Lime Down
Solar Park

Environmental Statement

Volume 3, Appendix 11-5: Flood Risk Assessment and Drainage Strategy – Lime Down C2 (Clean)

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Appendix 11-5: Flood Risk Assessment and Drainage Strategy – Lime Down C2

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Site Details

1.1.1 The aim of this section of the report is to outline key environmental information associated with the baseline environment of Lime Down C2.

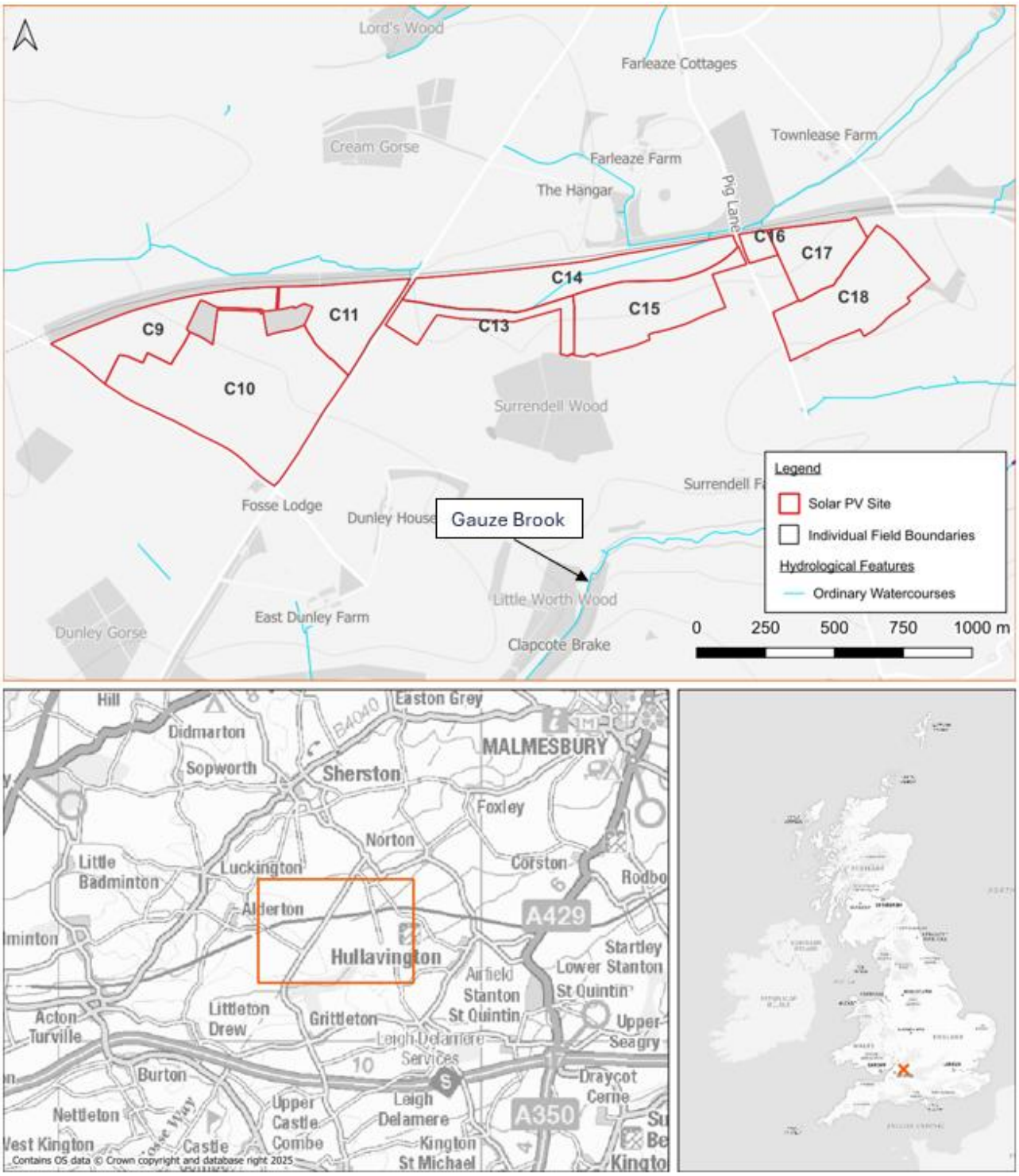


Figure 1: Site Location

1.2 Site Location

1.2.1 Lime Down C2 is located approximately 0.9km southeast of Alderton, a village in Wiltshire, and is situated about 2km north of the M4 motorway. The grid references are centred at 384980N,182570E (north-west), 385690N,182110E (south-west), 387810N,183030E (north-east), and 387586N,182560E (south-east).

1.3 Existing Site Conditions

1.3.1 Online mapping (including Google Maps / Google Streetview imagery[i] (accessed May 2025) shows that Lime Down C2 comprises agricultural / arable fields.

