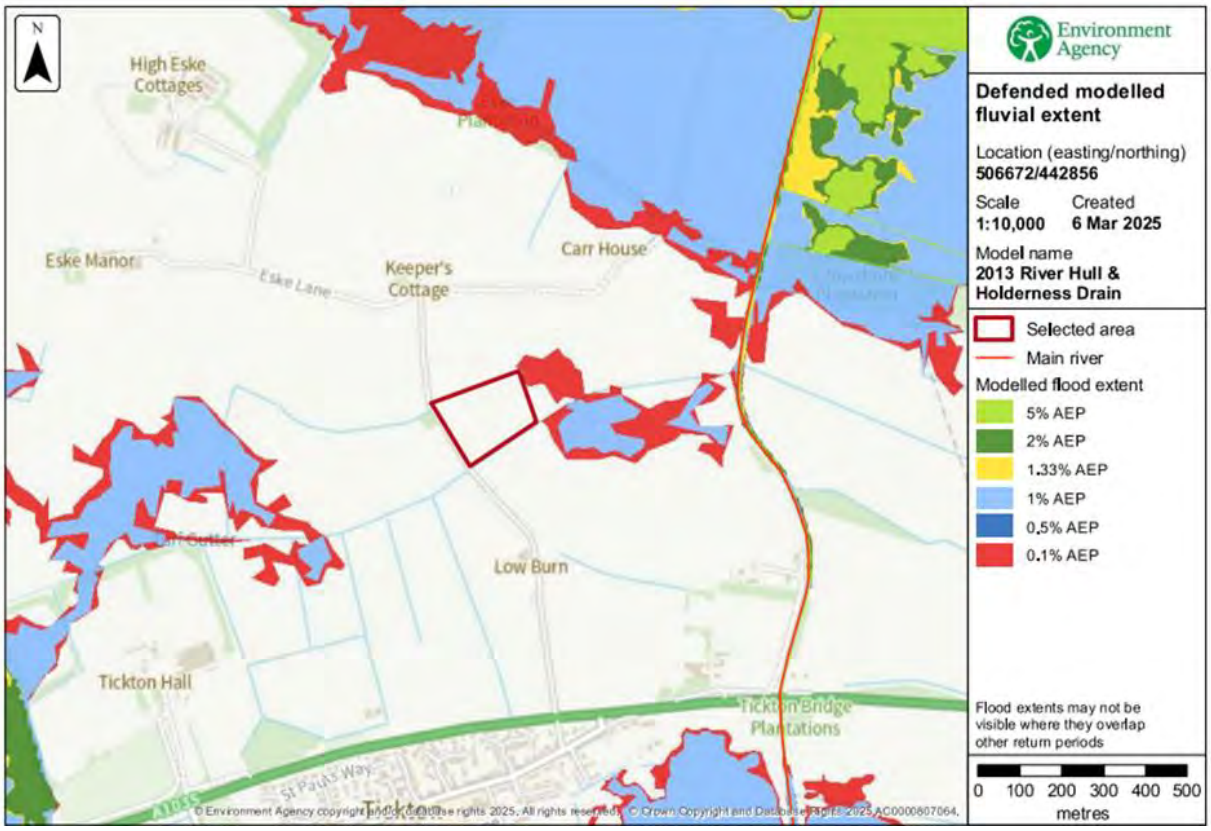


Plate 3 Extract of Product 4 dataset showing the Defended Modelled Fluvial Extent in relation to Section 7 – TCC-A

1.2.7.3 Assessment of In-channel Water Levels

126. As noted above, the TCC is located within the 1D modelled area and there are no floodplain depths or levels available for use. Therefore, the nearest modelled data comprises the 1D in-channel nodes related to the Holderness Drain (Main River) and the River Hull (Main River), located to the east and west of the TCC, respectively.

127. The Holderness Drain is located approximately 500m to the east of the TCC and the River Hull is located approximately 1,200m (1.2km) to the west of the TCC.

128. The three relevant nearest node points to the east of the TCC, related to the Holderness Drain, are 12321_Mdl_Hull_524, 12321_Mdl_Hull_525 and 12321_Mdl_Hull_735.

129. The two relevant nearest nodes points to the west of the TCC, related to the River Hull, are 12321_Mdl_Hull_196 and 12321_Mdl_Hull_197.

130. The location of the nodes in relation to Section 7 – TCC-A can be seen in **Plate 4**.

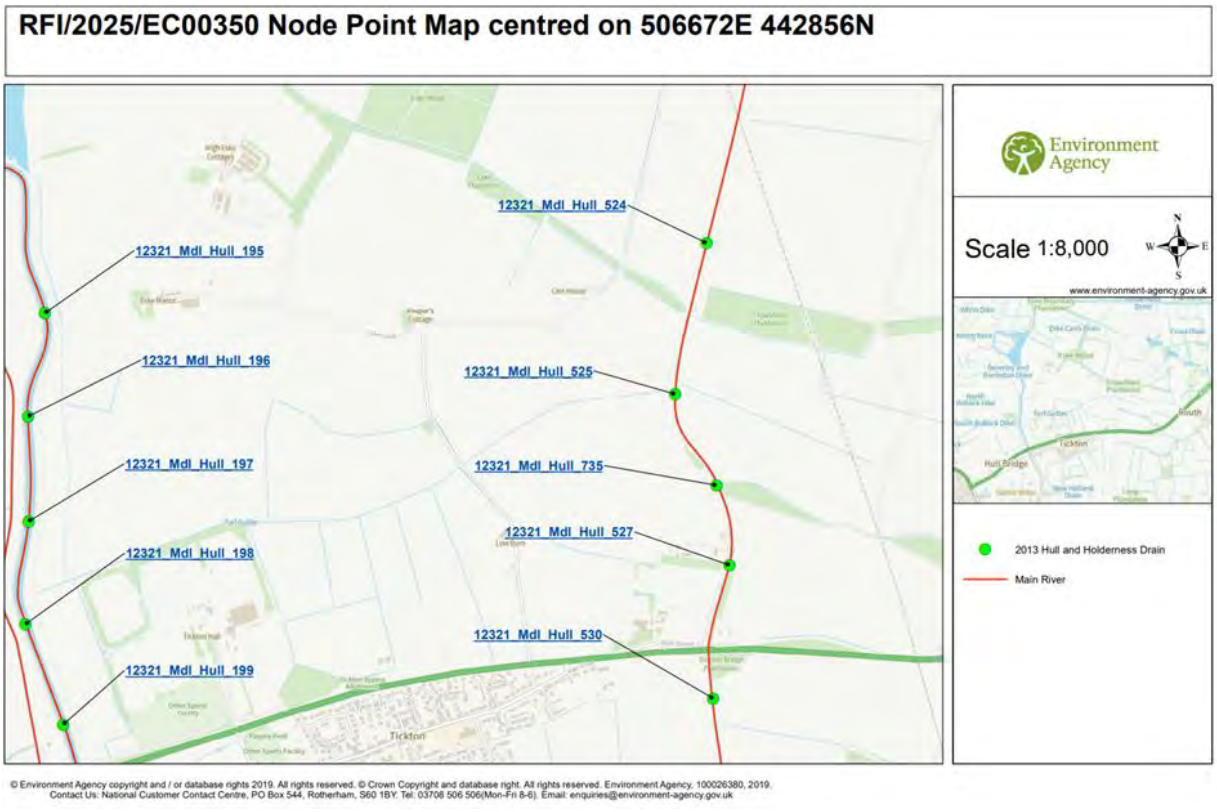


Plate 4 Node Point Map for Section 7 – TCC-A (red outline marks the indicative TCC location)

131. A review of the in-channel nodes associated with the Holderness Drain has been undertaken for each of the Defended scenarios and the results of these are presented in **Table 1**.

132. A review of the in-channel nodes associated with the River Hull has been undertaken for each of the Defended scenarios and the results of these are presented in **Table 2**.

133. It is noted that the Undefended scenario results are not available for the River Hull. However, given this assessment considered the current Defended flood risk to the TCCs, to understand the potential for flood water displacement, it was concluded that this does not alter the conclusions of the assessment.

134. In addition, a review of the Environment Agency AIMS Spatial Flood Defences dataset, publicly available online, has been undertaken to understand the crest levels of the banks on both the Holderness Drain and River Hull, for comparison with the in-channel water levels. These values are also presented alongside the relevant in-channel nodes within the tables below.

135. Finally, to support this assessment a review of the 1m LiDAR data available for this location (dated 2022) has been undertaken to confirm whether the values within the AIMS Spatial Flood Defences dataset align with the bank / defence levels shown within the LiDAR.

136. This approach was adopted to provide the greatest certainty with regards to the potential flood mechanisms in these locations.

137. It is noted that the in-channel water levels in the Holderness Drain appear to be very low; however, in this location a review of the LiDAR data confirms the watercourse is very deep and the values in the model appear to be supported by the LiDAR values in this location.

Table 1 In-channel water levels for the Defended 1 in 100 year event on the Holderness Drain.

Node Point	1% AEP (1 in 100) Fluvial runoff Defended (All defences operating) (m Above Ordnance Datum (AOD))	1% AEP (1 in 100) Fluvial Baseflow Defended (All defences operating) (m AOD)	1% AEP (1 in 100) Tidal Defended (All defences operating) (m AOD)	Crest Level (taken from the AIMS Spatial Flood Defences dataset) (m AOD)	Approximate LiDAR (m AOD)
12321_Mdl_Hull_524	-0.07	-1.68	-1.68	3.0 (left) 2.4 (right)	0.7 (left) 0.7 (right)
12321_Mdl_Hull_525	-0.07	-1.69	-1.69	3.0 (left) 2.4 (right)	1.7 (left) 1.8 (right)
12321_Mdl_Hull_735	-0.06	-1.70	-1.70	3.0 (left) 2.4 (right)	3.0 (left) 3.1 (right)

Table 2 In-channel water levels for the Defended 1 in 100 year event on the River Hull.

Node Point	1% AEP (1 in 100) Fluvial runoff Defended (All defences operating) (m AOD)	1% AEP (1 in 100) Fluvial Baseflow Defended (All defences operating) (m AOD)	1% AEP (1 in 100) Tidal Defended (All defences operating) (m AOD)	Crest Level (taken from the AIMS Spatial Flood Defences dataset) (m AOD)	Approximate LiDAR (m AOD)
12321_Mdl_Hull_196	4.04	3.88	3.24	4.5 (left) 4.4 (right)	4.2 (left) 4.4 (right)
12321_Mdl_Hull_197	4.04	3.88	3.24	4.2 (left) 4.4 (right)	4.6 (left) 4.4 (right)

138. A review of the in-channel water levels has been undertaken alongside the relevant crest levels of the watercourse, which for the Holderness Drain comprises the right bank and for the River Hull comprises the left bank.

139. When considering the water levels against the crest levels, for node points both adjacent to and upstream of Section 7 – TCC-A the in-channel water levels in all of the scenarios is not expected to exceed the crest level.

140. Given the focus is on the Defended scenarios, the crest level on the River Hull appears to be approximately 0.16m above the maximum in-channel water level (based on the lowest crest level of 4.2m AOD and maximum water level of 4.04m AOD).

141. Furthermore, in the Defended scenarios the crest level on the Holderness Drain appears to be over 2m above the maximum in-channel water level.

142. Therefore, the water level is not expected to overtop and flood out of bank, indicating that water would not be able to reach Section 7 – TCC-A and that it is expected to remain dry and safe from flooding during the 1 in 100 year event.

143. Furthermore, LiDAR mapping with 1m contours has been produced for the Section 7 – TCC-A and surrounding area to help provide further data on the topography and elevations present, as seen in **Plate 4**. Using the LiDAR, a cross section has been taken from the River Hull in the west, across Section 7 – TCC-A, to the Holderness Drain in the east to show indicative ground elevations.

144. The cross section indicates that the River Hull channel located to the west of the Site, has an approximate depth of 1m AOD and the top of bank is approximately 4.2m AOD to 4.5m AOD. As stated above, due to the channel depths and levels, the water level is not expected to overtop and flood out of bank. In the unlikely event that this were to occur, the rising / higher ground between the River Hull and Section 7 – TCC A demonstrated in **Figure 10**, would limit the flood water from reaching Section 7 – TCC A.

145. Furthermore, in the unlikely event that the water level would overtop and flood out of bank from the Holderness Drain, the flood water would also be limited in reaching Section 7 – TCC A. As the topography between Section 7 – TCC A and Holderness Drain has elevations varying between circa 1.2 and 2.7m AOD, which is significantly higher than the in-channel water levels.

146. Overall, due to the increased elevation of the ground between Section 7 – TCC A and both the River Hull and Holderness Drain respectively, it is concluded that the ability for flood water to reach Section 7 – TCC A would be limited.

147. Overall, the Defended scenarios for the 1 in 100 year event the water levels are not expected to cause out of bank flooding in this location for both the River Hull and Holderness Drain.

148. This demonstrates that according to the 1D modelling outputs provided by the 2013 River Hull and Holderness Drain Flood Mapping Study the TCC at Section 7 – TCC-A will remain flood free during its relatively short lifetime (i.e. no longer than 6 years) and would not result in displacement of flood water or cause additional flooding elsewhere.

1.2.8 Review of flood risk at Section 8 – TCC-B (north of Hull Bridge Road)

1.2.8.1 Historic Flood Outlines

149. As part of the Environment Agency Product 4 data for Section 8 – TCC B, this included the historic flood outlines for the TCC and surrounding areas, as shown on **Plate 5.**

150. The historic flood outlines indicate that Section 8 – TCC B has no records of historic flooding.

151. Furthermore, the nearest historic flood event occurred in January 2020 and this affected land located to the south of Hull Bridge Road, which is not only outside the extent of the TCC but also on the opposite side of the road. A review of Hull Bridge Road in this location indicates it is elevated and therefore is likely to limit overland flow passing to the north and reaching the TCC.

152. Whilst this is not definitive confirmation that flooding has not affected the TCC in the past, it provides an indication of the likely flood risk in this location.

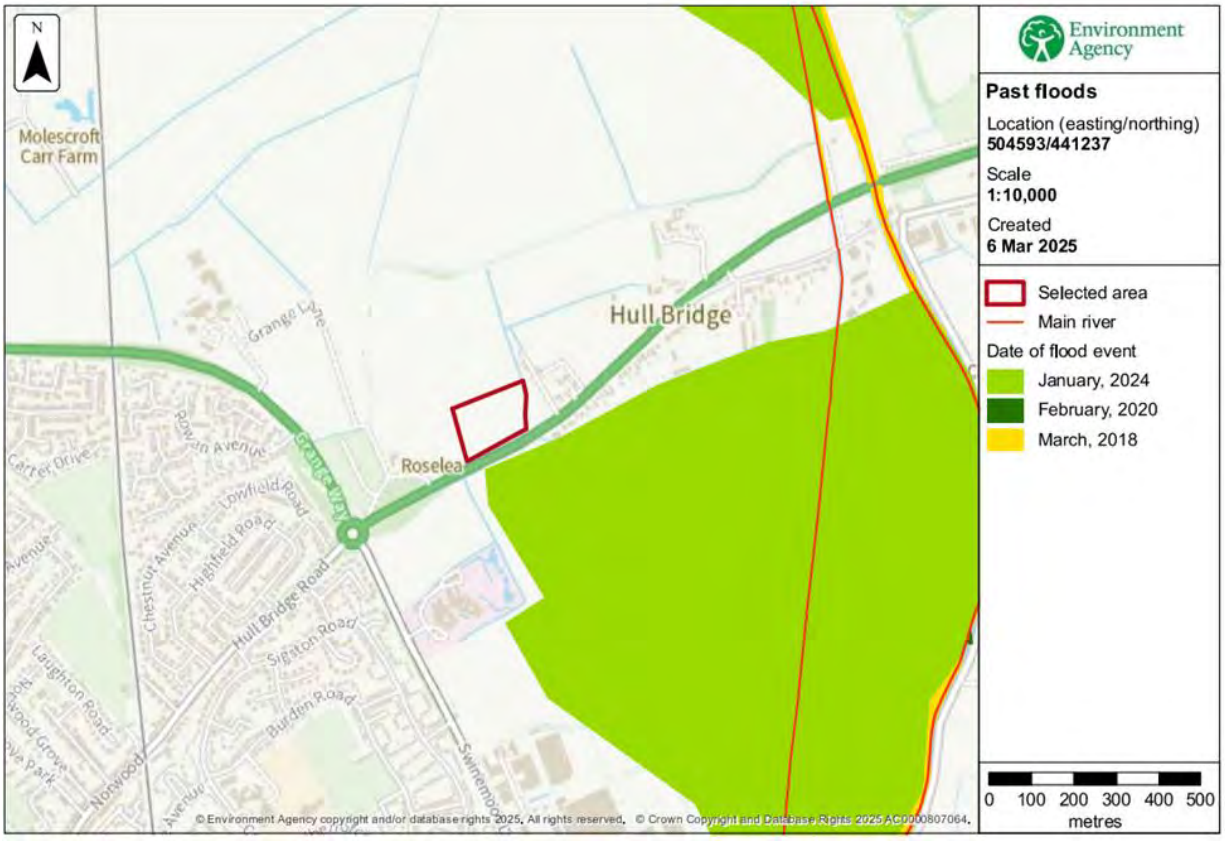


Plate 5 Historic Flood Outlines for Section 8 – TCC B (north of Hull Bridge Road)

1.2.8.2 Modelled Flood Outlines

153. The TCC known as Section 8 – TCC-B is located to the north of thew A1035 (Hull Bridge Road) and has an approximate grid reference of TA 06641 42925.

154. As noted in previous sections, all the modelled information for flood risk has been taken from the 2013 River Hull and Holderness Drain Flood Mapping Study.

155. An initial review of the Environment Agency modelled outputs from the 2013 River Hull and Holderness Drain Flood Mapping Study, provided in April 2025, indicates that Section 8 – TCC-B is affected by flooding in the "Defended Modelled Fluvial Event" during the 1% AP (1 in 100 year) event, with the northern area of the TCC only affected during the 0.1% AP (1 in 1,000 year) event, as shown on **Plate 6**.

156. As discussed above, only a 1D model is available for Section 8 – TCC-B and as such the Environment Agency has extrapolated the flood levels from the in-channel nodes over the national LiDAR dataset to produce the modelled flood extents, with the outputs of these presented in **Figure 11** of Appendix A.

157. As the in-channel nodes are only 1D, this approach within the modelling does not account for any defences or crest levels present, meaning that the flood outlines do not necessarily represent an accurate flood outline.

158. Despite the flood outlines not accounting for the presence of any defences or crest levels along the watercourse Levels, Section 8 – TCC-B does not appear to be affected during the Defended or Undefended scenarios.

159. Section 8 – TCC-B is only affected during the Defence Reach removed scenario, however, however this scenario would only occur in the event that capital works are undertaken, and it is understood that the Environment Agency has no plans in the short term to undertake capital works, resulting in the removal or reduction in any of the existing defences.

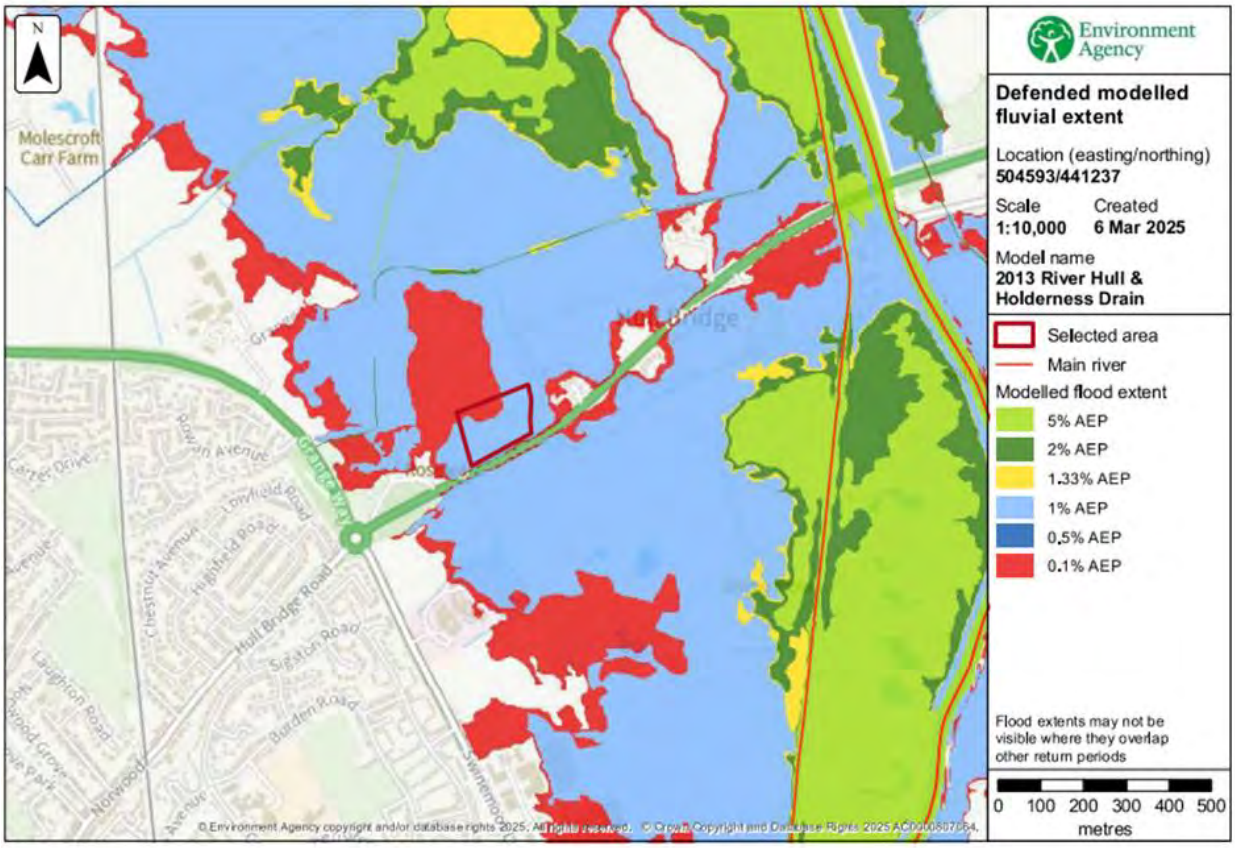


Plate 6 Extract of Product 4 dataset showing the Defended Modelled Fluvial Extent in relation to Section 8 – TCC-B

1.2.8.3 Assessment of In-channel Water Levels

160. As noted above, the TCC is located within the 1D modelled area and there are no floodplain depths or levels available for use. Therefore, the nearest modelled data comprises the 1D in-channel nodes related to the River Hull (Main River) and Beverley and Barmston Drain (Main River), both of which are located to the east of the TCC.

161. The Beverley and Barmston Drain and the River Hull run alongside each other in close proximity. The Beverley and Barmston Drain is located approximately 850m to the north east of the TCC and the River Hull is located approximately 950m to the north east of the TCC.

162. The two relevant nearest node points to the TCC are 12321_Mdl_Hull_468 and 12321_Mdl_Hull_469, located on the Beverley and Barmston Drain.

163. The four relevant nearest node points to the TCC for the River Hull are 12321_Mdl_Hull_669, 12321_Mdl_Hull_671, 12321_Mdl_Hull_674 and 12321_Mdl_Hull_205.

164. The location of the nodes in relation to Section 8 – TCC-B can be seen in **Plate 7**.

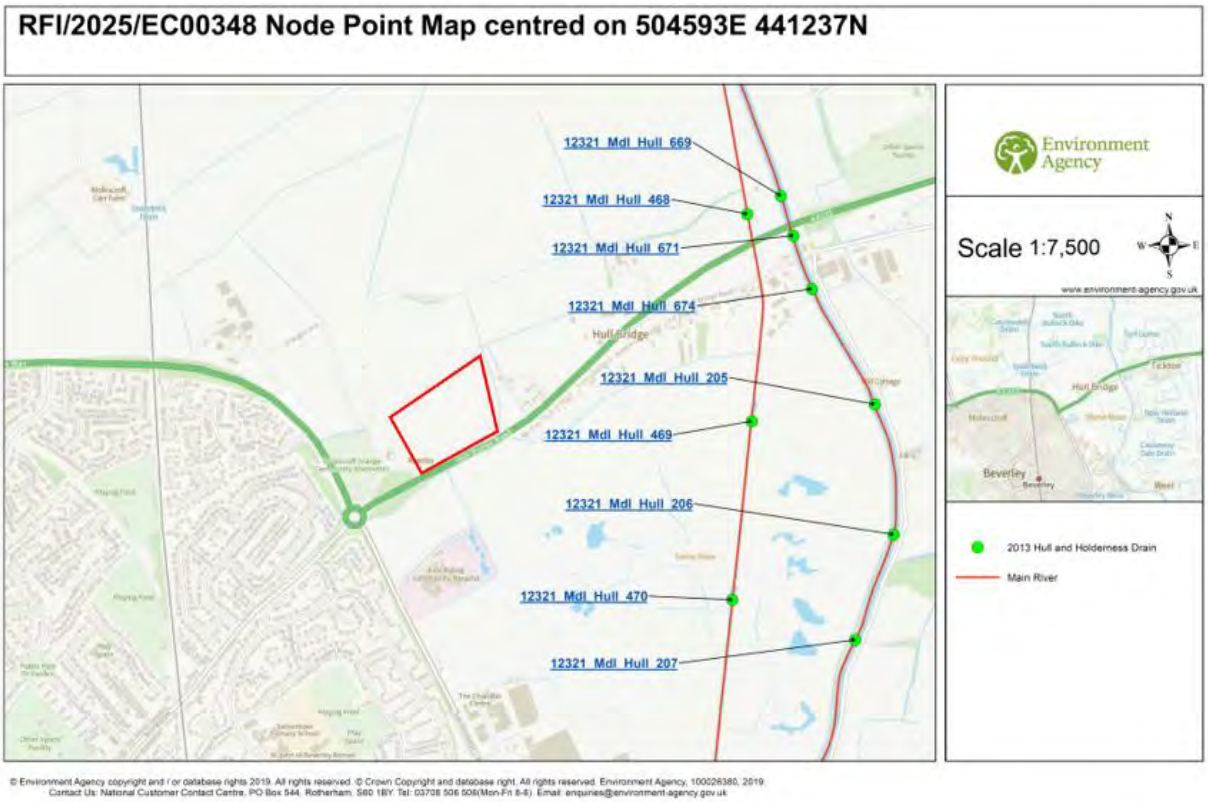


Plate 7 Node Point Map for Section 8 – TCC-B (red outline marks the indicative TCC location)

165. A review of the in-channel nodes associated with the Beverley and Barmston Drain has been undertaken for each of the Defended scenarios and the results of these are presented in **Table 3**.

166. A review of the in-channel nodes associated with the River Hull has been undertaken for each of the Defended scenarios and the results of these are presented in **Table 4**.

167. It is noted that the Undefended scenario results are not available for the River Hull. However, given this assessment considered the current Defended flood risk to the TCCs, to understand the potential for flood water displacement, it was concluded that this does not alter the conclusions of the assessment.

168. In addition, a review of the Environment Agency AIMS Spatial Flood Defences dataset, publicly available online, has been undertaken to understand the crest levels of the banks on both the Beverley and Barmston Drain and River Hull, for comparison with the in-channel water levels. These values are also presented alongside the relevant in-channel nodes within the tables below.

169. Finally, to support this assessment a review of the 1m LiDAR data available for this location (dated 2022) has been undertaken to confirm whether the values within the AIMS Spatial Flood Defences dataset align with the bank / defence levels shown within the LiDAR.

170. This approach was adopted to provide the greatest certainty with regards to the potential flood mechanisms in these locations.

Table 3 In-channel water levels for the Defended 1 in 100 year event on the Beverley and Barmston Drain

Node Point	1% AEP (1 in 100) Fluvial runoff Defended (All defences operating) (m AOD)	1% AEP (1 in 100) Fluvial Baseflow Defended (All defences operating) (m AOD)	1% AEP (1 in 100) Tidal Defended (All defences operating) (m AOD)	Crest Level (taken from the AIMS Spatial Flood Defences dataset) (m AOD)	Approximate LiDAR (m AOD)
12321_Mdl_Hull_468	1.02	1.62	-0.38	2.02 (left) 2.17 (right)	2.1 (left) 2.1 (right)
12321_Mdl_Hull_469	1.02	1.62	-0.37	3.0 (left) 2.4 (right)	2.3 (left) 2.0 (right)

Table 4 In-channel water levels for the Defended 1 in 100 year event on the River Hull

Node Point	1% AEP (1 in 100) Fluvial runoff Defended (All defences operating) (m AOD)	1% AEP (1 in 100) Fluvial Baseflow Defended (All defences operating) (m AOD)	1% AEP (1 in 100) Tidal Defended (All defences operating) (m AOD)	Crest Level (taken from the AIMS Spatial Flood Defences dataset) (m AOD)	Approximate LiDAR (m AOD)
12321_Mdl_Hull_669	4.01	3.87	3.25	4.4 (left) 4.39 (right)	4.4 (left) 4.3 (right)
12321_Mdl_Hull_671	4.00	3.87	3.25	4.46 (left) 4.08 (right)	4.5 (left) 4.0 (right)
12321_Mdl_Hull_674	3.99	3.87	3.25	4.2 (left) 4.0 (right)	3.1 (left) 4.3 (right)
12321_Mdl_Hull_205	3.98	3.87	3.27	4.3 (left) 4.1 (right)	3.3 (left) 4.5 (right)

171. A review of the in-channel water levels has been undertaken alongside the relevant crest levels of the watercourse, which for both the Beverley and Barmston Drain and River Hull comprises the right bank.

172. When considering the water levels against the crest levels, for node points upstream, adjacent to and downstream of Section 8 – TCC-B the in-channel water levels in all of the scenarios is not expected to exceed the crest level.

173. Given the focus is on the Defended scenarios, the crest level on the Beverley and Barmston Drain appears to be approximately 0.55m above the maximum in-channel water level (based on the lowest crest level of 2.17m AOD and maximum water level of 1.62m AOD).

174. Furthermore, in the Defended scenarios the crest level on the River Hull appears to be above the maximum in-channel water level of 4.00m AOD. However, in the case of some of the in-channel nodes on the River Hull it is noted that the in-channel water levels are close to the lowest crest level of the banks (when comparing the 3.99m AOD in-channel water level, at 12321_Mdl_Hull_674, with the crest level of 4.00m AOD).

175. On the basis, there are a number of roads, including the A1035, located between Section 8 – TCC-B as well as a number of bridge / culvert structures it is considered that not all of the node points identified above are relevant to the TCC at Section 8 – TCC-B.

176. Given its location to the north of the A1035, which is elevated at this point and comprises an obstruction to potential flow routes across the floodplain, it is concluded that the most relevant node points for consideration are 12321_Mdl_Hull_468 on the Beverley and Barmston Drain and 12321_Mdl_Hull_669 on the River Hull.

177. As noted above, the crest level on the right bank of the Beverley and Barmston Drain at 12321_Mdl_Hull_468 appears to be approximately 0.55m above the maximum in-channel water level (based on the crest level of 2.17m AOD and maximum water level of 1.62m AOD). Therefore, it is concluded that the TCC would not be at risk of flooding from the Beverley and Barmston Drain.

178. Taking into account the potential flood risk from the River Hull, the crest level on the right bank of the River Hull along this reach adjacent to 12321_Mdl_Hull_669 is 4.39m AOD. At this node point the maximum in-channel water level is 4.01m AOD, and therefore the crest level is 0.38m above the maximum water level.

179. As such, the water level is not expected to overtop and flood out of bank, indicating that water would not be able to reach Section 8 – TCC-B and that it is expected to remain dry and safe from flooding during the 1 in 100 year event.

180. Furthermore, LiDAR mapping with 1m contours has been produced for the Section 8 – TCC-B and surrounding area to help provide further data on the topography and elevations present, as seen in **Figure 11** in Appendix A. Using the LiDAR, a cross section has been taken from the Beverley and Barmston Drain to the east towards Section 8 – TCC-B to show indicative ground elevations, as seen in **Figure 12**.

181. The cross section indicates that the Beverley and Barmston Drain channel has an approximate depth of -0.59m AOD and the top of bank is approximately 2.2m AOD to 2.4m AOD. As stated above, due to the channel depth and levels, the water level is not expected to overtop and flood out of bank. In the unlikely event that this were to occur, the rising / higher ground between the Beverley and Barmston Drain and Section 8 – TCC-B demonstrated in **Figure 11** of Appendix A, would limit the flood water from reaching Section 8 – TCC-B.

182. Furthermore, in the unlikely event that the water level would overtop and flood out of bank from the River Hull, the flood water would also be limited in reaching Section 8 – TCC B due to the presence of the intervening Beverley and Barmston Drain as well as the raised elevation of the topography between Section 8 – TCC B and the watercourses.

183. Overall, during the Defended scenarios for the 1 in 100 year event the water levels are not expected to cause out of bank flooding in this location for both the River Hull and the Beverley and Barmston Drain.

184. Given its proximity to the urban area, this is of key importance in demonstrating there will be no displacement of flood water or increased off-site risk.

185. According to the 1D modelling outputs provided by the 2013 River Hull and Holderness Drain Flood Mapping Study the TCC at Section 8 – TCC-B will remain flood free during its relatively short lifetime (i.e. no longer than 6 years) and would not result in displacement of flood water or cause additional flooding elsewhere.

1.2.9 Summary of flood risk impact

186. A review of the modelling data available for the two TCCs, known as Section 7 – TCC-A and Section 8 – TCC-B, has provided a more detailed understanding of the potential flood risk.

187. This included a review of the applicability, conclusions and outputs from both the 2013 River Hull and Holderness Drain Flood Mapping Study and 2024 Holderness Drain Mapping Study.

188. A review of the Environment Agency historic flood outline data indicated that both Section 7 - TCC A and Section 8 - TCC B have no recorded historic flood events occurring within the boundary of the TCC.

189. As part of the review, it was found that both the TCCs are located outside the modelled flood outline for the 2024 Holderness Drain Mapping Study and therefore this dataset was not considered in further detail.

190. As such, the review has focused on the results and outputs provided by the 2013 River Hull and Holderness Drain Flood Mapping Study, on the basis the Environment Agency has confirmed this is the most appropriate modelling available for these locations.

191. Furthermore, it has considered the present day Defended scenarios, given the relatively short term nature of the TCCs and based on the Applicants understanding that the Environment Agency has no plans in the short term to undertake capital works, resulting in the removal of any of the existing defences.

192. During the Defended scenarios for the 1 in 100 year event the water levels are not expected to cause out of bank flooding at the node points relevant to the TCC, known as Section 7 – TCC-A, for both the River Hull and Holderness Drain.

193. This demonstrates that according to this assessment using the modelling outputs from the 2013 River Hull and Holderness Drain Flood Mapping Study the TCC at Section 7 – TCC-A will remain flood free during its relatively short lifetime (i.e. no longer than 6 years) and would not result in displacement of flood water or cause additional flooding elsewhere.

194. When considering the TCC, known as Section 8 -TCC-B, the Defended scenarios for the 1 in 100 year event water levels are not expected to cause out of bank flooding from the Beverley and Barmston Drain.

195. Furthermore, in the Defended scenarios the crest level on the River Hull appears to be above the modelled in-channel water level of 4.00m AOD. However, in the case of some of the in-channel nodes on the River Hull it is noted that in-channel water levels are close to the lowest crest level of the banks (when comparing the 3.99m AOD in-channel water level, at 12321_Mdl_Hull_674, with the crest level of 4.00m AOD).

196. Given the location of Section 8 -TCC-B, to the north of the A1035, which is elevated at this point and comprises an obstruction to potential flow routes across the floodplain, it is concluded that the most relevant node point for consideration is 12321_Mdl_Hull_669 on the River Hull.

197. The crest level on the right bank of the River Hull along this reach adjacent to 12321_Mdl_Hull_669 is 4.39m AOD. At this node point the modelled in-channel water level is 4.01m AOD, and therefore the crest level is 0.38m above the maximum water level.

198. As such, the water level in the River Hull is not expected to overtop and flood out of bank, indicating that water would not be able to reach Section 8 – TCC-B and that it would also be expected to remain dry and safe from flooding during the 1 in 100 year event.

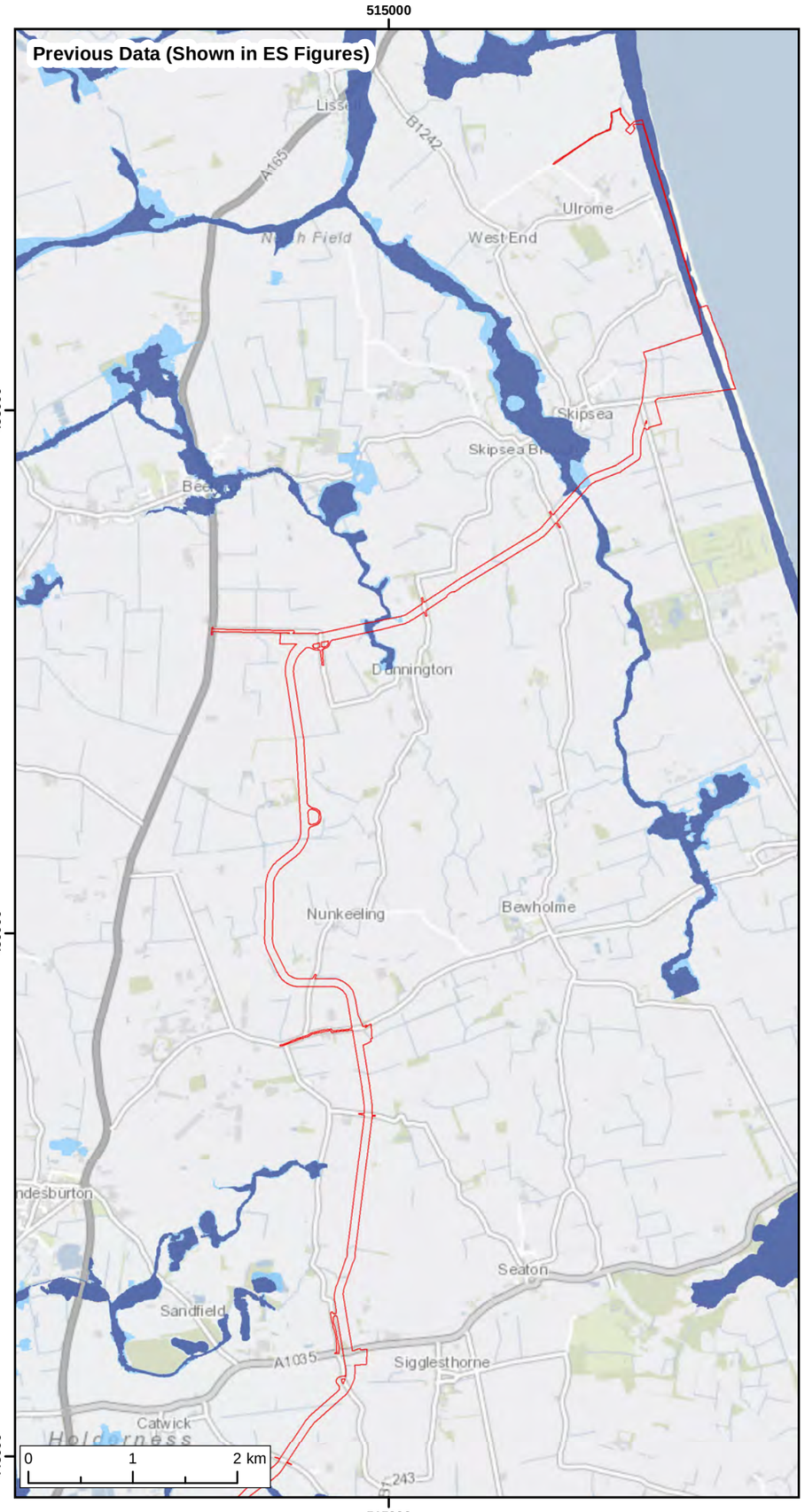
199. Also, in the unlikely event that the flood level would overtop and flood out of bank, due to the raised topographical elevations between the river channels and the TCCs the higher ground would limit the flood water reaching both Section 7 – TCC A and Section 8 – TCC-B.

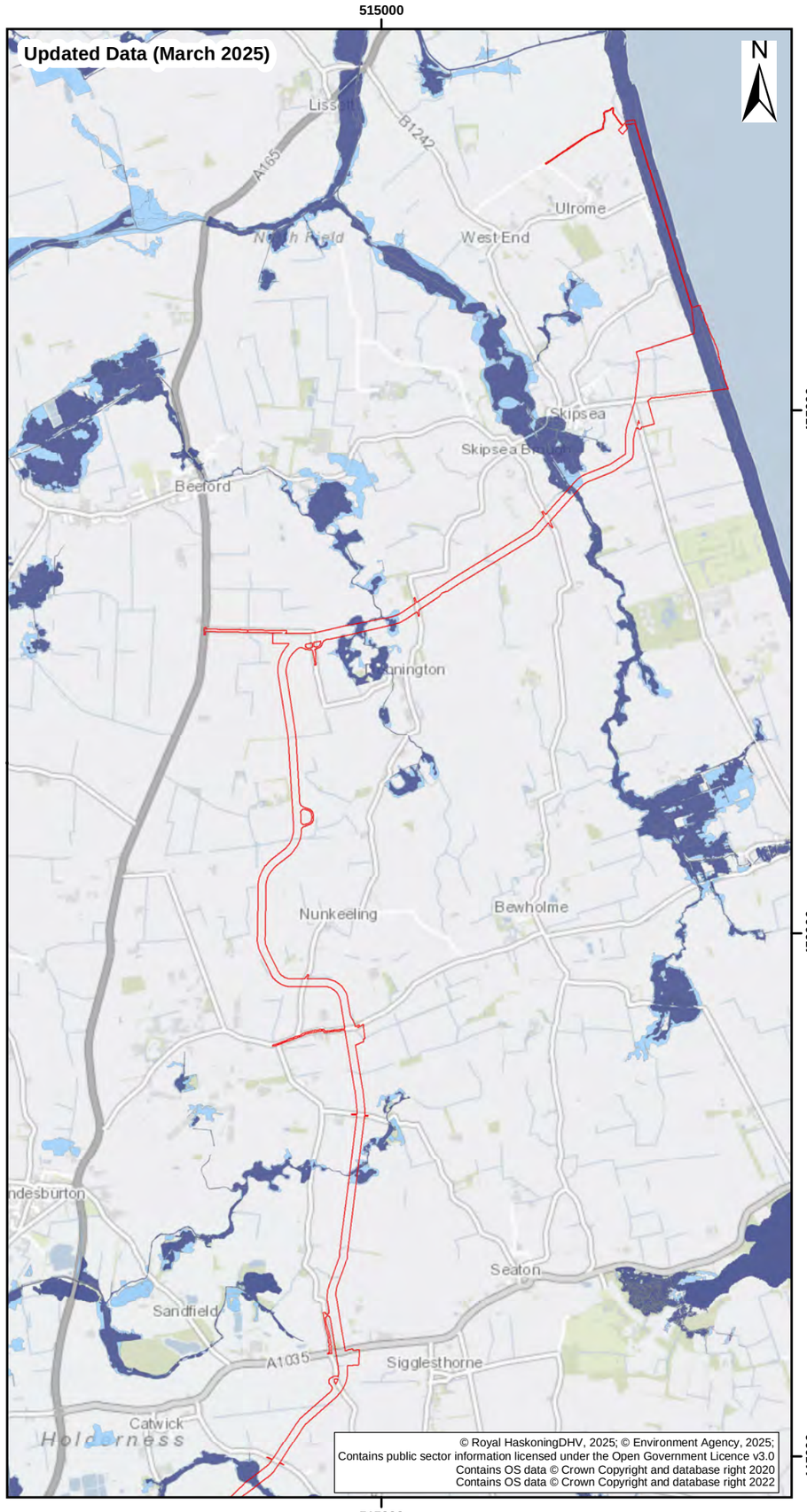
200. Furthermore, there will be no displacement of flood water during the 1 in 100 year event, and as such there would be no increased off-site risk.