1.4 Topography

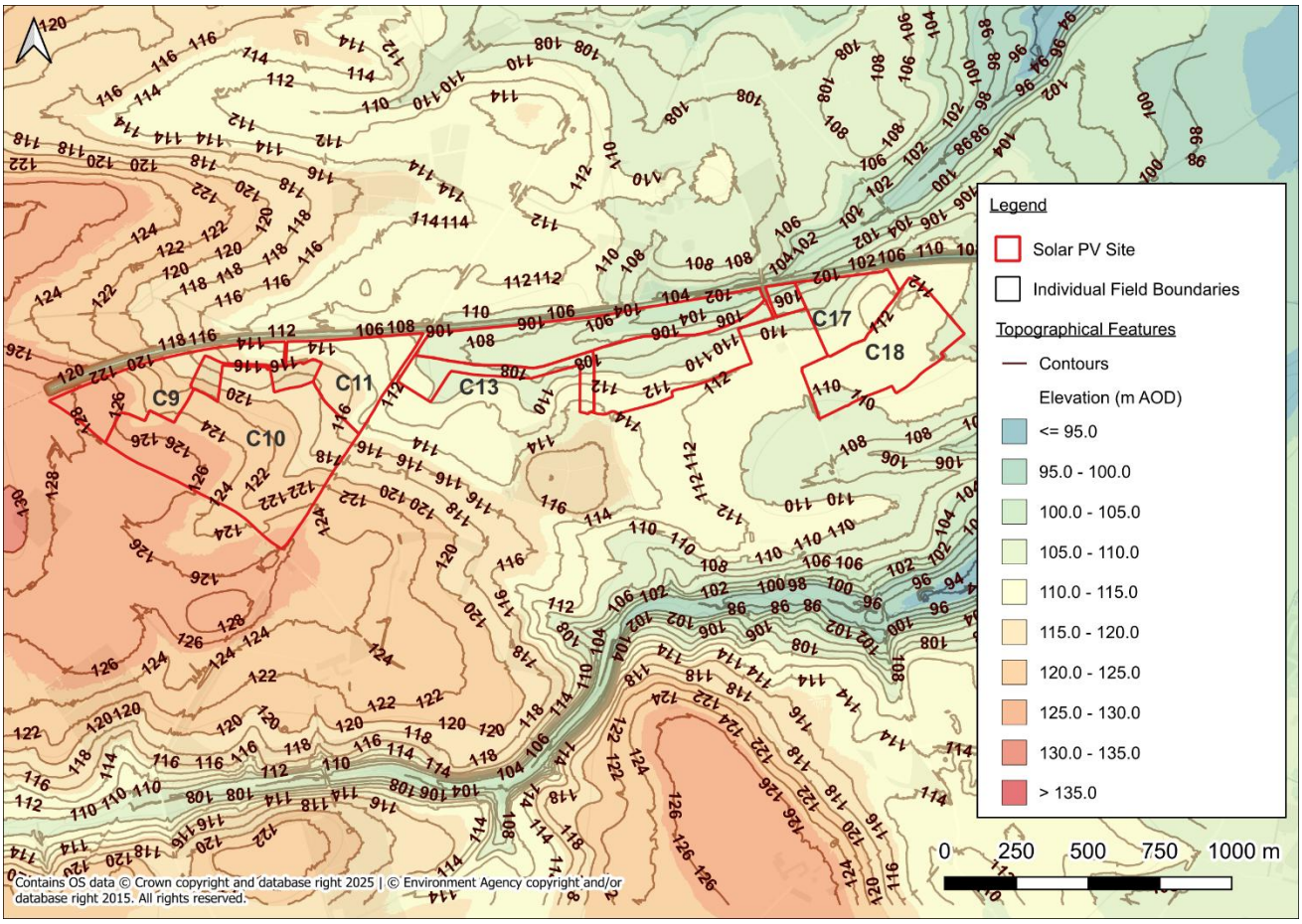


Figure 2: LiDAR Plan

1.4.1 Topographic levels to metres Above Ordnance Datum (m AOD) have been derived from a 1m resolution Environment Agency (EA) composite 'Light Detecting and Ranging' (LiDAR) Digital Terrain Model (DTM). A review of LiDAR ground elevation data shows that Lime Down C2 slopes from approximately 128m AOD in the west to approximately 102m AOD in the north-east (Figure 2).

1.5 Hydrology

1.5.1 The nearest main river is the Gauze Brook, located approximately 800m south of Lime Down C2, flowing

in a south-easterly direction. However, there are various unnamed land drainage ditches located on-Site and in the immediate vicinity (within 200m from the Site) that have been identified via Google Earth and OS MasterMap data.

1.5.2 Main rivers are under the jurisdiction of the EA, while all land drainage ditches are classified as ordinary watercourses and fall within the jurisdiction of the Wiltshire Lead Local Flood Authority (LLFA).

1.6 Water Framework Directive Status

1.6.1 Lime Down C2 is located within the Avon Bristol Rural Operational Catchment, largely within the Tributary – Source to Conf Sherston Avon Water Body Catchment and partially within the Gauze Brook – Source to Conf River Avon Water Body Catchment.

1.6.2 The Tributary – Source to Conf Sherston Avon Water Body catchment has a Cycle 3 Ecological status of Good in 2019 and 2022 and a Fail chemical status in 2019 (no data in 2022).

1.6.3 The Gauze Brook – Source to Conf River Avon Water Body catchment has a Cycle 3 Ecological status of Moderate in 2019 and 2022 and a Fail chemical status in 2019 (no data in 2022).

1.6.4 A summary of the Water Body Classifications for the catchments are included as Annex A.

1.7 Geology

1.7.1 Reference to the British Geological Survey (BGS) online mapping[ii] (1:50,000 scale) indicates that Lime Down C2 is underlain by the superficial deposits Head which comprises Clay, Silt, Sand and Gravel (see **Figure 3** for the locations of the varying deposits).

1.7.2 There are also areas on the Lime Down C2 identified as not being underlain by any superficial deposits.

1.7.3 Lime Down C2 is identified as being underlain by the following bedrock deposits (see **Figure 4** for the locations of the varying deposits):

- Chalfield Oolite Formation comprising Limestone & Oodial; and
- Forest Marble Limestone (Limestone & Oodial).

1.7.4 The geological mapping is available at a scale of 1:50,000 and as such may not be accurate on a Site-specific basis.

1.7.5 There are no BGS boreholes located at Lime Down C2.

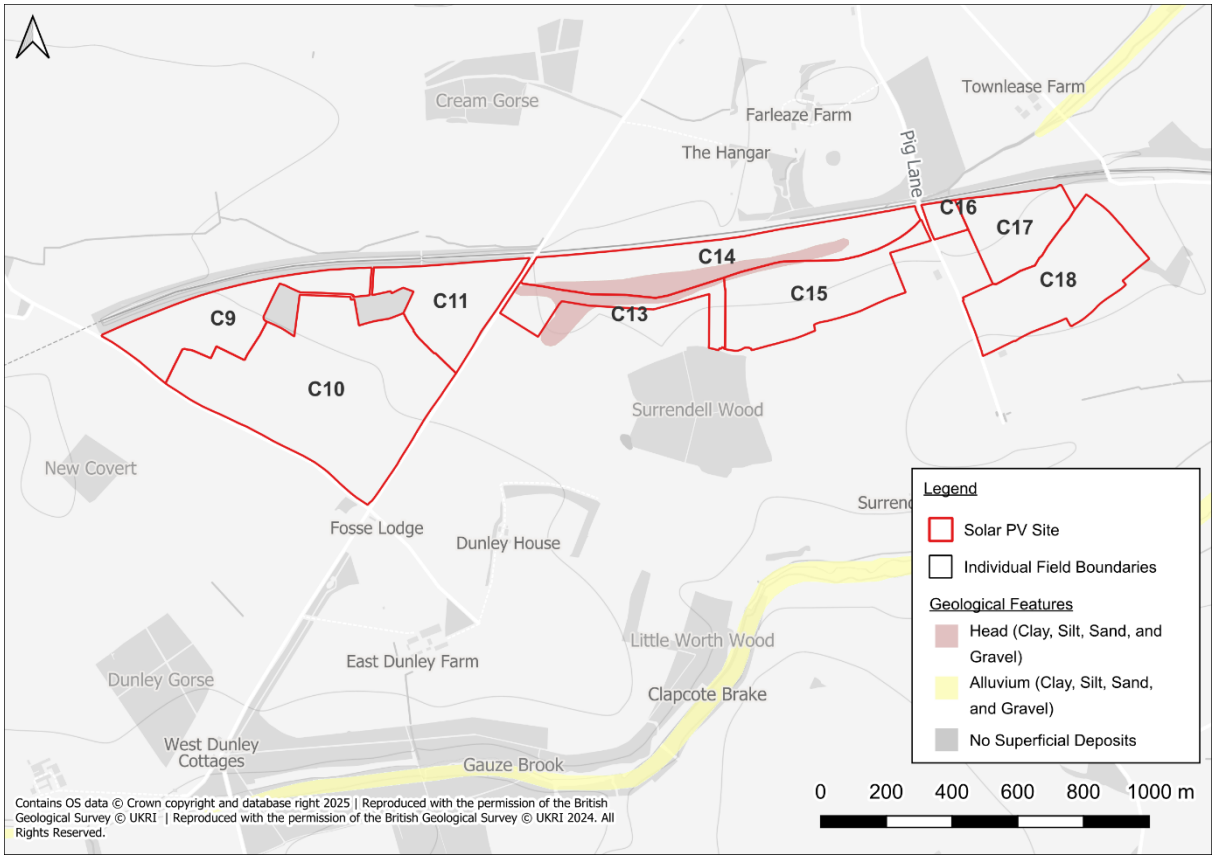


Figure 3: Superficial Deposits

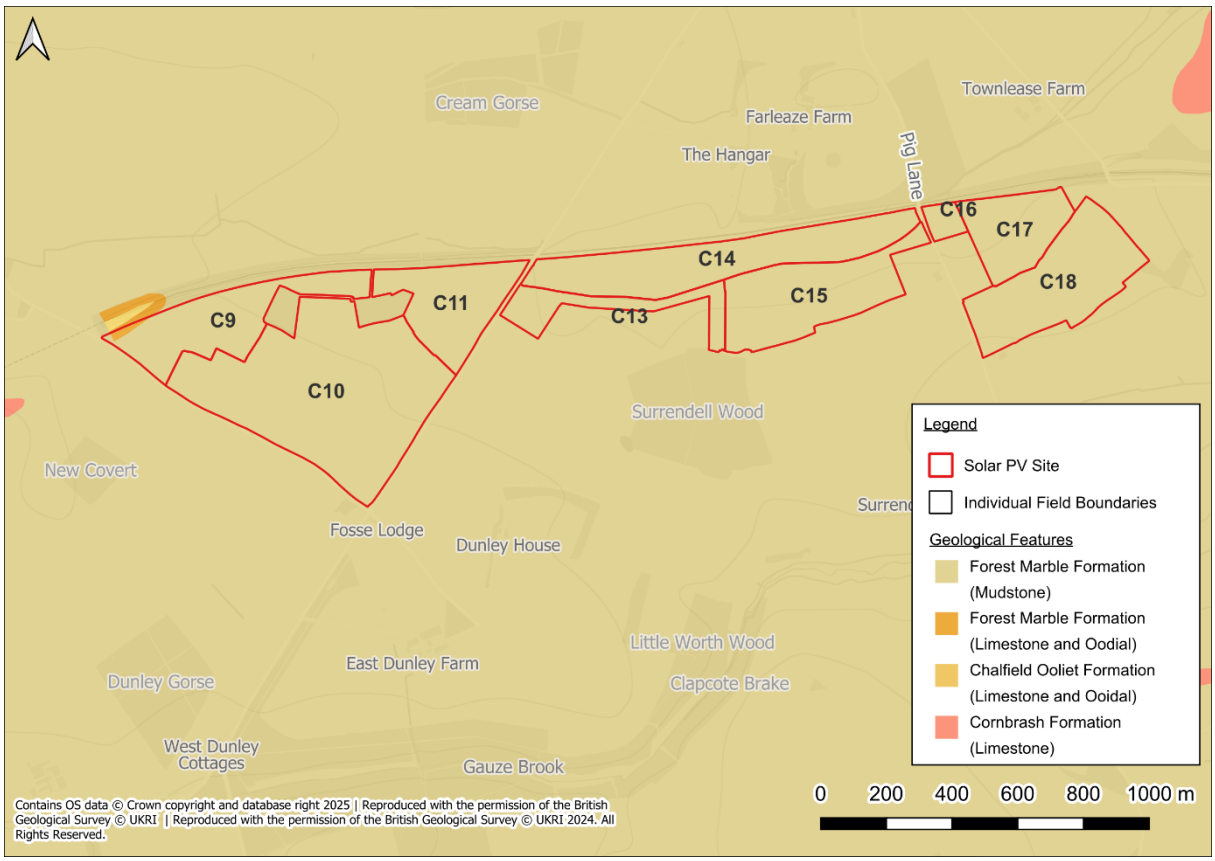


Figure 4: Bedrock Deposits

1.8 Hydrogeology

1.8.1 According to the EA Aquifer Designation data, obtained from MAGIC Map's online mapping[iii] [accessed 02/06/25], the Head Deposits are classified as a Secondary A Aquifer.

1.8.2 The underlying Forest Marble Formation is described as a Secondary A Aquifer.

1.8.3 The EA 'Source Protection Zones' data, obtained from MAGIC Map's online mapping [accessed 02/06/25], indicates that Lime Down C2 is located within a Groundwater Source Protection Zone.

1.9 Proposed Site Conditions