201. On the basis of the above assessment the Applicants consider that there are appropriate construction mitigation measures related to the proposed TCCs set out in the **OCoCP (Revision 4)** [Rep4-040], secured through Requirement 19 of the **Draft DCO (Revision 8)** [document reference 3.1] to ensure that there is no impact on the Projects during construction and there is no requirement to incorporate any additional mitigation measures.

202. Additionally, mitigation measures related to emergency response and evacuation are detailed in section 5.18.1 of the **OCoCP (Revision 4)** [Rep4-040]. Although the above review indicates these should not be required, the Applicants have committed to ensuring that these are implemented during construction and therefore have adopted a conservative approach to the mitigation of potential flood risk impacts.

Appendix A – Figures





Legend

- Onshore Development Area
- Flood Zone 3
- Flood Zone 2

S2	P01	28/03/2025	Suitable for Information	SM	ND	SI
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Flood Zones

Figure: 1

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1030

Co-ordinate system: British National Grid

Page Size: A3

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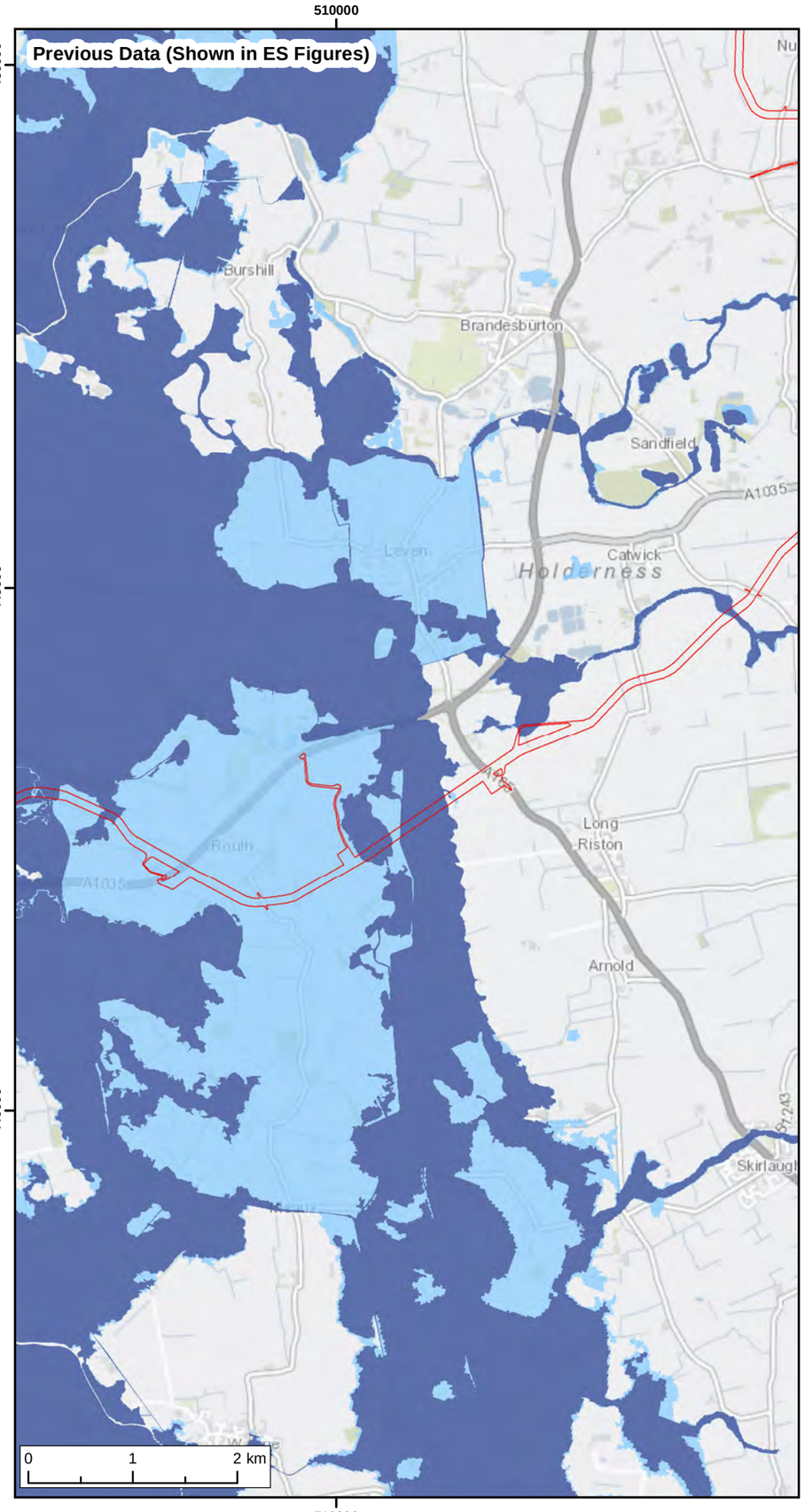

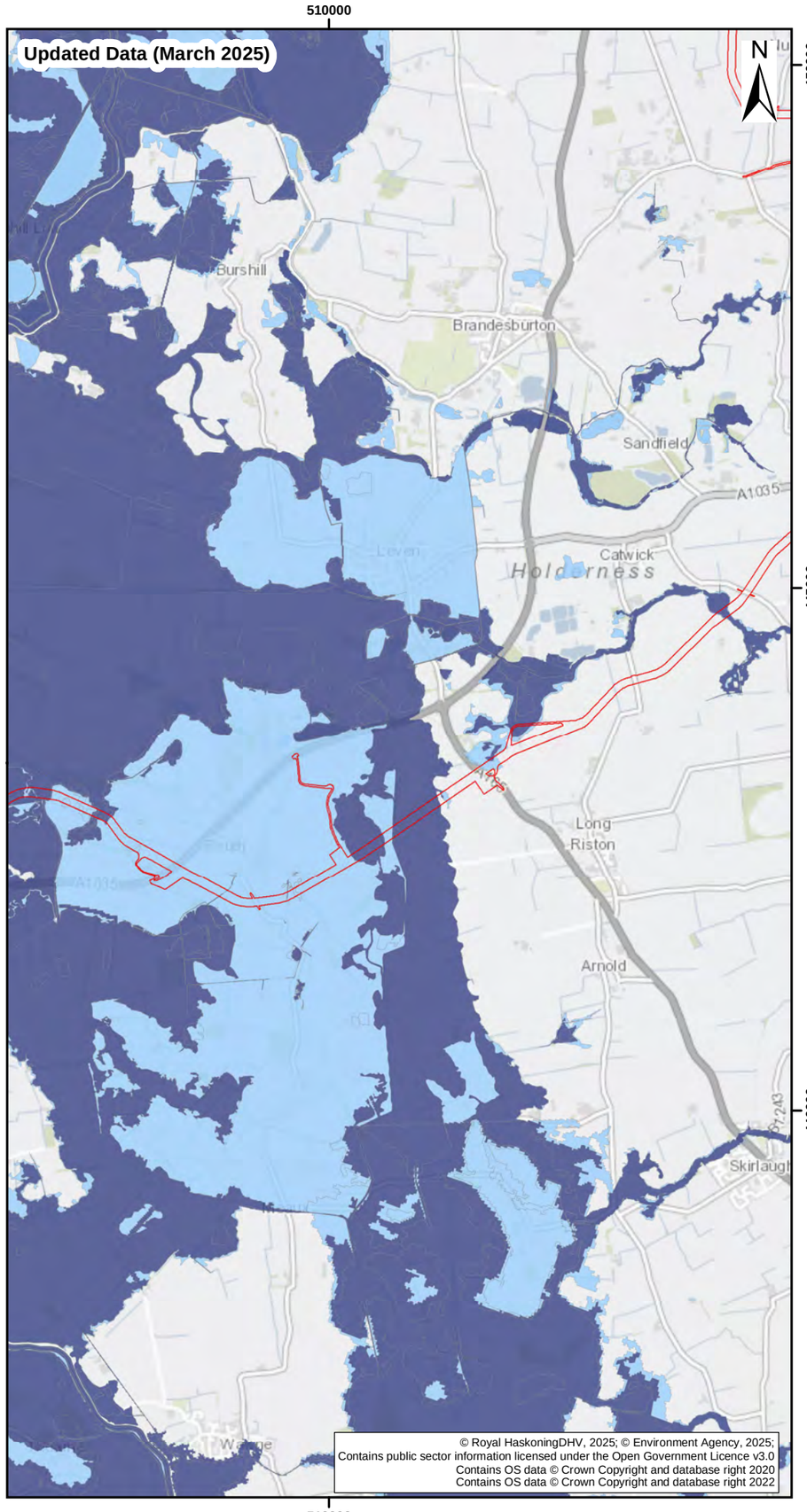

Legend

- Onshore Development Area
- Flood Zone 3
- Flood Zone 2

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SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Flood Zones

Figure: 1

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Scale: 1:52,000

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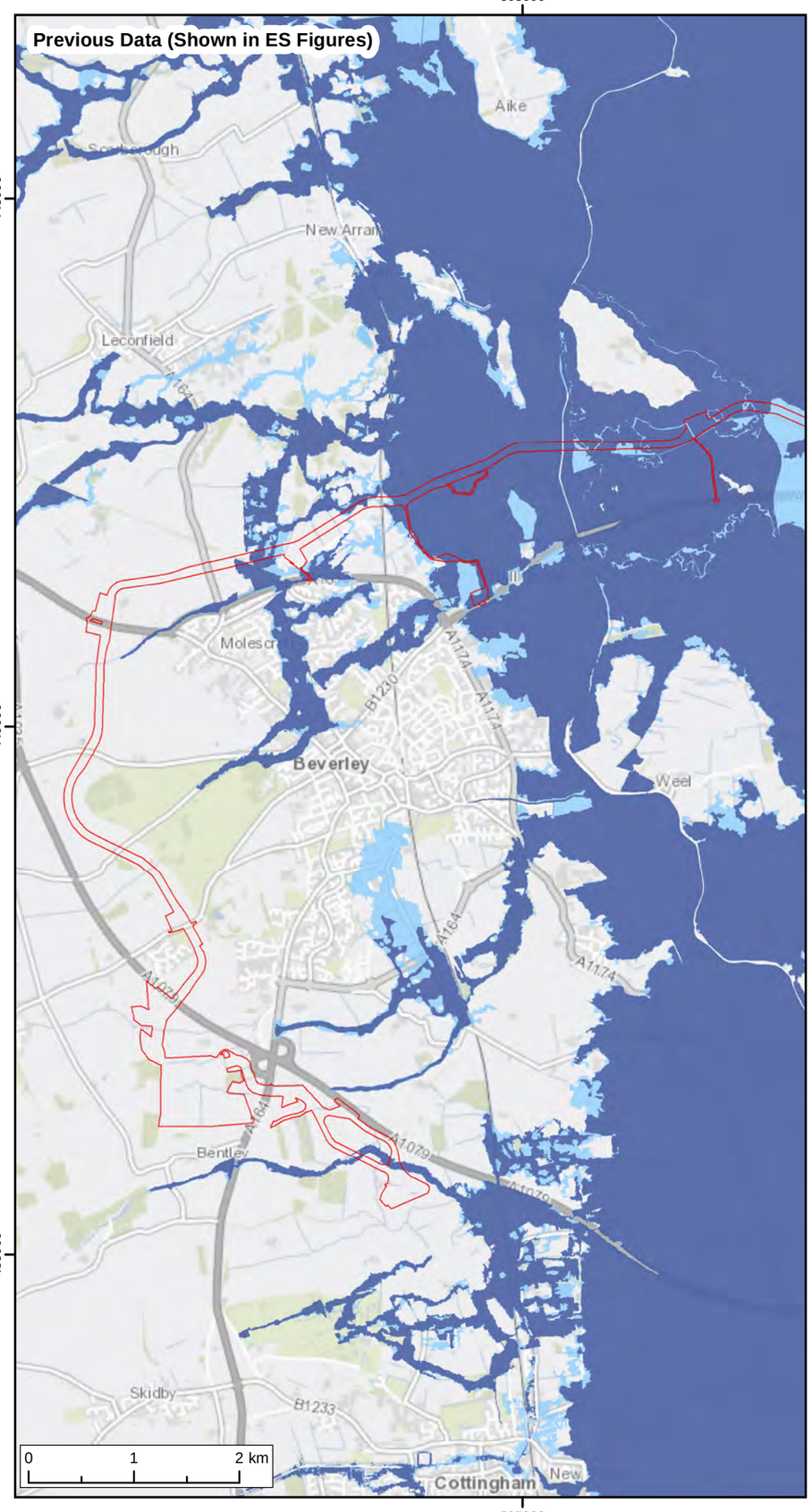
Previous Data (Shown in ES Figures)



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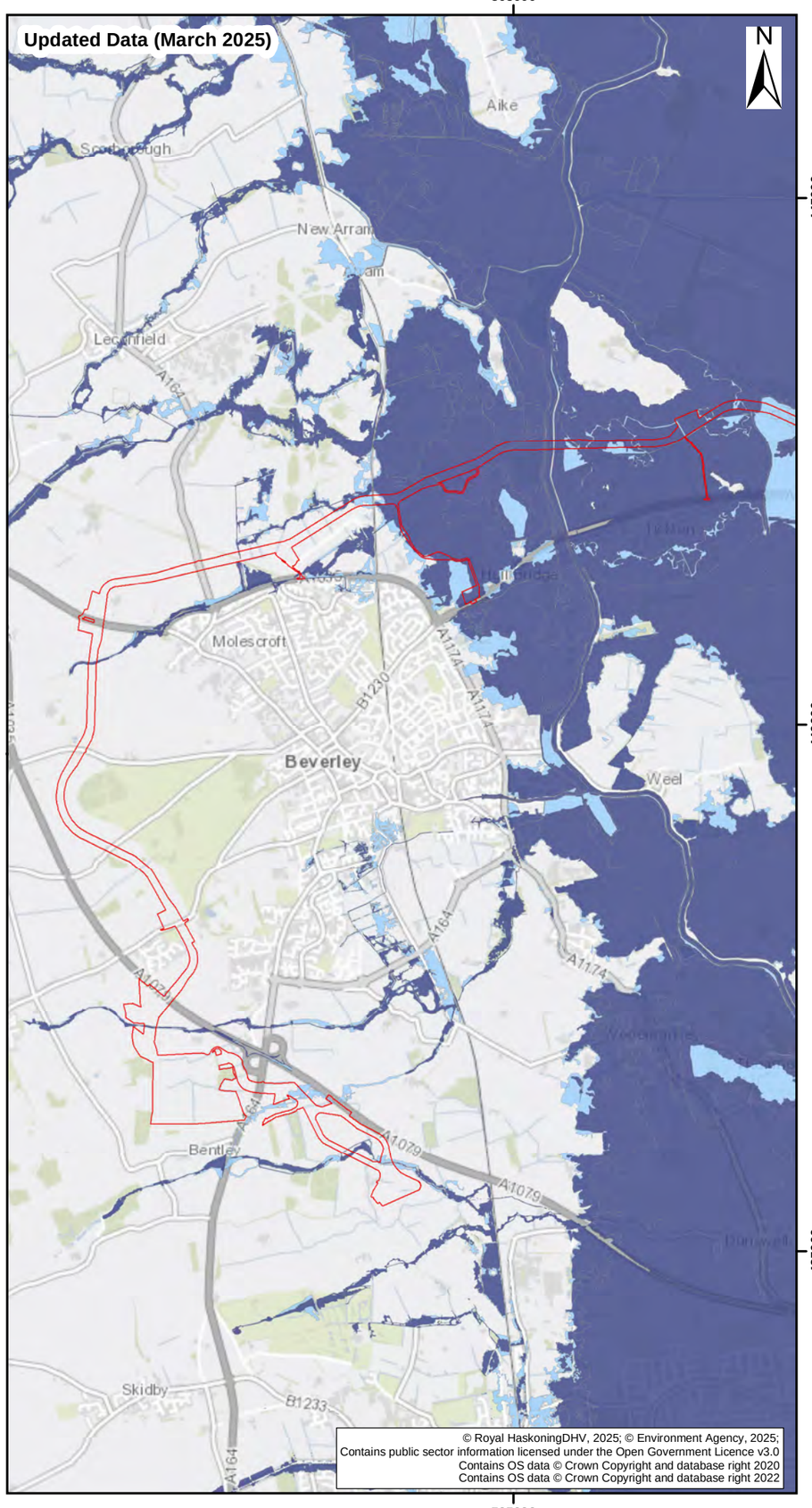

Legend

- Onshore Development Area
- Flood Zone 3
- Flood Zone 2

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SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Flood Zones

Figure: 1

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1030

Co-ordinate system: British National Grid

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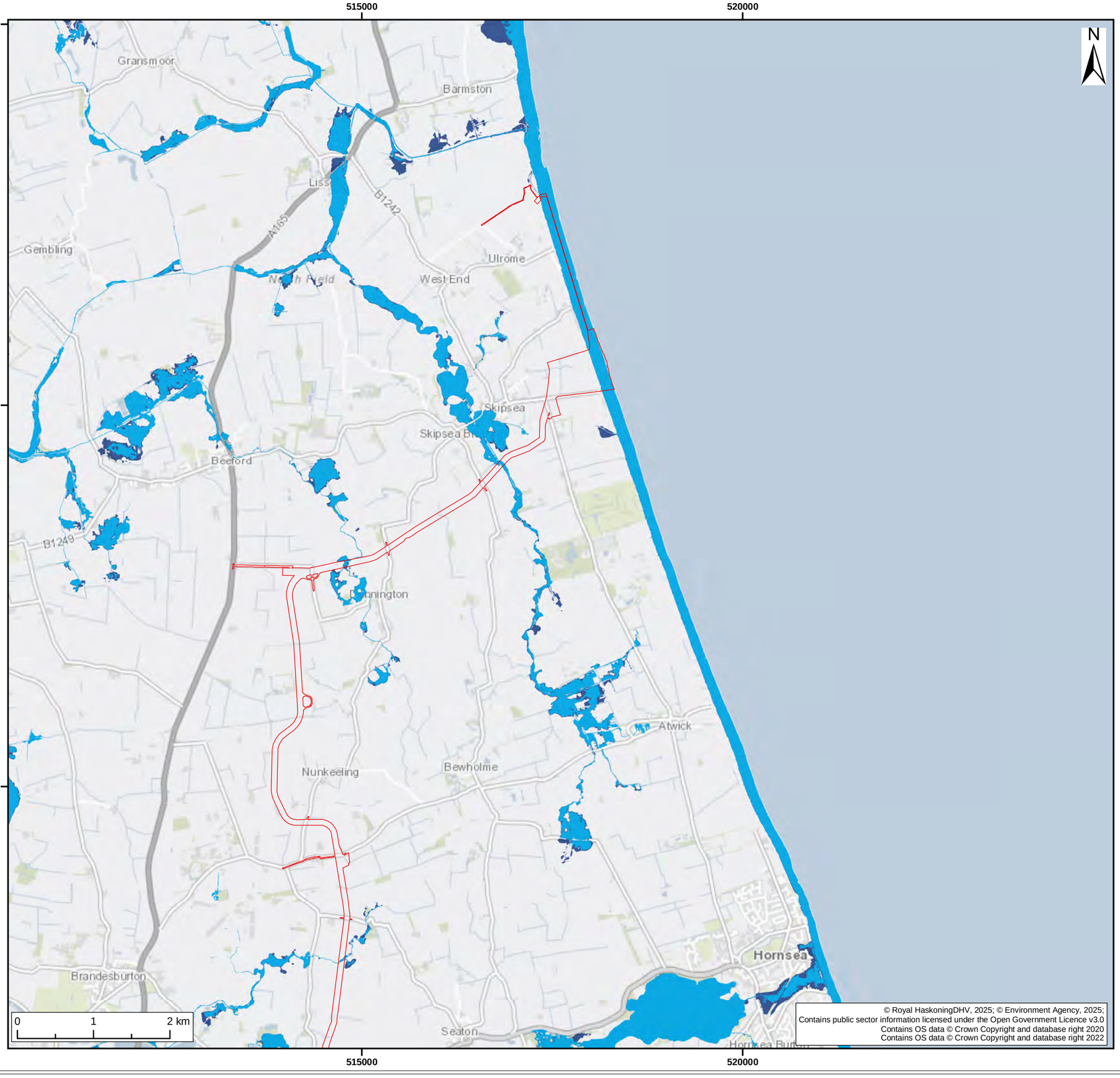