1.9.1 Lime Down C2 proposes a ground mounted Solar PV Panels , associated infrastructure and access. See Chapter 3: Scheme Description of the ES.

1.9.2 An **Outline Landscape and Ecological Management Plan (LEMP) [EN010168/APP/7.18]** has been developed to support the DCO application, and details that the vast majority of the Site is proposed to be utilised for Solar PV Panels, supporting infrastructure, internal access and peripheral areas will comprise landscaped buffers in line with the embedded mitigation described throughout the ES.

2. Assessment of Flood Risk

2.1.1 The aim of this Section of the report is to assess and summarise the existing flood risk at Lime Down C2.

2.2 Tidal Flood Risk

2.2.1 Lime Down C2 is situated at a minimum of approximately 102m AOD and is significantly above sea level. Therefore, there is **Negligible** risk from tidal flooding.

2.3 Fluvial Flood Risk

2.3.1 According to the EA's Flood Map for Planning (updated in March 2025)[iv], Lime Down C2 is situated wholly in Flood Zone 1, meaning it is an area considered to have <0.1% annual probability of flooding from rivers or the sea. Flood maps are included as Figure 5 below and **ES Volume 2, Figure 11-4: Lime Down C2 Fluvial and Surface Water Risk Map [EN010168/EXAM/6.2] (Rev 2)** produced at Deadline 3 of Examination