Legend

- Onshore Development Area
- Defended: 3.3% AEP (1 in 30) Rivers/Sea (present day)
- Defended: 3.3% AEP (1 in 30) Rivers/Sea (Climate Change)

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SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

3.3% AEP defended (present day & climate change)

Figure: 2

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1032

Co-ordinate system: British National Grid

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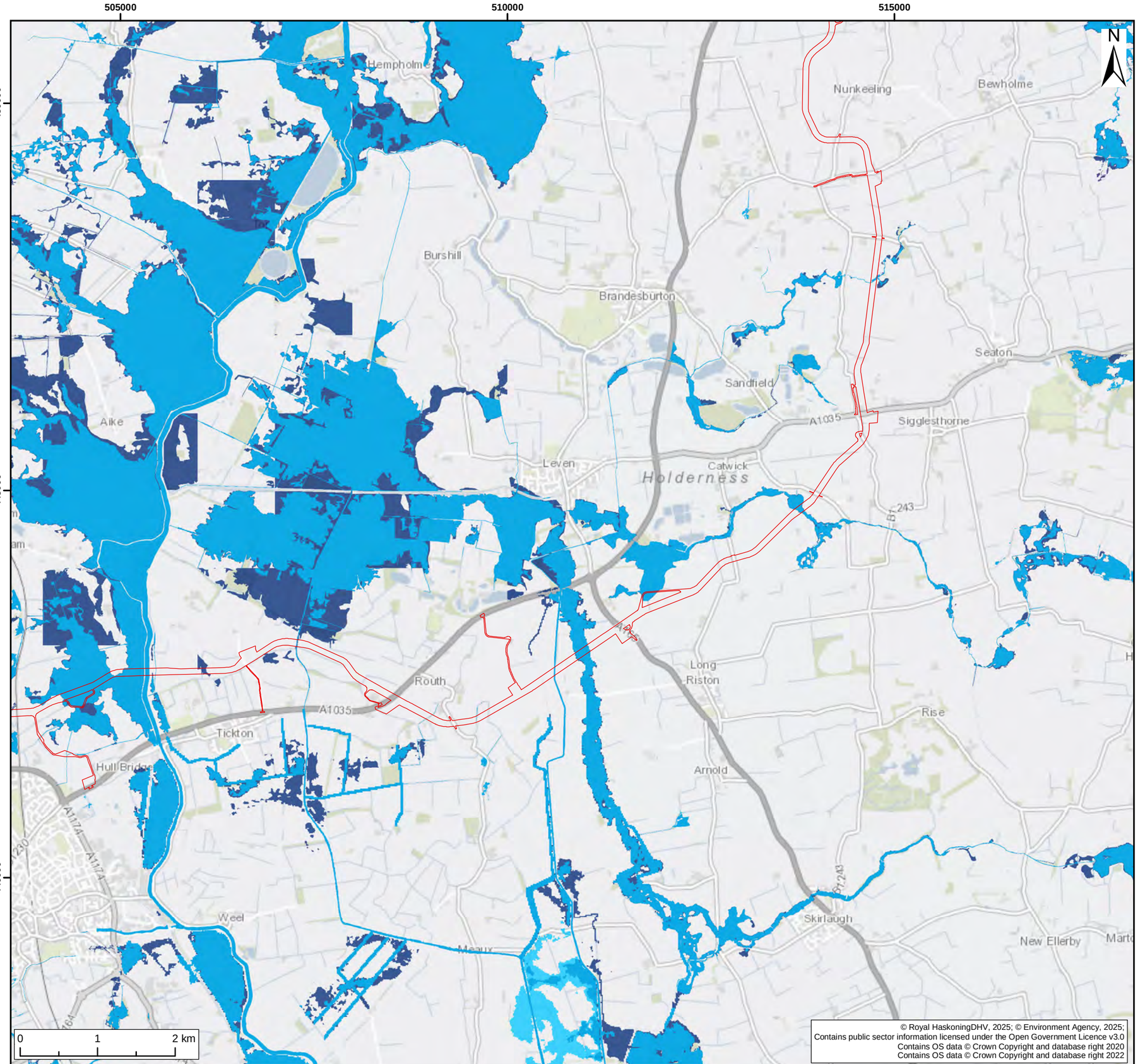

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Legend

- Onshore Development Area
- Defended: 3.3% AEP (1 in 30) Rivers/Sea (present day)
- Defended: 3.3% AEP (1 in 30) Rivers/Sea (Climate Change)

S2	P01	02/04/2025	Suitable for Information	SM	ND	SI
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

3.3% AEP defended (present day & climate change)

Figure: 2	Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1032

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Project:	Report:
Dogger Bank South Offshore Wind Farms	Climate Change

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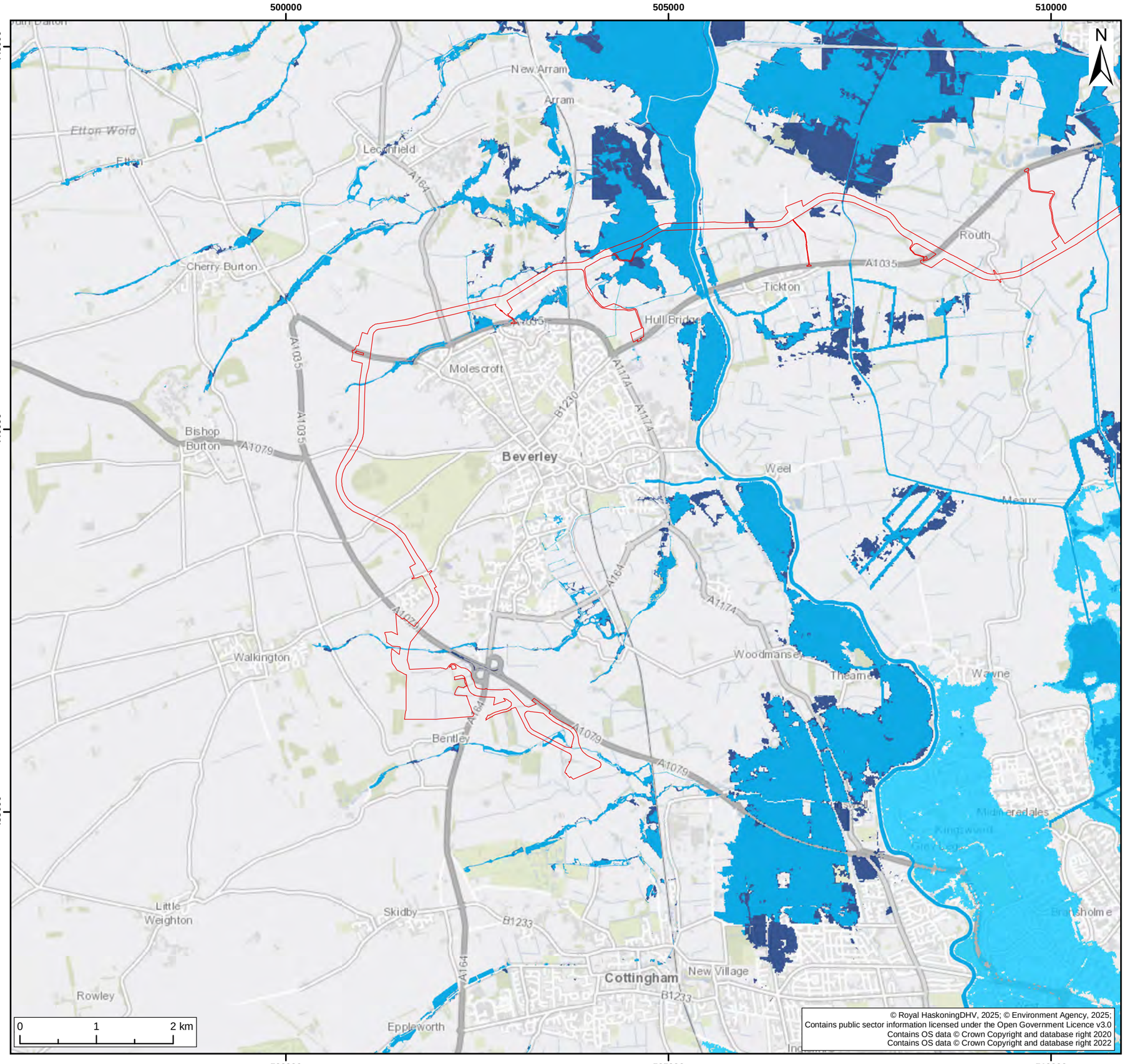

Legend

- Onshore Development Area
- Defended: 3.3% AEP (1 in 30) Rivers/Sea (present day)
- Defended: 3.3% AEP (1 in 30) Rivers/Sea (Climate Change)

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SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

3.3% AEP defended (present day & climate change)

Figure: 2	Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1032

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Project:	Report:
Dogger Bank South Offshore Wind Farms	Climate Change

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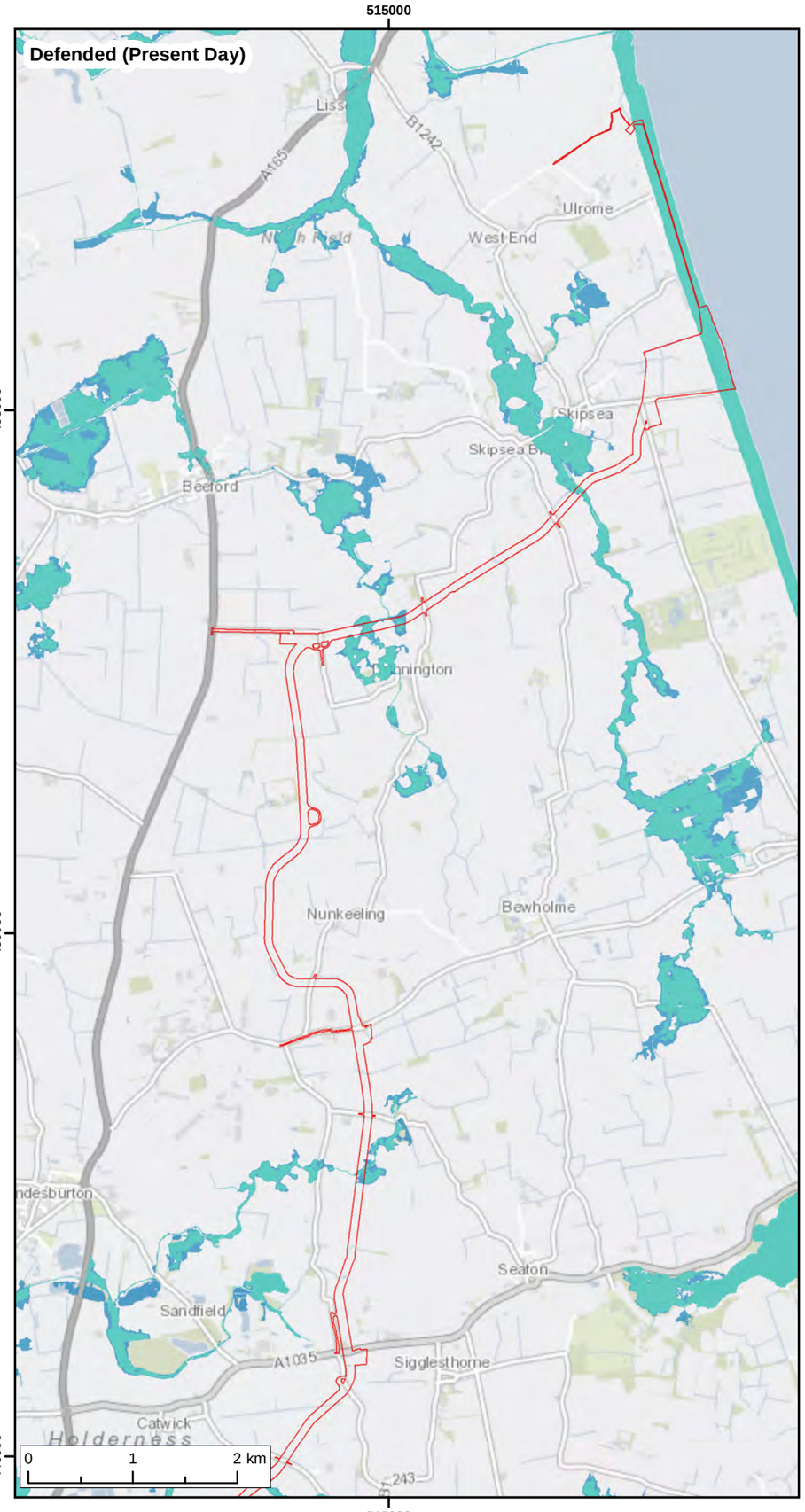

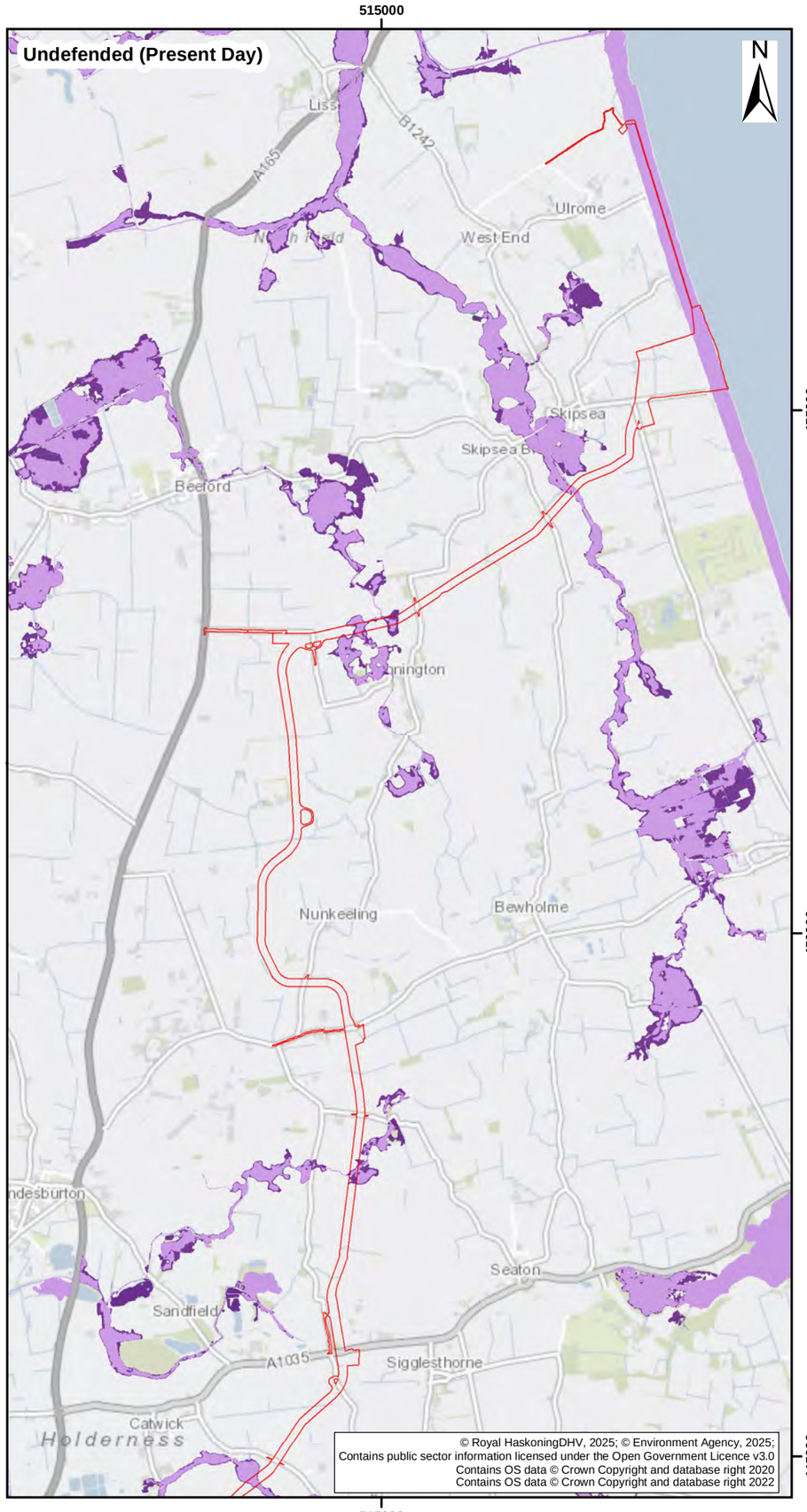

Legend

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- Undefended: 0.1% AEP (1 in 1000) Rivers/Sea

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P01	02/04/2025	Suitable for Information	SM	ND	SI

Title:

Present day extents (defended and undefended)

Figure: 3

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1031

Co-ordinate system: British National Grid

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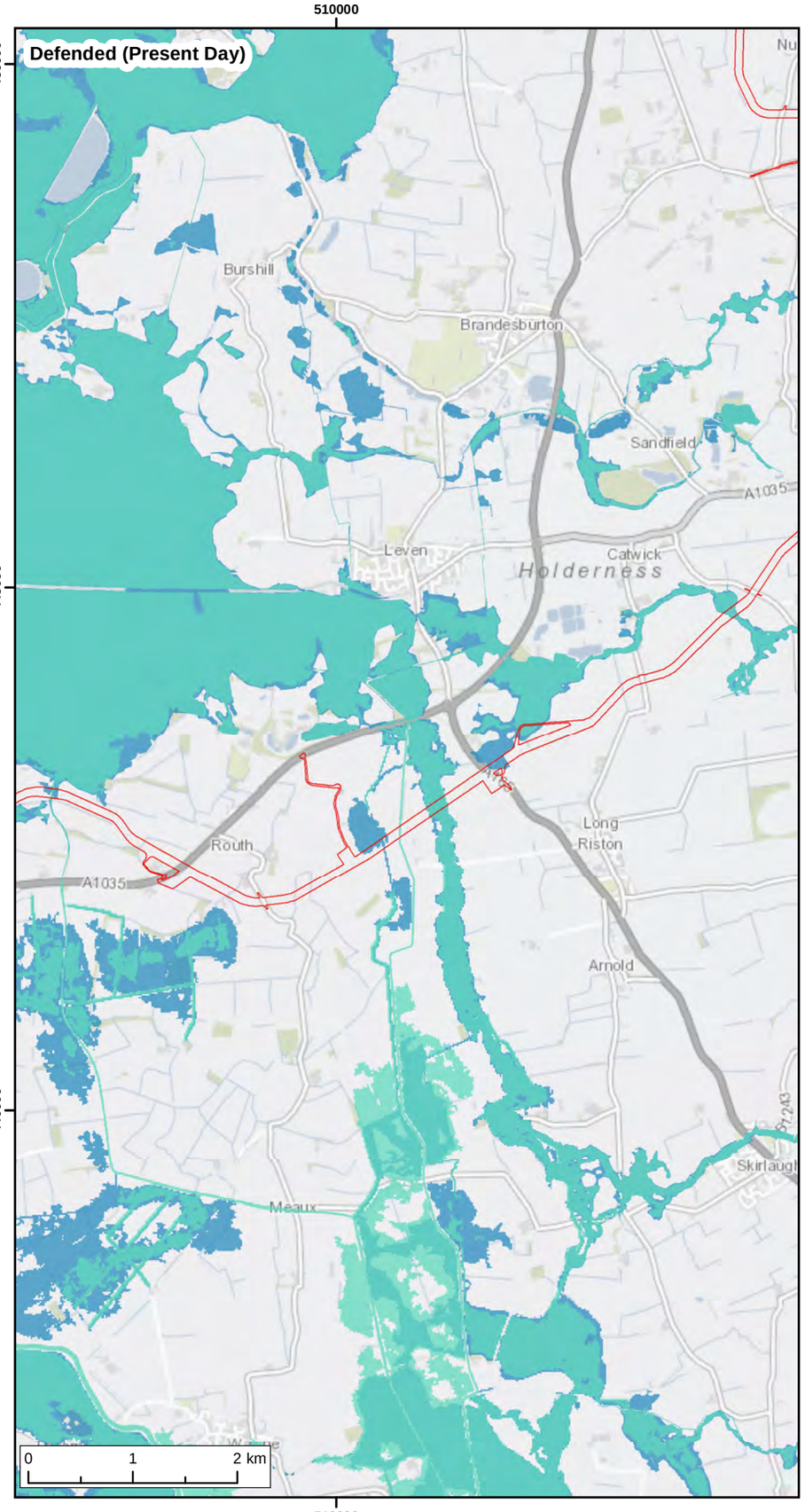