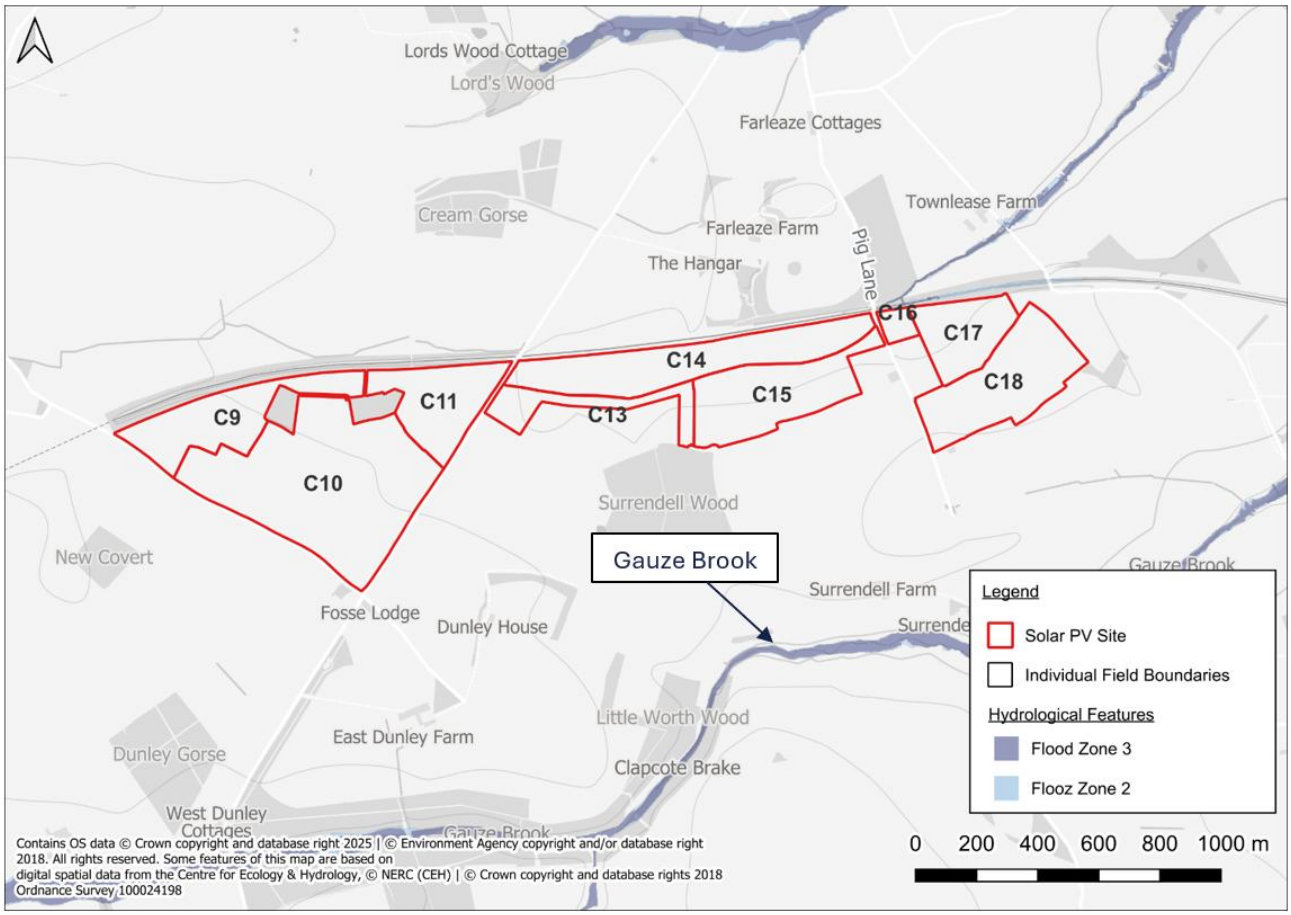


Figure 5: EA's Flood Map for Planning

2.3.2 The nearest watercourse is a network of unnamed land drainage ditches located within the immediate vicinity, within 200m of Lime Down C2. The land drainage ditches flow in an easterly direction. All the

land drainage ditches are Ordinary Watercourses and are within the jurisdiction of the Wiltshire Lead Local Flood Authority. Additionally, the nearest main river, the Gauze Brook, is located approximately 800m south of Lime Down C2 and, due to this distance, does not pose a risk to the Site.

2.3.3 Fluvial flooding could occur if the land drainage ditches overtopped their banks during or following an extreme rainfall event.

2.3.4 The EA 'Historical Flood Map' indicates that there are no recorded incidents of historical flooding on-Site or within the immediate vicinity; however, this does not imply that Lime Down C2 has never flooded in the past, but rather that there are no documented records of such events, likely due to the Lime Down C2's rural setting.

2.3.5 There is no Site-specific information within third party reports relating to fluvial flood risk.

2.3.6 To estimate flood levels for a 1% Annual Exceedance Probability (AEP) event with a 71% climate change allowance[v], Manning's open channel flow formula was applied. A detailed explanation of the calculation, including sources of data and the chosen coefficients, is provided in Annex B. This method was selected as it provides a practical estimate of flow characteristics based on channel shape, roughness, and gradient, particularly where detailed hydraulic modelling has not been undertaken. Cross-sectional data from EA LiDAR, captured in Q1 2020 and detailed in Annex B, informed the calculations.

2.3.7 The estimated flood levels suggest limited extents, expected to be smaller than those shown on the EA's 0.1% surface water mapping. This mapping is referenced for context only and was not used as an input to the calculation. It should also be noted that the surface water mapping does not reflect the location of the land drainage ditches within the site, and instead follows topographic low points and drainage paths identified from the LIDAR, the calculations were therefore taken based on these pathways shown on the LIDAR dataset. The estimated flood extents derived from the Manning's assessment are anticipated to be more limited in extent than those indicated by the EA's 0.1% AEP surface water mapping. The EA mapping has therefore been used as a precautionary indication of potential exceedance flow routes and extents only, with the 1% AEP plus climate change Manning's assessment adopted as the basis for the design event assessment.

2.3.8 It is further noted that the NaFRA2 mapping was released in January 2025 which supersedes the EA's previous flood risk mapping. The revised mapping shows a reduction in surface water flood extents across the Site. This supports the view that the current Manning's calculation remains conservative, and there is no requirement to update it.