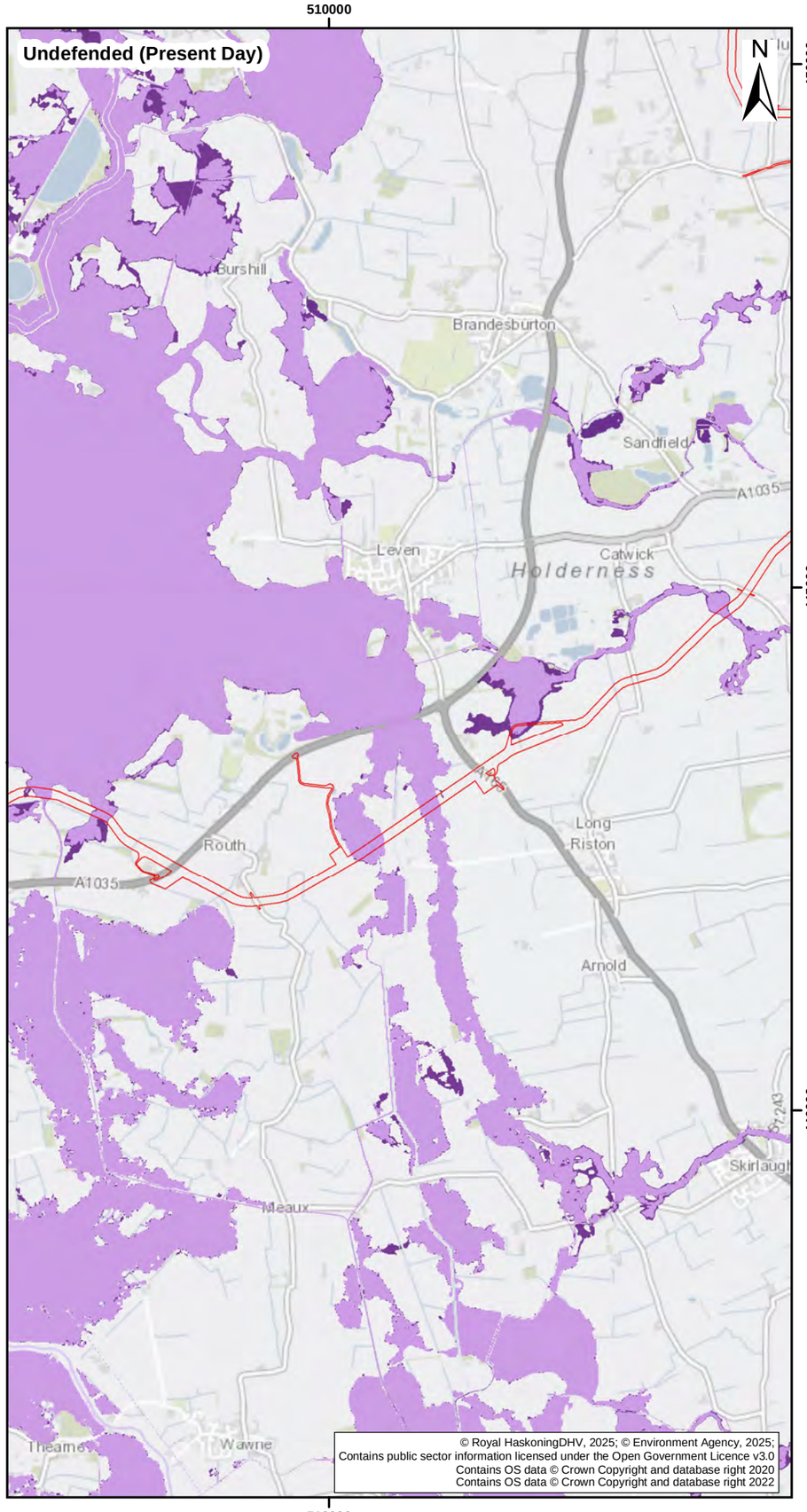

Legend

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- Defended: 0.1% AEP (1 in 1000) Rivers/Sea
- Undefended: 1% AEP (1 in 100) Rivers/ 0.5% (1 in 200) Sea
- Undefended: 0.1% AEP (1 in 1000) Rivers/Sea

S2	P01	02/04/2025	Suitable for Information	SM	ND	SI
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Present day extents (defended and undefended)

Figure: 3

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1031

Co-ordinate system: British National Grid

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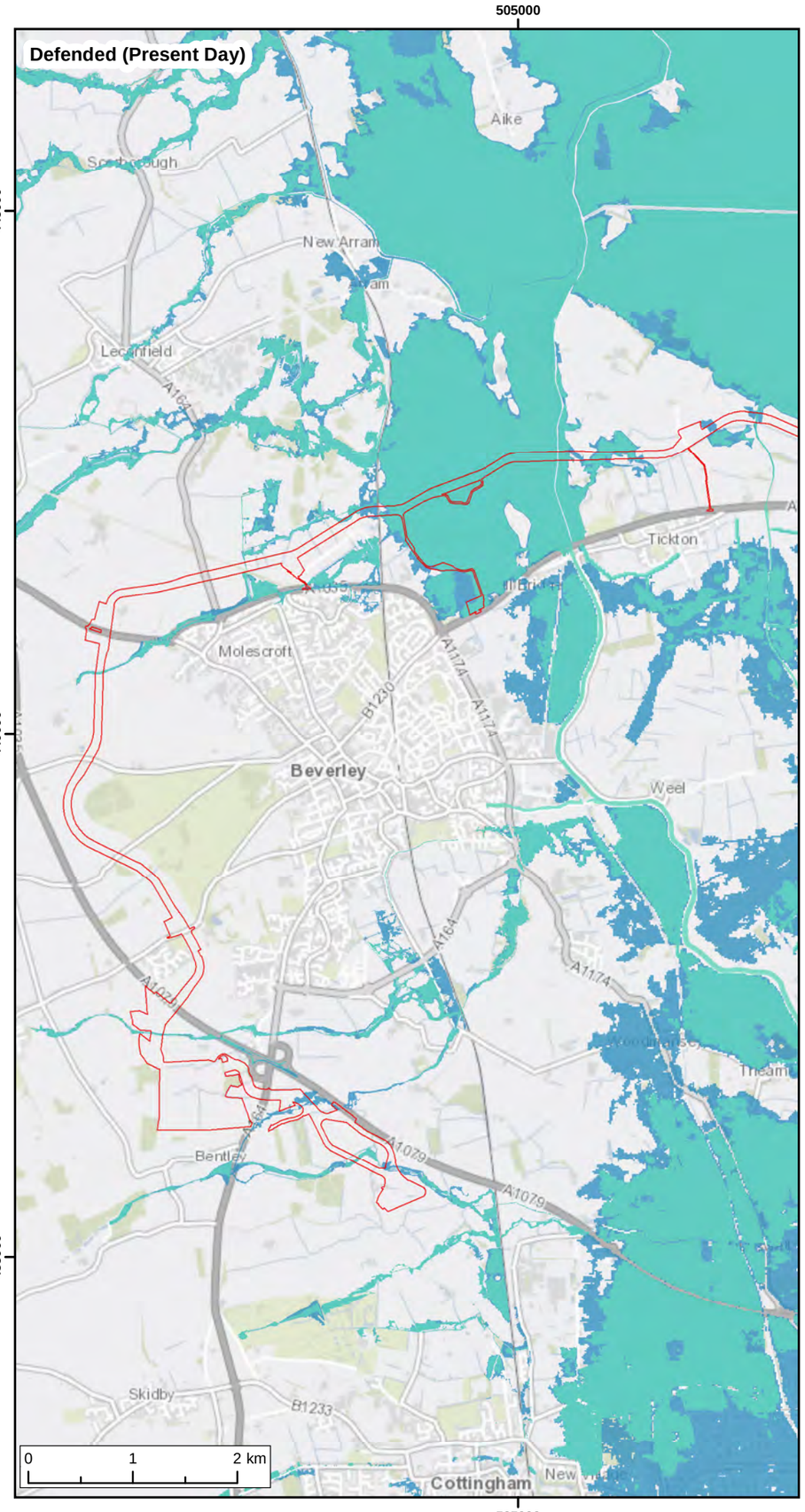

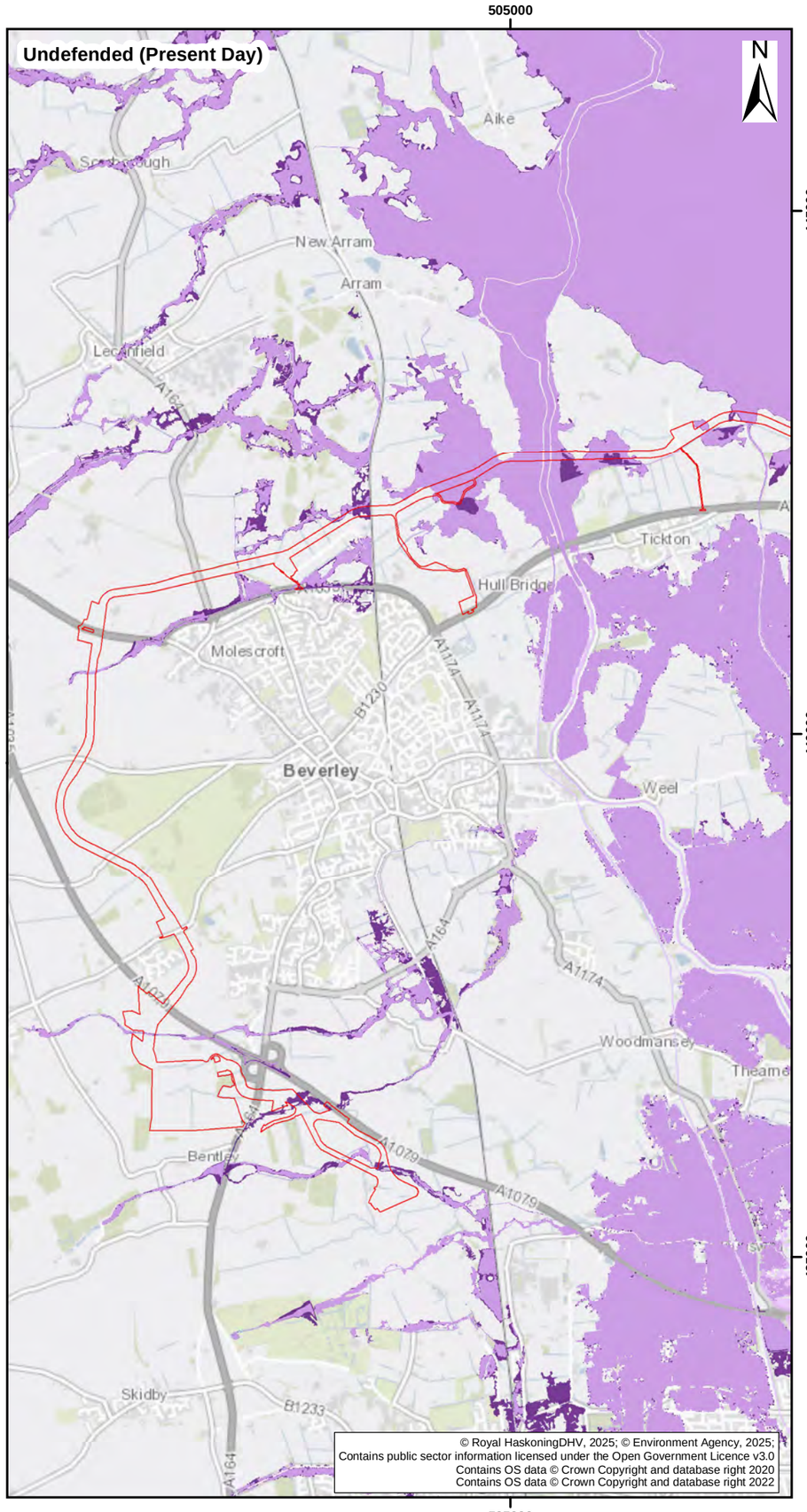

Legend

- Onshore Development Area
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- Undefended: 1% AEP (1 in 100) Rivers/ 0.5% (1 in 200) Sea
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SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P01	02/04/2025	Suitable for Information	SM	ND	SI

Title:

Present day extents (defended and undefended)

Figure: 3

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1031

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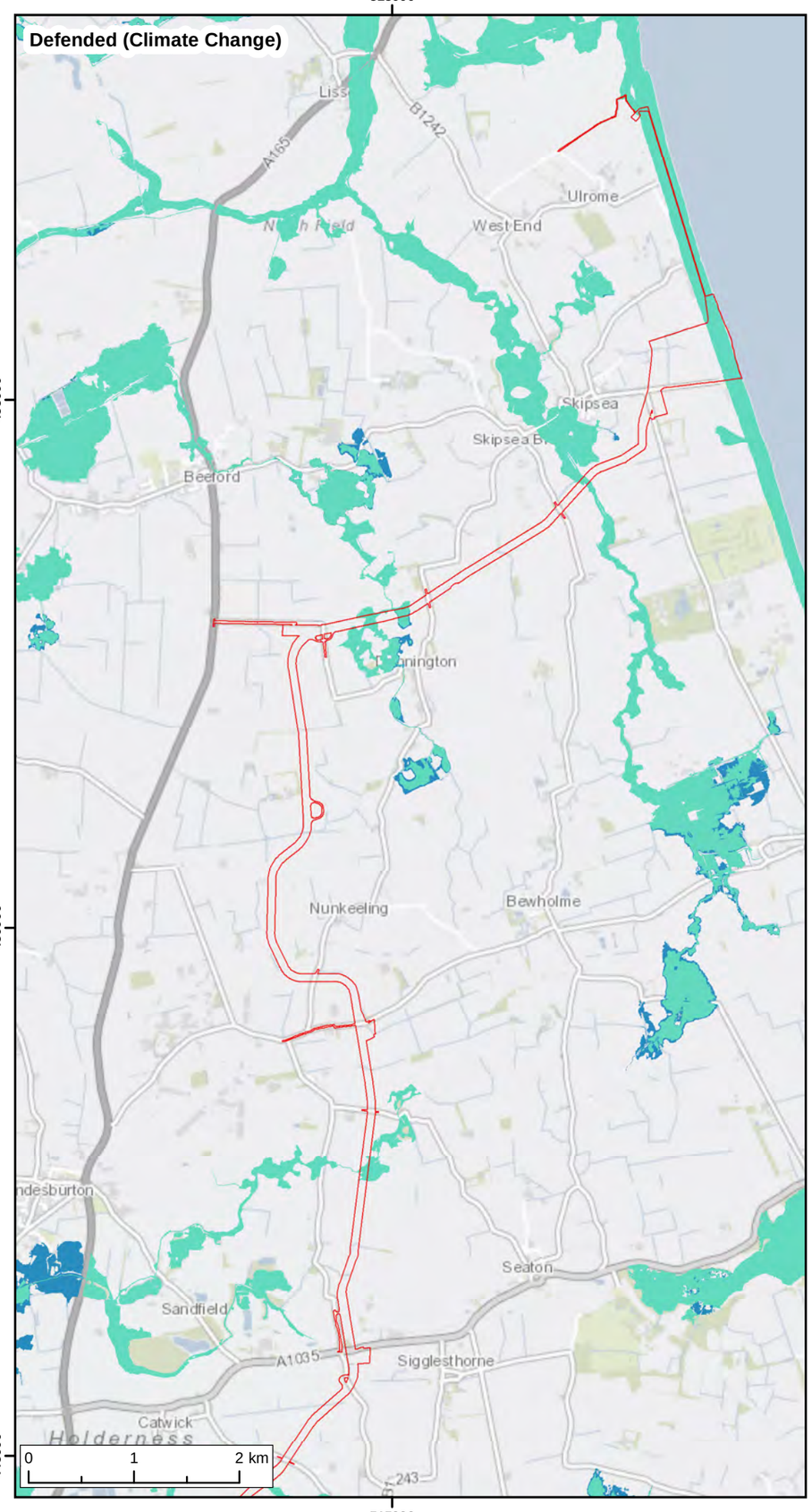
515000

455000

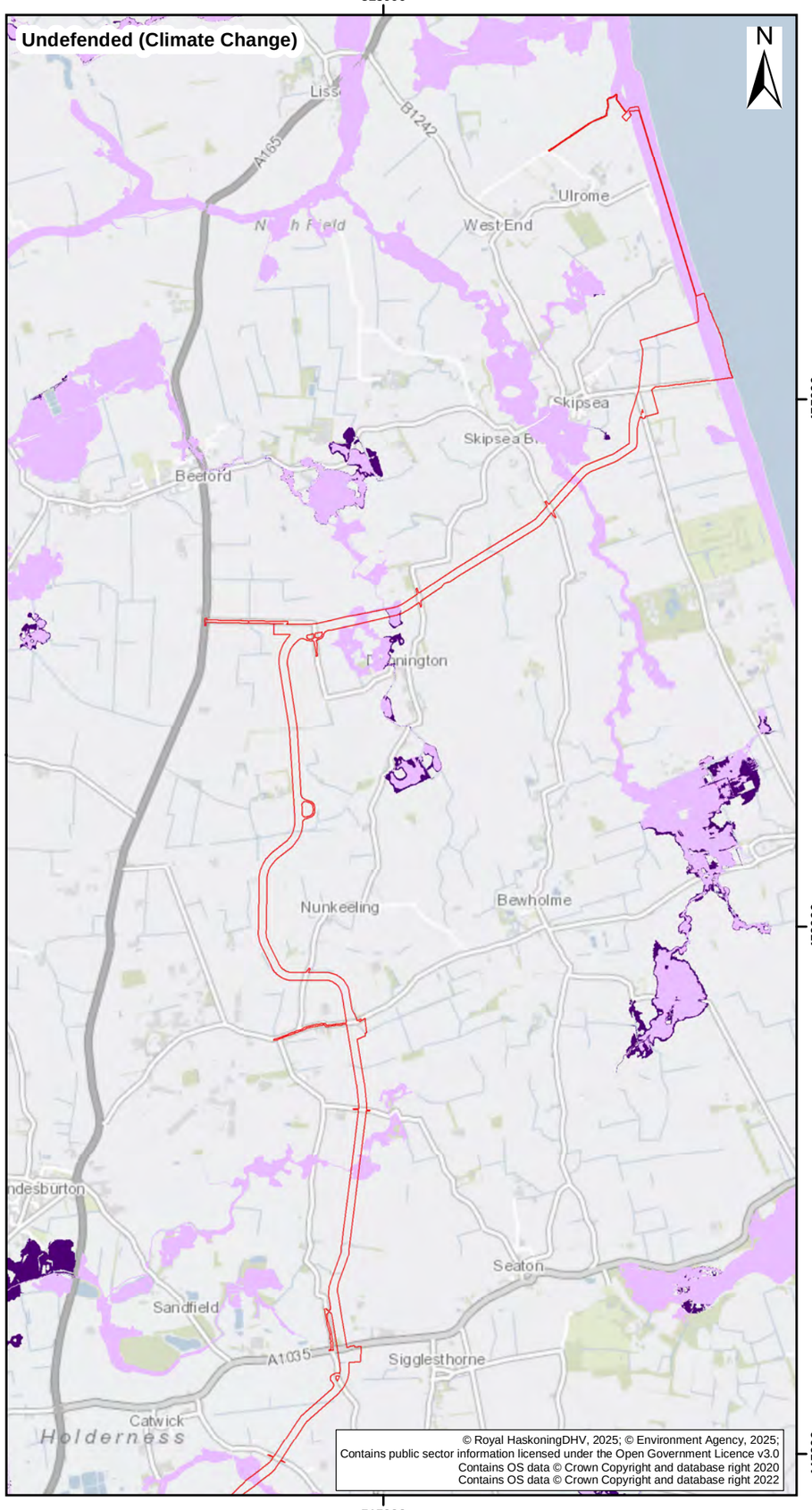
450000

445000

Defended (Climate Change)



Undefended (Climate Change)



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Legend

- Onshore Development Area
- Defended: 1% AEP (1 in 100) Rivers/ 0.5% (1 in 200) Sea
- Defended: 0.1% AEP (1 in 1000) Rivers/Sea
- Undefended: 1% AEP (1 in 100) Rivers/ 0.5% (1 in 200) Sea
- Undefended: 0.1% AEP (1 in 1000) Rivers/Sea

S2	P01	02/04/2025	Suitable for Information	SM	ND	SI
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Climate Change Extents (defended and undefended)

Figure: 4

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1033

Co-ordinate system: British National Grid

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Project: Dogger Bank South Offshore Wind Farms

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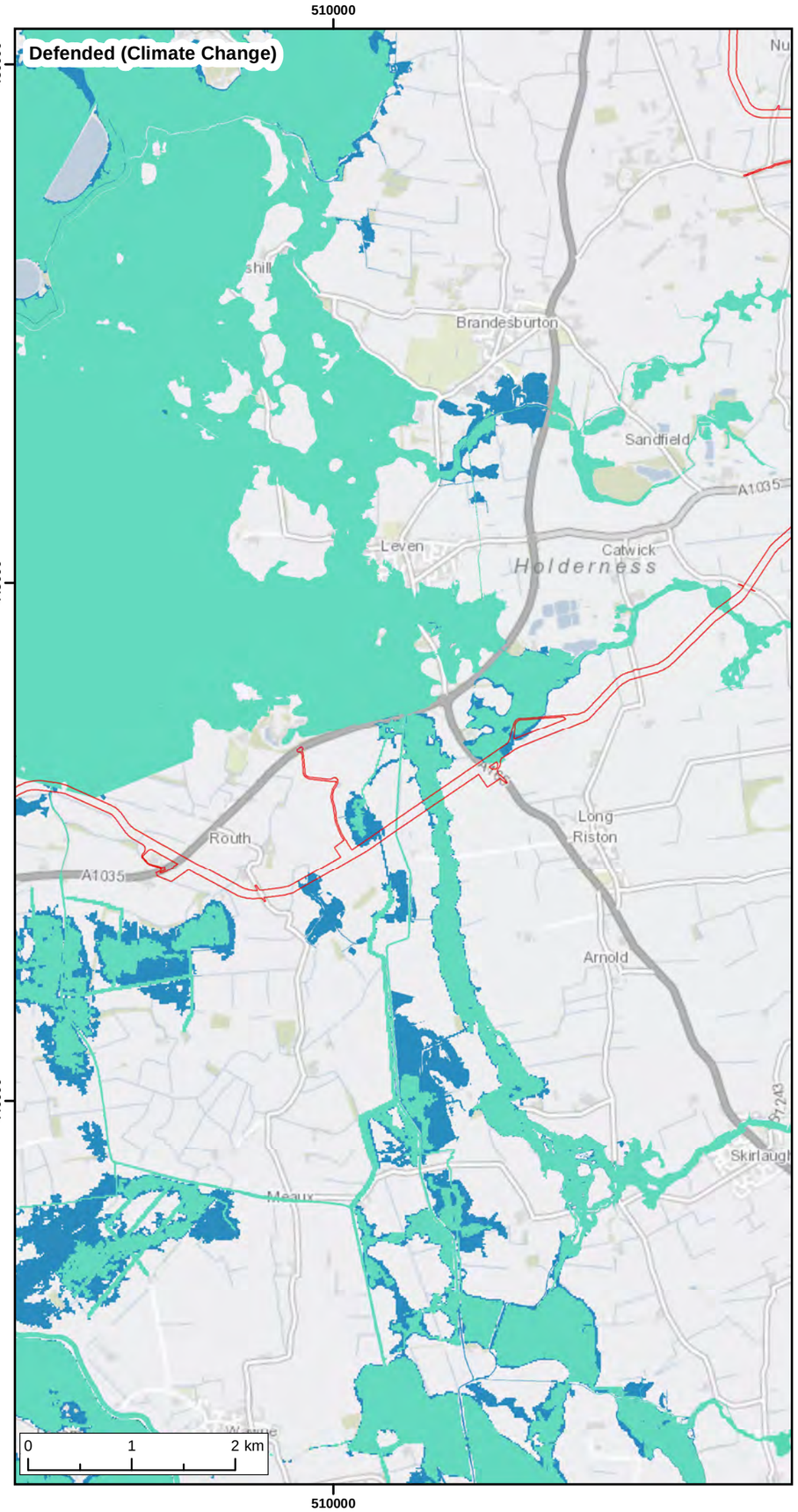

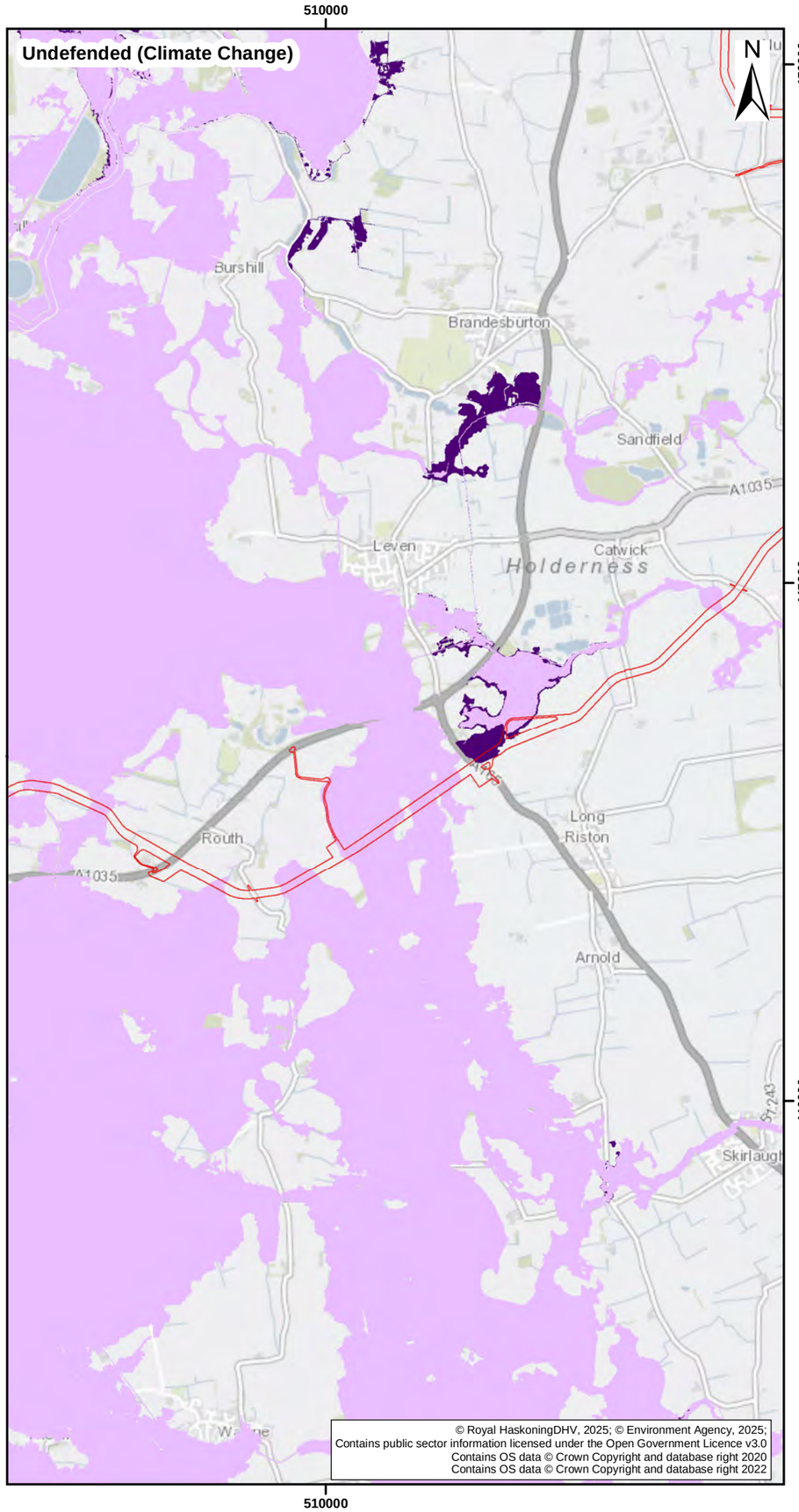

Legend

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- Defended: 0.1% AEP (1 in 1000) Rivers/Sea
- Undefended: 1% AEP (1 in 100) Rivers/ 0.5% (1 in 200) Sea
- Undefended: 0.1% AEP (1 in 1000) Rivers/Sea

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P01	02/04/2025	Suitable for Information	SM	ND	SI

Title:

Climate Change Extents (defended and undefended)

Figure: 4	Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1033	
Co-ordinate system: British National Grid	Page Size: A3	Scale: 1:52,000
Project: Dogger Bank South Offshore Wind Farms	Report: Climate Change	

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DBS Offshore Wind

Defended (Climate Change)

Undefended (Climate Change)

505000

445000

440000

435000

0 1 2 km

Legend

- Onshore Development Area
- Defended: 1% AEP (1 in 100) Rivers/ 0.5% (1 in 200) Sea
- Defended: 0.1% AEP (1 in 1000) Rivers/Sea
- Undefended: 1% AEP (1 in 100) Rivers/ 0.5% (1 in 200) Sea
- Undefended: 0.1% AEP (1 in 1000) Rivers/Sea

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S2	P01	02/04/2025	Suitable for Information	SM	ND	SI
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Climate Change Extents (defended and undefended)

Figure: 4

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1033

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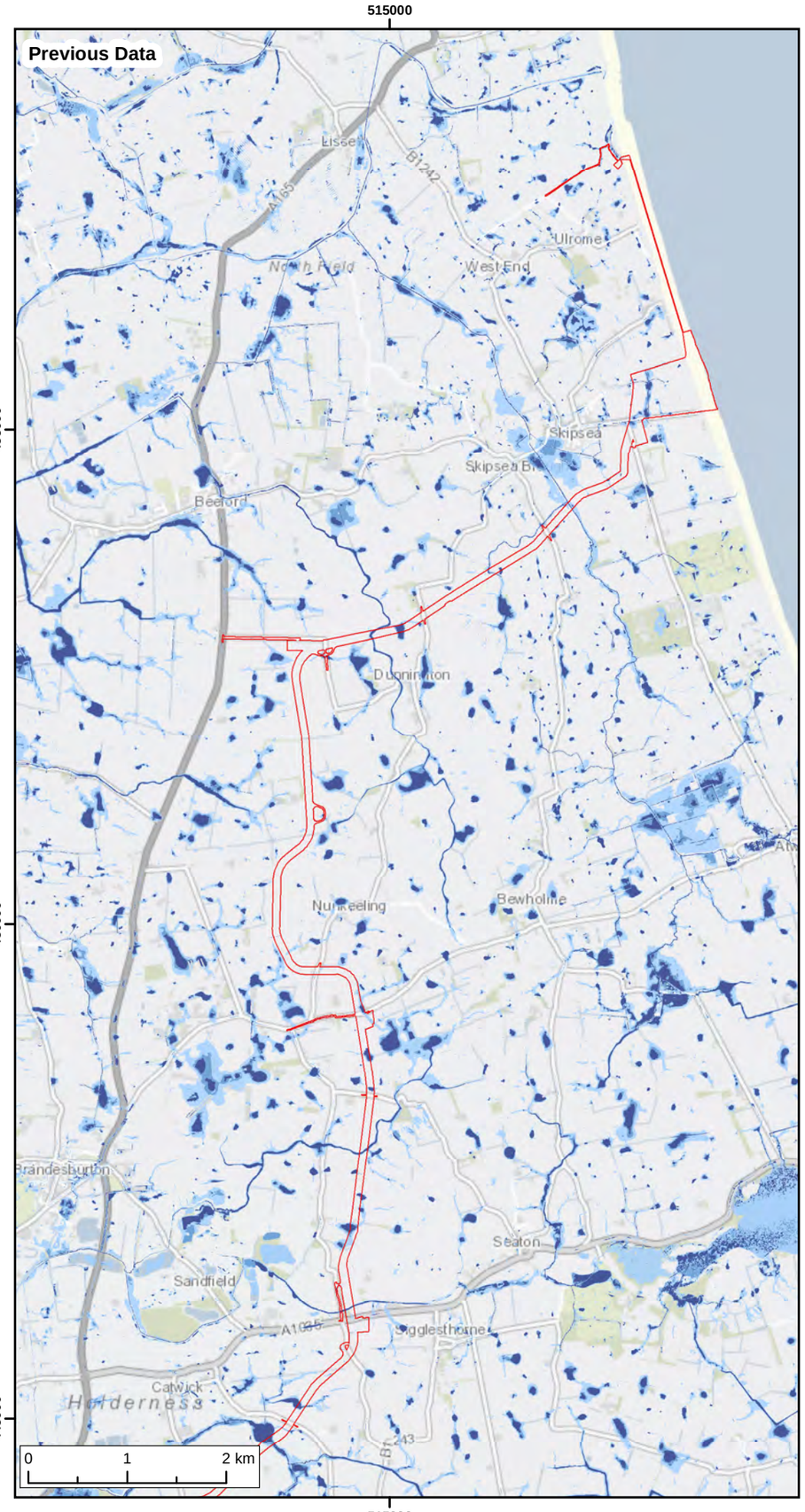

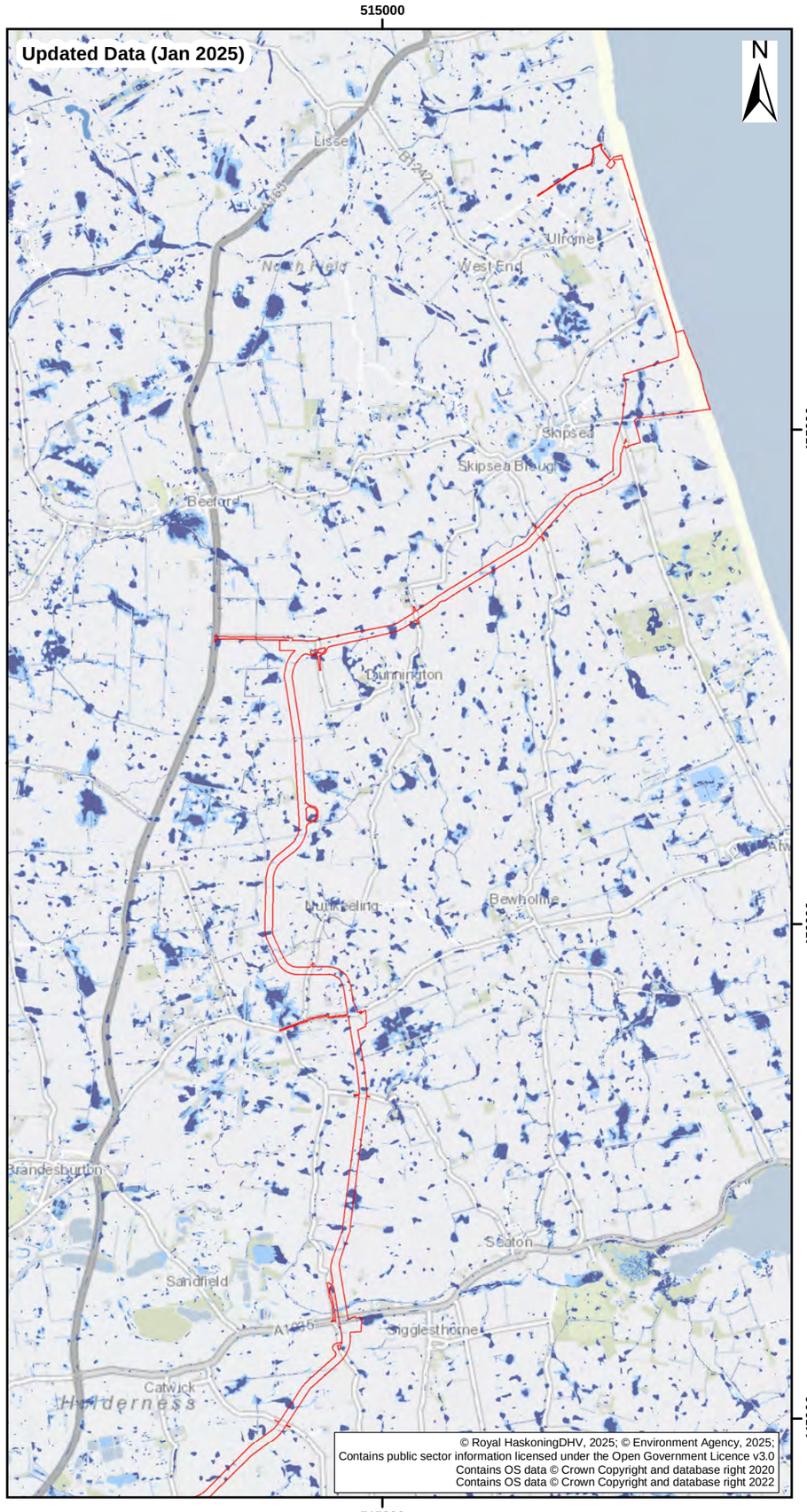

Legend

Onshore Development Area

Flood Likelihood Category

High chance

More than 3.3% chance each year

Medium chance

Between 1% and 3.3% chance each year

Low chance

Between 0.1% & 1% chance each year

S2	P01	02/04/2025	Suitable for Information	SM	ND	HW
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Environment Agency Risk of Flooding
Surface Water

Figure: 5

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1019

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:55,000

Project:

Dogger Bank South
Offshore Wind Farms

Report:

Climate
Change

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Previous Data

Updated Data (Jan 2025)

510000

450000

445000

440000

N

0 1 2 km

Legend

Onshore Development Area

Flood Likelihood Category

- High chance
  - More than 3.3% chance each year
- Medium chance
  - Between 1% and 3.3% chance each year
- Low chance
  - Between 0.1% & 1% chance each year

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P01	02/04/2025	Suitable for Information	SM	ND	HW

Title:

Environment Agency Risk of Flooding
Surface Water

Figure: 5

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1019

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:55,000

Project:

Dogger Bank South
Offshore Wind Farms

Report:

Climate
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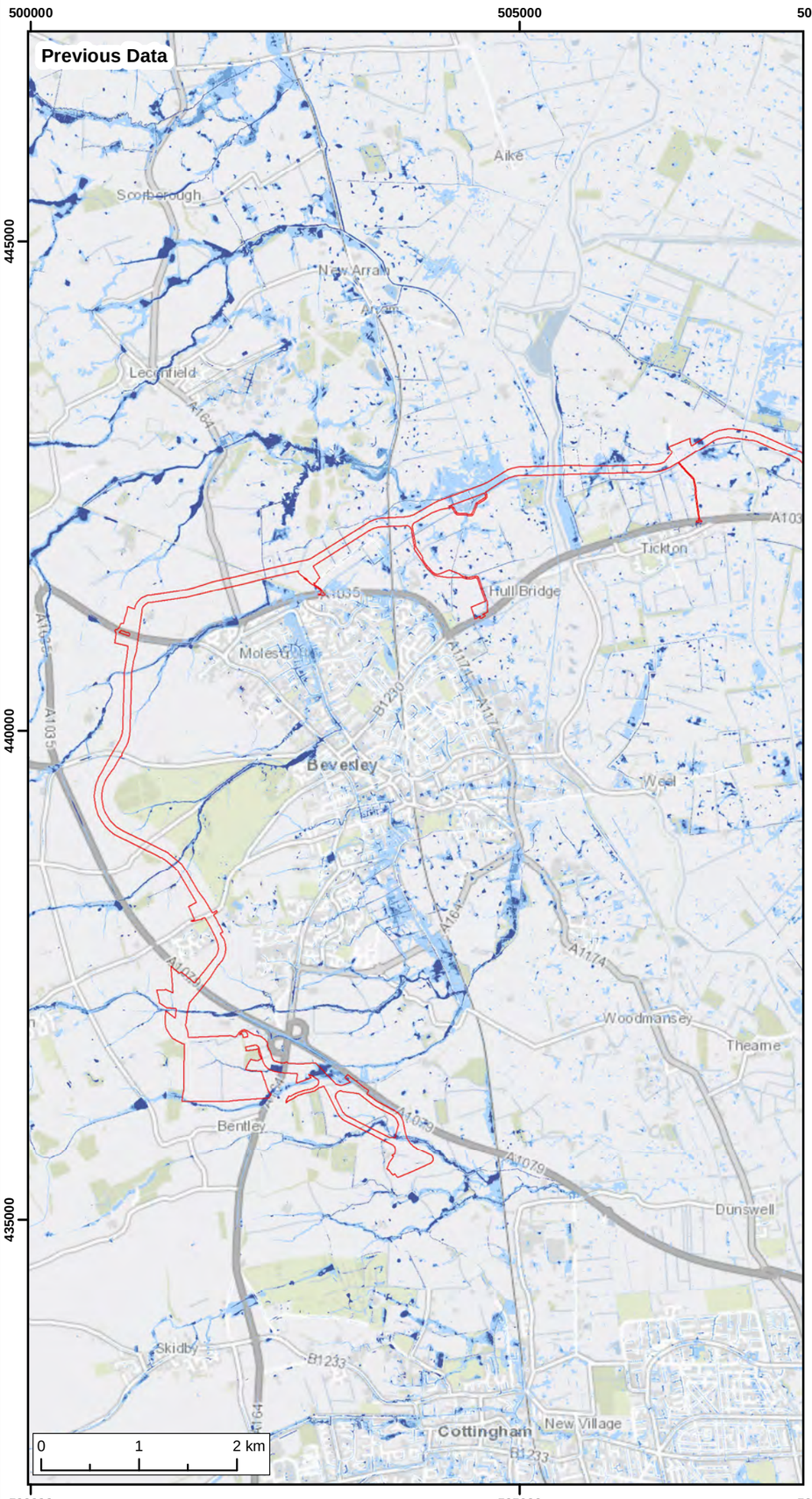