2.3.9 Based on the analysis, the surface water flood maps offer a suitable and conservative basis for assessing fluvial flood risk at Lime Down C2. A more detailed exploration of surface water flood risks can be found in Section 2.4.

Consultation

2.3.10 The EA were consulted in October 2024 for any Site-specific flood data and modelling; a response was received on the 13/11/24 and is included as Annex C. Product 4 data received for the area has been

produced using the EA's National Generalised Model- JFLOW. This modelling is fit for the purpose of the Flood Zones; However, it is not based on a specific channel survey. The basic JFLOW water depths for the 1% Annual Exceedance Probability event and the 0.1% Annual Exceedance Probability Event are also included in Annex C. The mapping indicates that at Lime Down C2, flood depths remain consistent, as the area lies entirely within Flood Zone 1.

2.3.11 Consultation has been undertaken throughout the EIA process with the EA and Wiltshire Council. Comments and recommendations received have been noted and applied throughout this Flood Risk Assessment and Drainage Strategy. A record of consultation and The Applicant's responses are included in ES Chapter 11: Hydrology, Flood Risk and Drainage.

2.3.12 Lime Down C2 is not located within an Internal Drainage Board (IDB).

Summary

2.3.13 Lime Down C2 is therefore considered to be at **Low** risk of fluvial flooding.

2.4 Surface Water Flood Risk

2.4.1 The Environment Agency's National Flood Risk Assessment (NaFRA) mapping, known as the Long-Term Flood Risk Map (Surface Water), was updated in January 2025. This provides the most up-to-date indication of surface water flood risk across the Site, although at the time of writing, the NaFRA mapping only projects climate change scenarios to the year 2060.

2.4.2 The mapping shows that the majority of Lime Down C2 is at **Very Low risk** of surface water flooding, with an annual probability of less than 0.1%. However, several localised areas of **Low to High risk** (0.1% to greater than 3.3% annual chance) are present, particularly within Fields C9 to C11 and Fields C13, C14, and C18. These areas of predicted flooding largely coincide with the courses of existing unnamed land drainage ditches that flow within and around the site (**see Figure 6**).

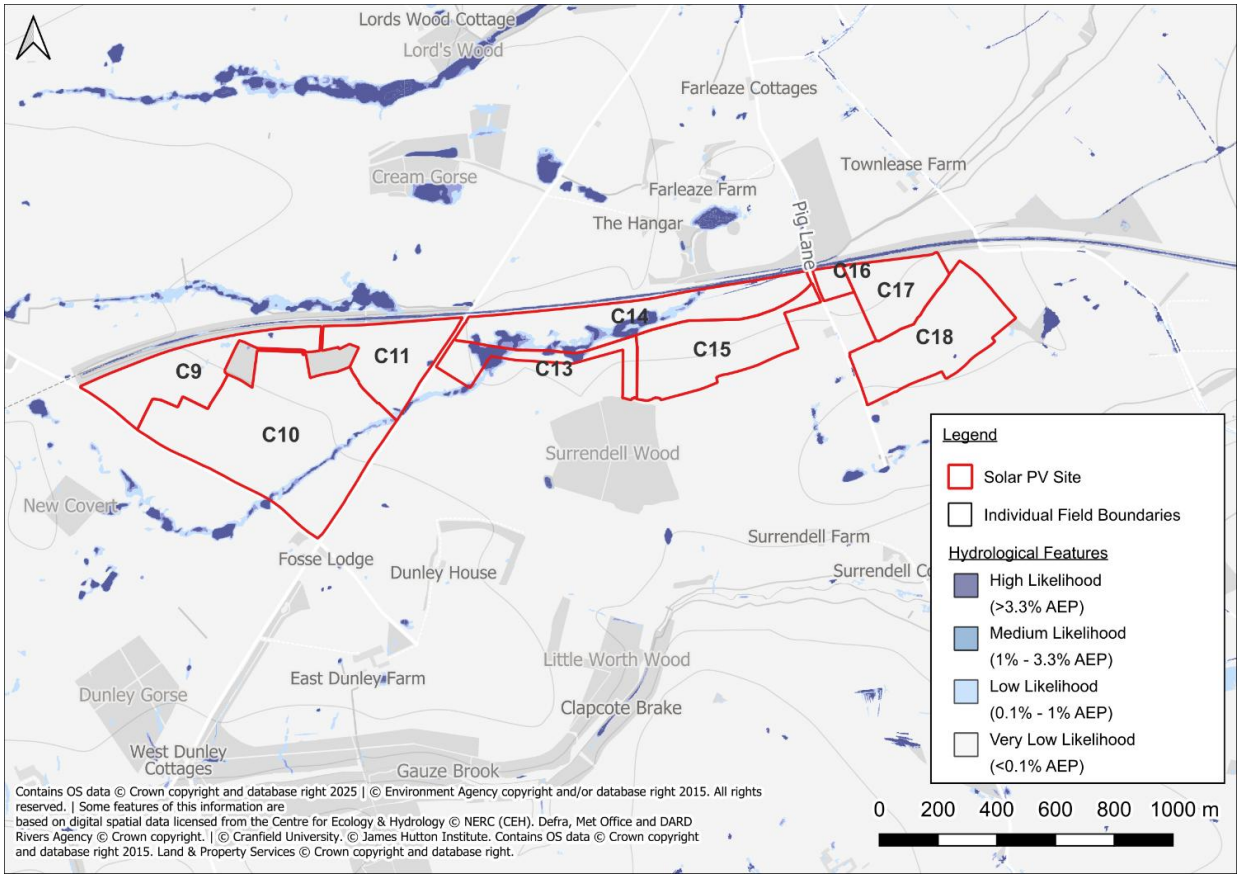


Figure 6 EA's Long-Term Flood Risk Map (Flood Risk from Surface Water)