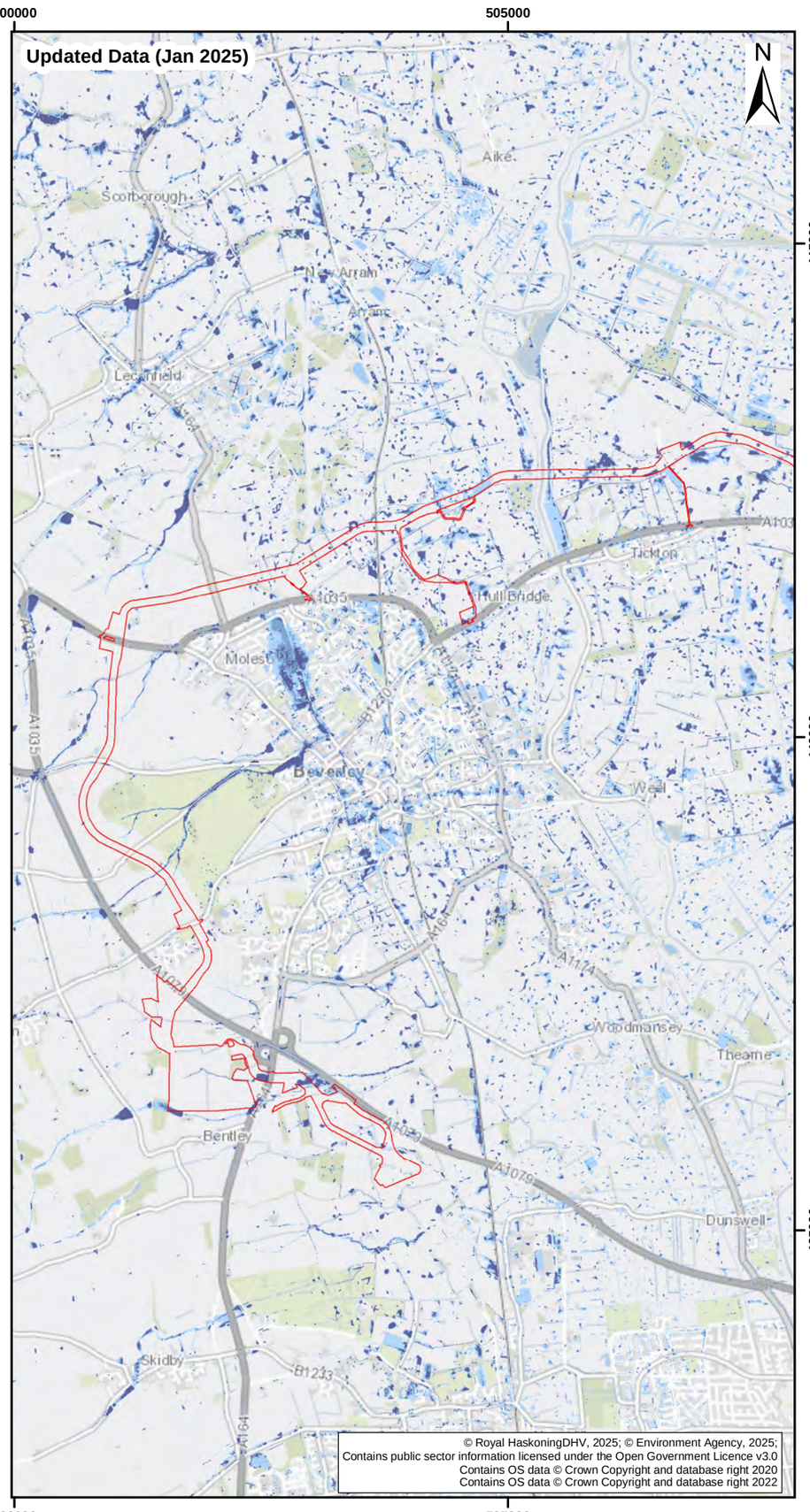

Legend

Onshore Development Area

Flood Likelihood Category

High chance

More than 3.3% chance each year

Medium chance

Between 1% and 3.3% chance each year

Low chance

Between 0.1% & 1% chance each year

S2	P01	02/04/2025	Suitable for Information	SM	ND	HW
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Environment Agency Risk of Flooding
Surface Water

Figure: 5

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1019

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:55,000

Project:

Dogger Bank South
Offshore Wind Farms

Report:

Climate
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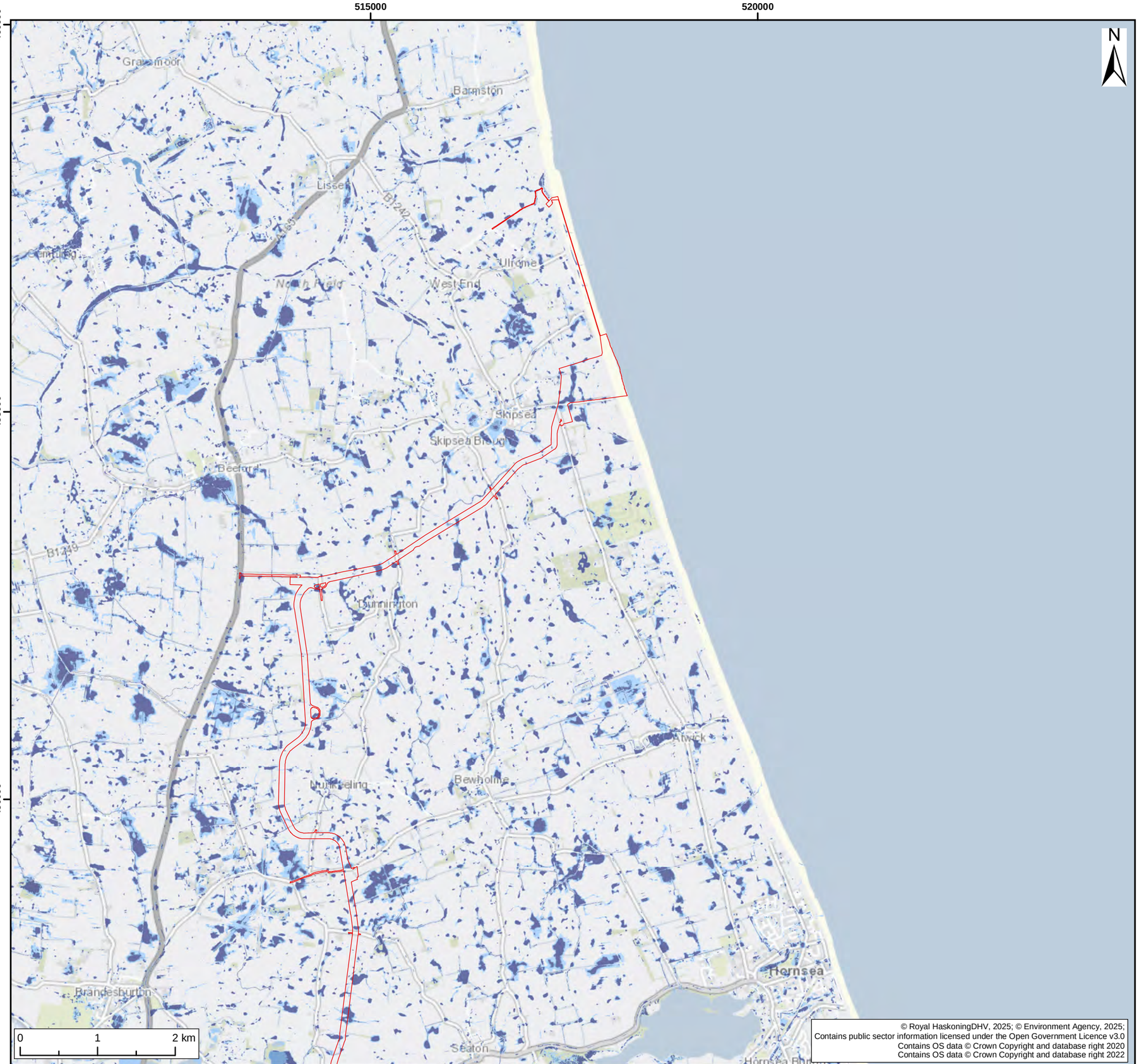

Legend

Onshore Development Area

Flood Likelihood Category

High chance

More than 3.3% chance each year

Medium chance

Between 1% and 3.3% chance each year

Low chance

Between 0.1% & 1% chance each year

S2	P01	02/04/2025	Suitable for Information	SM	ND	HW
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Environment Agency Risk of Flooding
Surface Water Climate Change

Figure: 6

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1021

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:50,000

Project:

Dogger Bank South
Offshore Wind Farms

Report:

Climate
Change

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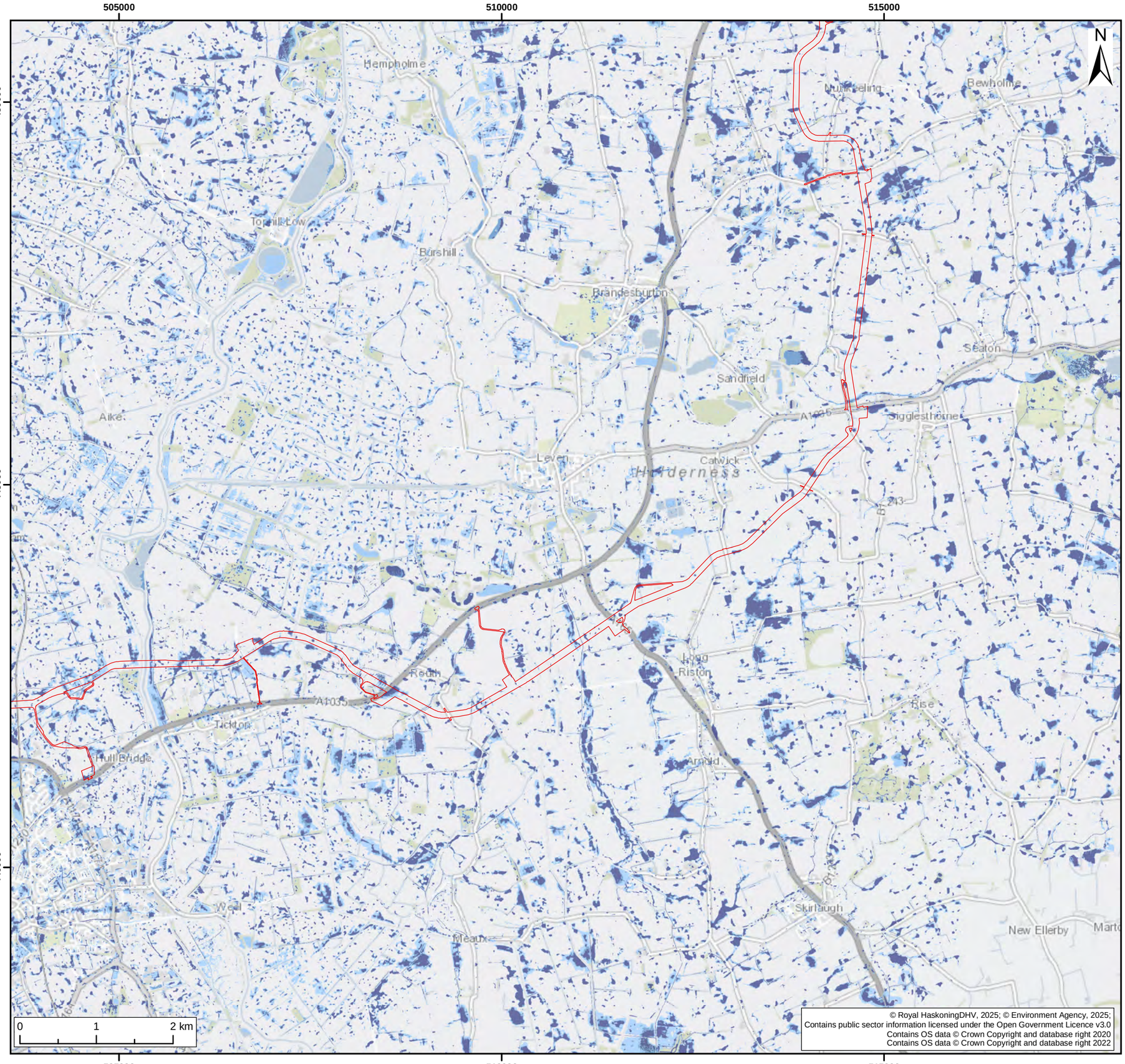

Legend

Onshore Development Area

Flood Likelihood Category

- High chance
  - More than 3.3% chance each year
- Medium chance
  - Between 1% and 3.3% chance each year
- Low chance
  - Between 0.1% & 1% chance each year

S2	P01	02/04/2025	Suitable for Information	SM	ND	HW
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Environment Agency Risk of Flooding
Surface Water Climate Change

Figure: 6

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1021

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:50,000

Project:

Dogger Bank South
Offshore Wind Farms

Report:

Climate
Change

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500000 505000 510000

445000 440000 435000

N

Etton Wold
Etton
North Newbald
Leconfield
Cherry Burton
Bishop Burton
Beverley
Molescroft
Hull Bridge
Tickton
Routh
Walkington
Bentley
Woodmansey
Thearne
Walkington
Dunswell
Kingswood
Grey Legs
Bransholme
Little Weighton
Skidby
Cottingham
New Village
Rowley
Eppleworth
Weel
Meaux

A1035 A1079 A164 A1174 B1230 B1233

0 1 2 km

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Legend

Onshore Development Area

Flood Likelihood Category

High chance
More than 3.3% chance each year

Medium chance
Between 1% and 3.3% chance each year

Low chance
Between 0.1% & 1% chance each year

S2	P01	02/04/2025	Suitable for Information	SM	ND	HW
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Environment Agency Risk of Flooding
Surface Water Climate Change

Figure: 6

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1021

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:50,000

Project:

Dogger Bank South
Offshore Wind Farms

Report:

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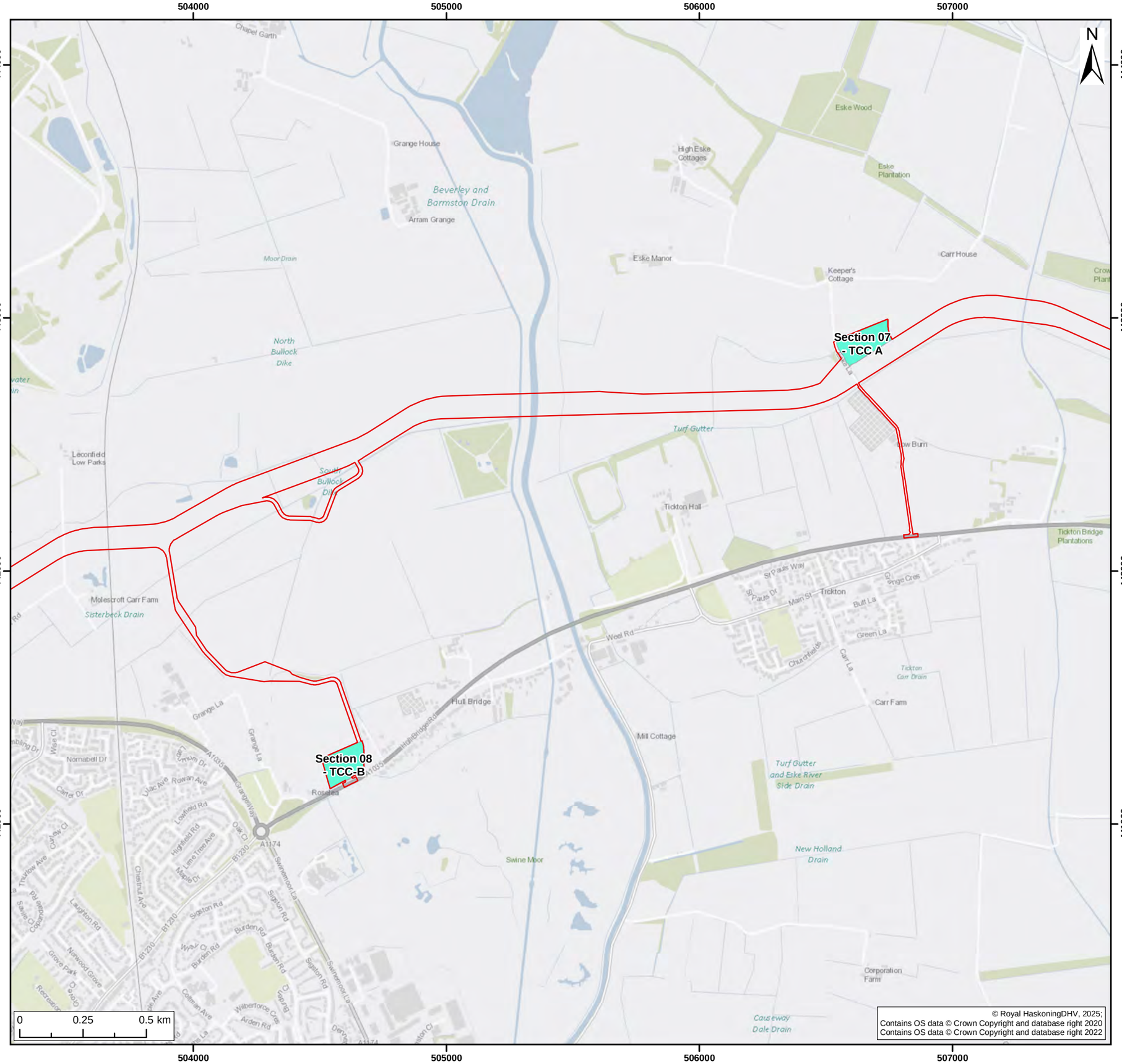

Legend:

- Onshore Development Area
- Indicative Temporary Construction Compound Zones

S2	P01	21/05/2025	Suitable for Information	SM	LA	HW
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Location of Indicative Temporary Construction Compound Zones

Figure: 7

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1073

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:15,000

Project: Dogger Bank South Offshore Wind Farms

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504000 505000 506000 507000

444000 443000 442000 441000

N

Section 07 - TCC A

Section 08 - TCC-B

0 0.25 0.5 km

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Legend:

- Onshore Development Area
- Indicative Temporary Construction Compound Zones
- Flood Zone 2
- Flood Zone 3

Note:
All areas not shown as being located in either flood zone 2 or 3 are classed as flood zone 1 (when considering fluvial and tidal flood risk)

S2	P01	21/05/2025	Suitable for Information	SM	LA	HW
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Environment Agency Flood Map for Planning (Updated 2025)

Figure: 8

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1074

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:15,000

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Report: Flood Risk and Coastal Change Technical Note

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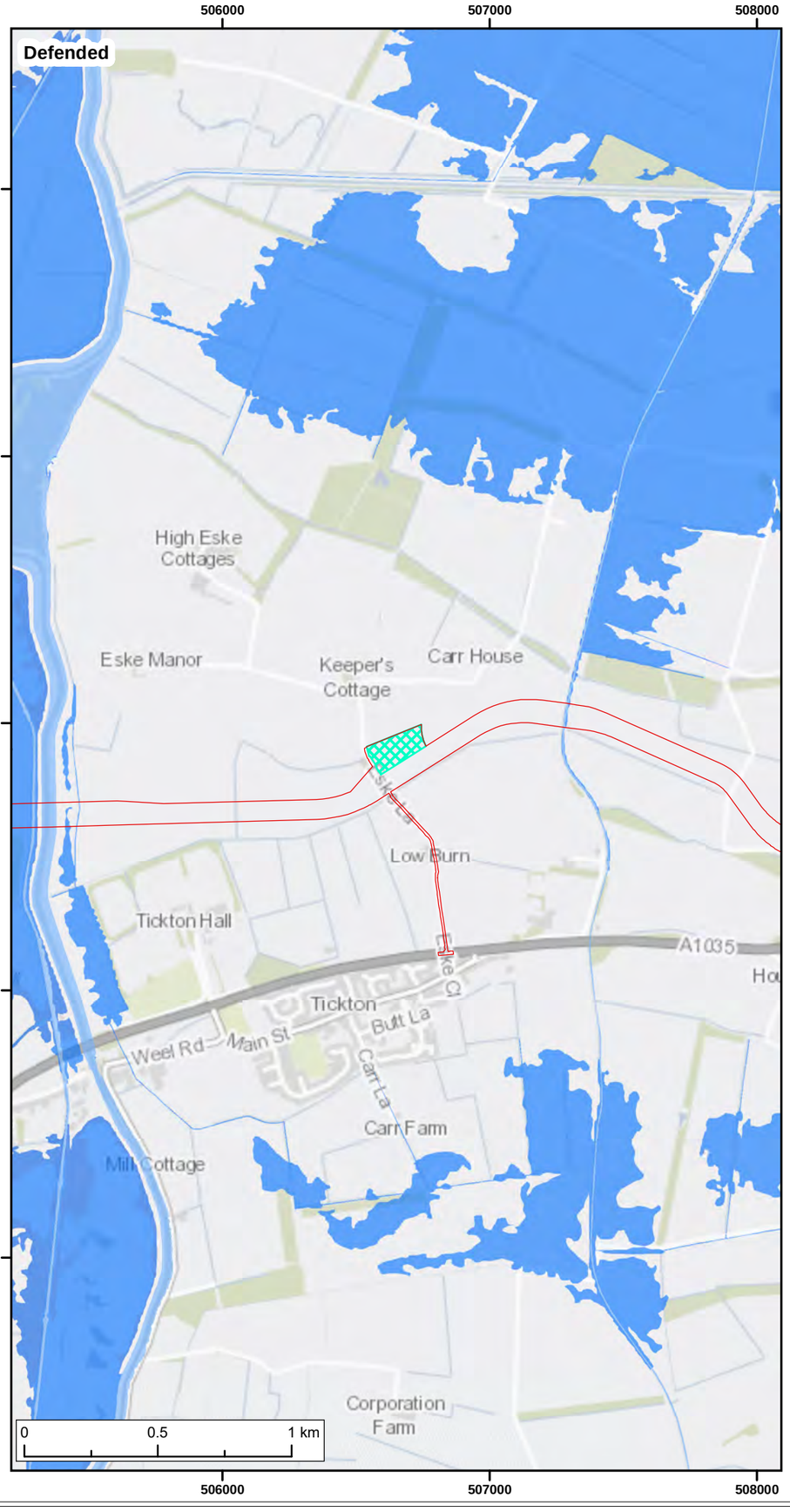