2.4.3 Depth mapping derived from NaFRA indicates that predicted flood depths are generally low, remaining predominantly below 300mm, which is considered passable for pedestrians and vehicles. In Fields C13 and C14, some isolated locations are shown with depths between 300mm and 600mm. One small area of ponding in Field C14 is predicted to exceed 600mm. Elsewhere, depths are not anticipated to exceed this threshold.

2.4.4 There is no evidence from relevant third-party reports (listed in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3]**) to indicate that Lime Down C2 has historically experienced surface water flooding.

2.4.5 Taking into account these findings and the embedded mitigation proposed as part of the development design, the overall risk of surface water flooding is considered to be Low. The proposed solar panels will be raised above surrounding ground levels and will be appropriately waterproofed, thereby reducing the potential to be impacted in the event of surface water flooding.

2.4.6 Associated electrical infrastructure, such as inverters, transformers, cabling and substations, will be located outside mapped flood extents where feasible, or otherwise elevated above the design flood level with appropriate freeboard, in line with the embedded mitigation strategy outlined in **Appendix 11.1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3]**.

2.4.7 Smaller electrical components such as conversion units, where present, are minor in scale and will be protected through elevation or localised resilience measures, consistent with the approach set out in

the Covering Report. The potential for the development to exacerbate surface water flood risk off-site is also addressed through the use of appropriate SuDS features, as described in the Covering Report.

2.4.8 The approach to managing surface water runoff is detailed in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3],** which confirms that appropriate Sustainable Drainage Systems (SuDS) will be implemented to ensure there is no increase in flood risk elsewhere.

2.5 Groundwater Flood Risk

2.5.1 The geology is identified above in Section 1.0. There were no legible boreholes in the near vicinity.

2.5.2 The Wiltshire Strategic Flood Risk Assessment (SFRA) map[vi] (listed 'Sources of Information' in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3]**) suggests that Lime Down C2 is located in an area of no risk to groundwater flooding, due to the nature of the local geological deposits.

2.5.3 No buildings and no basement levels are identified on plans which may otherwise be at increased risk from groundwater seepage.

2.5.4 It can be concluded that the risk of groundwater flooding is **Low;** therefore, no further Site-specific mitigation measures are required.

2.6 Sewer Flooding

2.6.1 No Site-specific incidents of sewer flooding have been identified from relevant third-party reports.

2.6.2 On the basis of Lime Down C2's rural setting, the presence of sewerage infrastructure is unlikely. Utility records have been checked, and no public sewers are identified within Lime Down C2.

2.6.3 It can therefore be concluded that the risk of sewer flooding is **Negligible**; therefore, no further Site-specific mitigation measures are required.

2.7 Reservoir and Canal Flooding

2.7.1 There are no canals within the vicinity of Lime Down C2, therefore there is no associated risk.

2.7.2 The EA 'Flood Risk from Reservoirs' map shows that Lime Down C2 is not at risk of flooding from reservoirs.

2.7.3 It can therefore be concluded that there is **Negligible** risk of flooding from artificial sources.

2.8 Residual Flood Risks

2.8.1 A residual risk is an exceedance event, such as the 1 in 1000 year (0.1% AEP) flood event that would overtop the land drainage ditches and potentially impact Lime Down C2. As the probability of a 1 in 1000 year flood event occurring is 0.1% in any given year, the probability is low and, therefore, no additional mitigation beyond the embedded mitigation measures of the Scheme is required.

2.8.2 In the event of the defences failing or an exceedance event occurring, the residual risk to people working or present in the vicinity; as construction workers, residents, or Public Right of Way (PRoW) users, within Lime Down C2 can be managed through the implementation of an appropriate Site management plan. This plan will recognise the residual risks and outline the actions to be taken by staff in the event of a flood to ensure that occupants are placed in a place of safety.

2.9 Summary of Flood Risk

2.9.1 It can be concluded that the risk to Lime Down C2 from all sources of flooding is **Negligible** to **Low**, however, it would be prudent to include the below mitigation measures.

2.10 Embedded Mitigation

2.10.1 Embedded Mitigation is detailed in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3].**

2.10.2 During the construction phase, temporary works and construction activities will be managed to maintain existing floodplain storage, floodplain capacity and overland flood flow routes. Temporary compounds, plant and material storage will be located outside areas identified as potentially susceptible to flooding where reasonably practicable, and construction activities will be undertaken in accordance with the **Outline CEMP [REP2-019]** to ensure flood risk is not increased elsewhere.