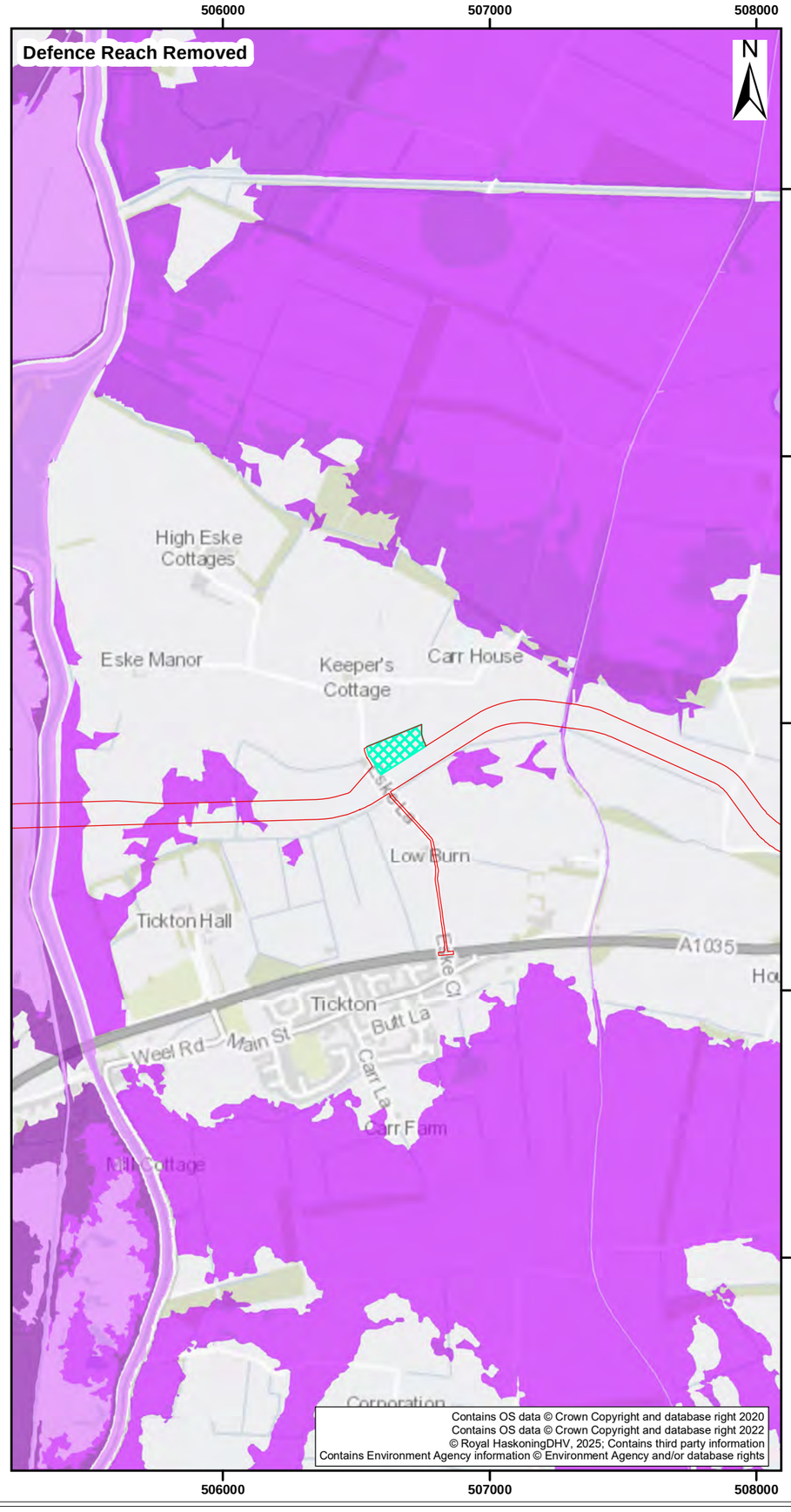

Legend

- Onshore Development Area
- Indicative Temporary Construction Compound Zones

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S3	P02	22/05/2025	Suitable for review & comment	SM	LA	HW
S2	P01	21/05/2025	Suitable for Information	SM	LA	HW

Title:

Extracts of modelled flood outlines for the 1 in 100 year event
Section 7 – TCC A

Figure:	Drawing No:
9	PC2340-RHD-ON-ZZ-DR-Z-1075

Co-ordinate system:	Page Size:	Scale:
British National Grid	A3	1:20,000

Project:	Report:
Dogger Bank South Offshore Wind Farms	Flood Risk and Coastal Change Technical Note

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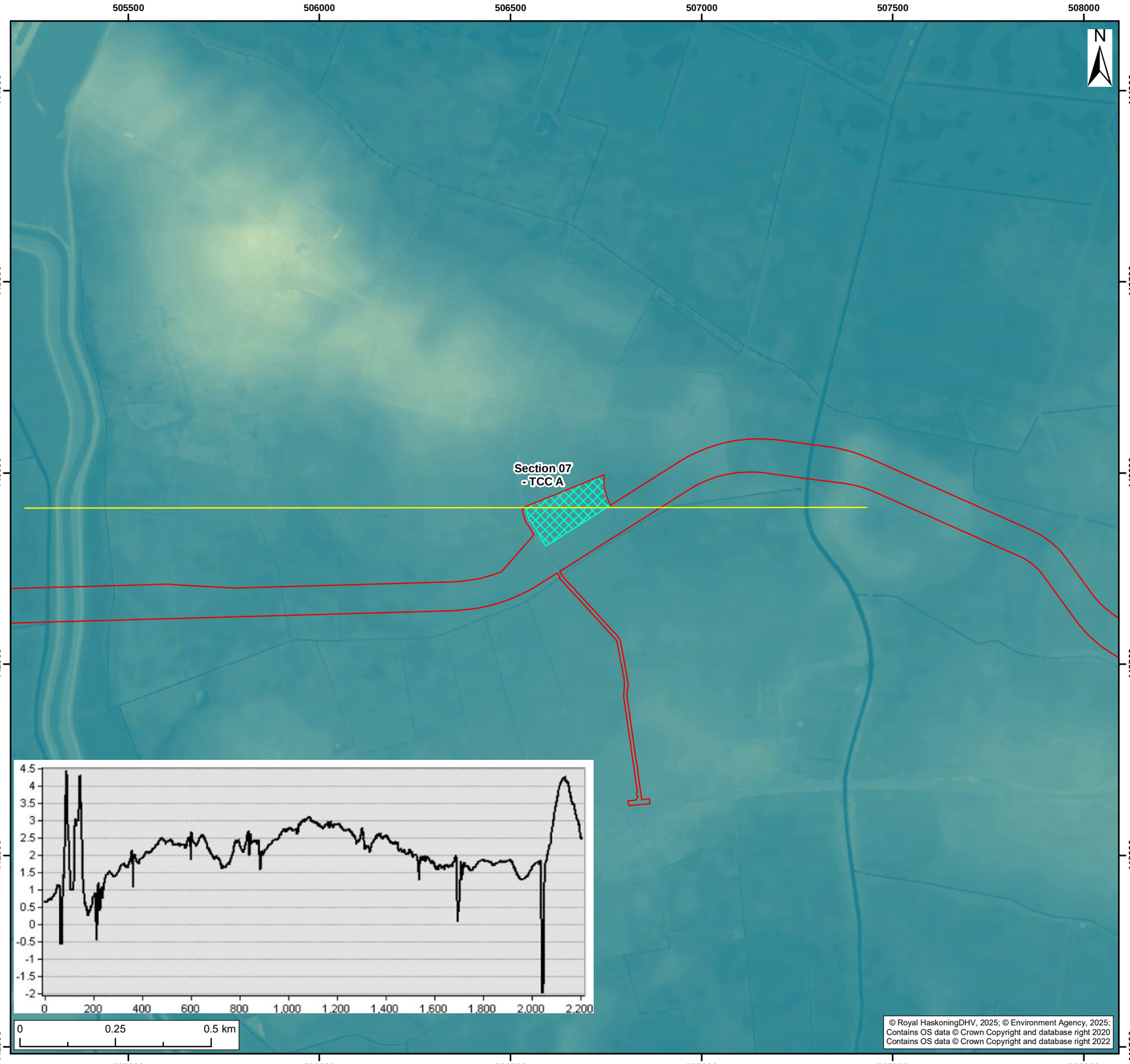

Legend:

- Onshore Development Area
- Indicative Temporary Construction Compound
- Section 7 Cross Section

LiDAR

- High : 43.9203
- Low : -2.87

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S3	P02	22/05/2025	Suitable for review & comment	SM	LA	HW
S2	P01	21/05/2025	Suitable for Information	SM	LA	HW

Title:

Lidar and Cross Section of Section 7 – TCC A

Figure: 10

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1077

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:10,000

Project:

Dogger Bank South Offshore Wind Farms

Report:

Flood Risk and Coastal Change Technical Note

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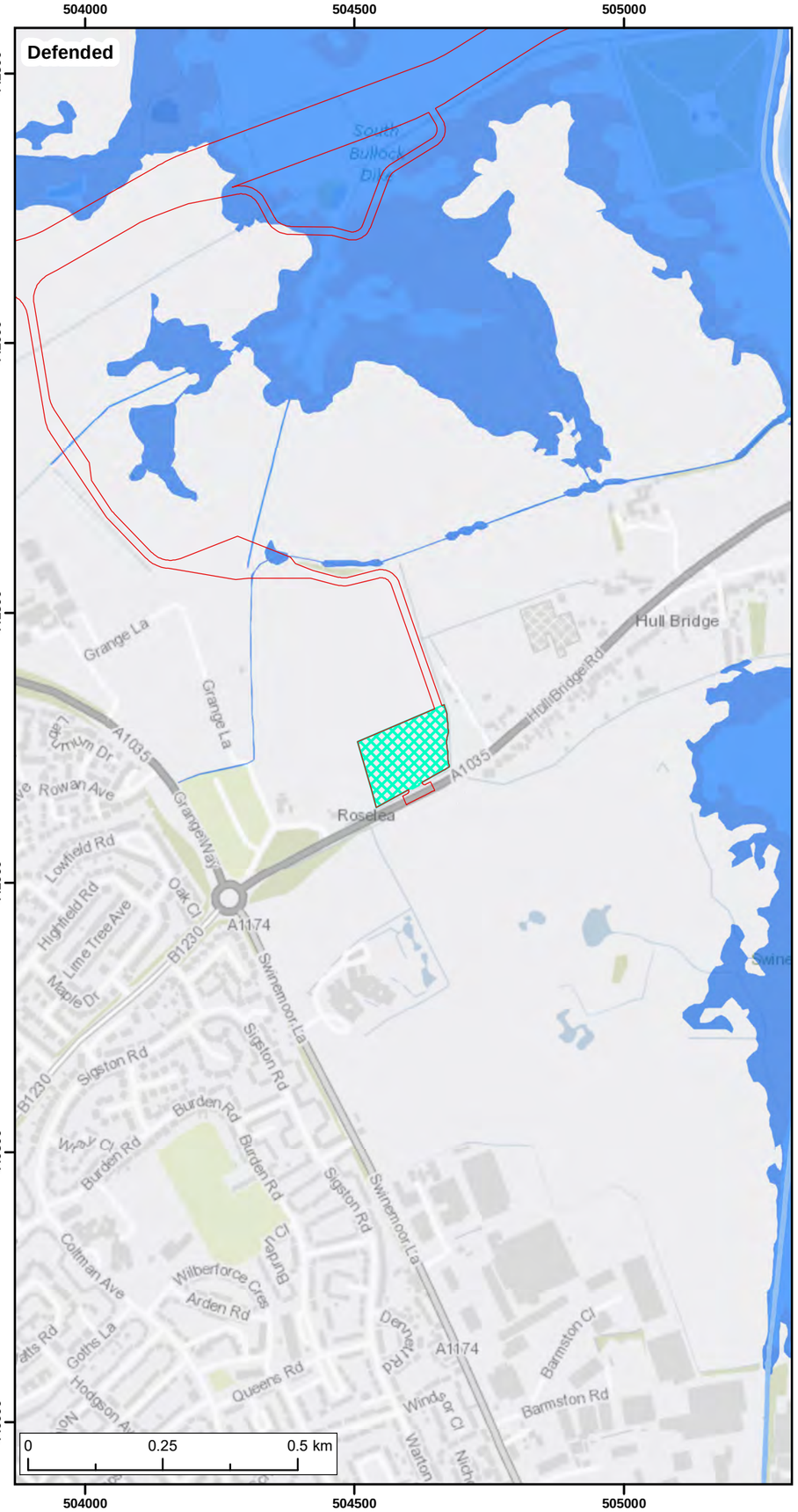

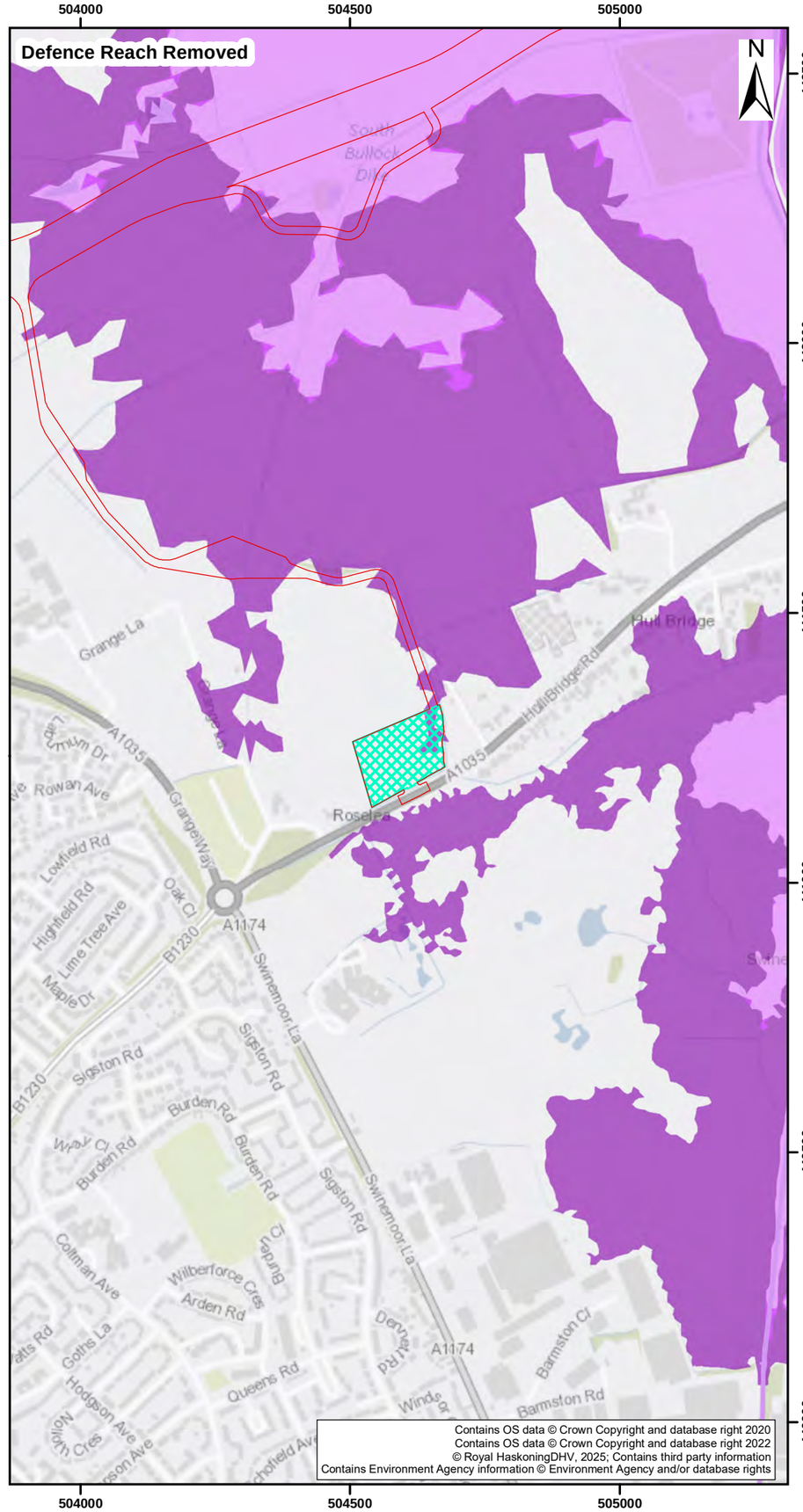

Legend

- Onshore Development Area
- Indicative Temporary Construction Compound Zones

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S3	P02	22/05/2025	Suitable for review & comment	SM	LA	HW
S2	P01	21/05/2025	Suitable for Information	SM	LA	HW

Title:

Extracts of modelled flood outlines for the 1 in 100 year event
Section 8 – TCC B

Figure: 11	Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1076	
Co-ordinate system: British National Grid	Page Size: A3	Scale: 1:10,000
Project: Dogger Bank South Offshore Wind Farms	Report: Flood Risk and Coastal Change Technical Note	

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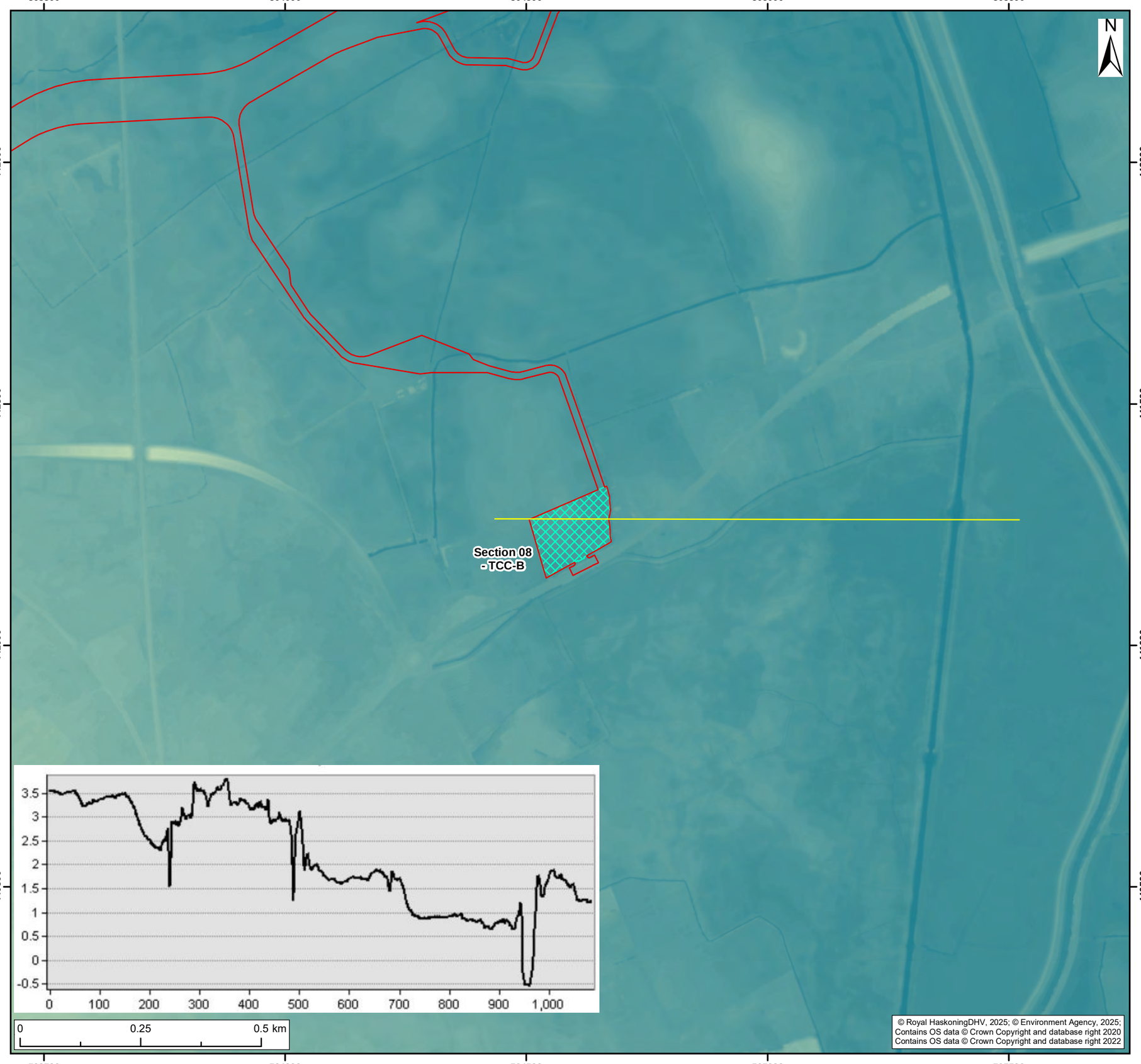

Legend:

- Onshore Development Area
- Indicative Temporary Construction Compound
- Section 8 Cross Section

LiDAR

- High : 43.9203
- Low : -2.87

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S3	P02	22/05/2025	Suitable for review & comment	SM	LA	HW
S2	P01	21/05/2025	Suitable for Information	SM	LA	HW

Title:

Lidar and Cross Section of Section 8 – TCC B

Figure: 12

Drawing No: PC2340-RHD-ON-ZZ-DR-Z-1078

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:8,000

Project: Dogger Bank South Offshore Wind Farms

Report: Flood Risk and Coastal Change Technical Note

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Enhancing Society Together

DBS Offshore Wind

RWE Renewables UK Dogger Bank
South (West) Limited

RWE Renewables UK Dogger Bank
South (East) Limited

Windmill Business Park
Whitehill Way
Swindon
Wiltshire, SN5 6PB