2.11 Impact on off-Site Flood Risk

2.11.1 The Solar PV Panels and associated electrical infrastructure, including inverters, transformers, cabling, and substations, will, where possible, be located outside the flood extent. If this is not feasible, they will be elevated with appropriate freeboard above the local flood level. These components will be installed on concrete foundations or pads mounted on frames, allowing floodwater to flow freely underneath. This approach prevents any loss of floodplain volume and ensures there is no increase in flood risk elsewhere - areas where panels are proposed in Flood Zones 2 / 3 have undergone the appropriate floodplain storage calculations – see **ES Volume 3, Appendix 11-6 and 11-8 [EN010168/APP/6.3]**. The components are insignificant in size with detailed dimensions provided in ES Chapter 3: Scheme Description. Additionally, any units incorporating hardstanding will feature SuDS measures to mitigate any increase in surface water runoff. Together, these measures ensure the Scheme does not contribute to an increase in flood risk.

2.11.2 Surface water management has been considered in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3].**

3. Conclusions and Recommendations

3.1 Conclusions

3.1.1 Lime Down C2 would comprise ground mounted Solar PV Panels and associated Scheme and access roads.

Flood Risk

3.1.2 Lime Down C2 is situated wholly in Flood Zone 1, meaning it is an area considered to have <0.1% annual probability of flooding from rivers or the sea.

3.1.3 The majority of Lime Down C2 is at Very Low risk of surface water flooding. However, several localised areas of **Low to High risk** are present, particularly within Fields C9 to C11 and Fields C13, C14, and C18. These areas of predicted flooding largely coincide with the courses of existing unnamed land drainage ditches that flow within and around the site

3.1.4 The risk of flooding from all sources has been assessed and the flood risk is considered to be **Negligible to Low** and therefore does not require Site-specific mitigation measures.

3.1.5 The Solar PV Panels and other electrical infrastructure, including inverters, transformers, cabling and substations, which is to be sat on a concrete foundation/pad that will be mounted on frames and raised above ground level allowing flood water to flow freely underneath.

3.2 Recommendations

3.2.1 Embedded Mitigation is detailed in **Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3]**, in which this FRA has informed.

Annexes

Annex A- Water Body Catchment Classifications Summaries

Gauze Brook – Source to Conf River Avon Water Body Catchment Classification Summary

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	High	High	Good	Good	2015	
Invertebrates	High	High	High	Good	2015	
Macrophytes and Phytobenthos Combined	High	High	Good	Good	2015	
Macrophytes sub element	High	High	Good	Good		
Physio-Chemical Quality Elements	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Acid Neutralising Capacity						
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	Poor	Poor	Poor	Good	2015	
Phosphate	Poor	Poor	Poor	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Temperature	High	High	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2015	
Hydrological Regime	Does not support good	Does not support good	Supports Good	Does not support good		Disproportionately expensive: Unfavourable balance of costs and benefits
Morphology	Supports Good	Supports Good	Supports Good			
Supporting Elements (surface Water)				N/A	2015	
Specific Pollutants				N/A	2015	
Copper						
Triclosan						
Zinc						
Iron						
Maganese						
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Benzo(a)pyrene	Good	Good		Good	2015	
Cadium and Its Compounds						
Dioxins and dioxin-like compounds	Good	Good		Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good		Good	2015	
Hexabromocyclododecane	Good	Good		Good	2015	
Hexachlorobenzene	Good	Good		Good	2015	
Hexachlorobutadiene	Good	Good		Good	2015	
Mercury and Its Compounds	Fail	Fail		Good	2040	Natural conditions: Chemical status recovery time
Nonylphenol						
Perfluorooctane sulphonate (PFOS)	Good	Good		Good	2015	
Polybrominated diphenyl ethers (PBDE)	Fail	Fail		Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Lead and Its Compunds						
Nickel and Its Compunds						
Other Pollutants	N/A	N/A	N/A	N/A	2015	Did not require assessment

Tributary (source to conf River Sherston Avon) Catchment Classification Summary

Classification Item	2019 Classification		2022 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Good	Good	Good	Good	2015	
Biological Quality Elements	Good	Good	Good	Good	2015	
Invertebrates	Good	Good	Good	Good	2015	
Macrophytes and Phytobenthos Combined	Good	Good	Good	Good	2015	
Physio-Chemical Quality Elements	Good	Good	Good	Good	2015	
Acid Neutralising Capacity	N/A	N/A	N/A	Good	2015	
Ammonia (Phys-Chem)	Good	Good	Good	Good	2015	
Dissolved Oxygen	High	High	High	Good	2015	
Phosphate	Good	Good	Good	Good	2015	
Temperature	High	High	High	Good	2015	
pH	High	High	High	Good	2015	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2015	
Supporting Elements (surface Water)	N/A	N/A	N/A	N/A	N/A	
Mitigation Measures Assessment	N/A	N/A	N/A	N/A	N/A	
Specific Pollutants	N/A	N/A	N/A	N/A	N/A	
Iron	N/A	N/A	N/A	N/A	N/A	
Maganese	N/A	N/A	N/A	N/A	N/A	
Chemical	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority Hazardous Substances	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Benzo(a)pyrene	Good	Good	N/A	Good	2015	
Dioxins and dioxin-like compounds	N/A	Good	N/A	Good	2015	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	N/A	Good	2015	
Hexabromocyclododecane	Good	Good	N/A	Good	2015	
Hexachlorobenzene	Good	Good	N/A	Good	2015	
Hexachlorobutadiene	Good	Good	N/A	Good	2015	
Mercury and Its Compounds	Fail	Fail	N/A	Good	2040	Natural conditions: Chemical status recovery time
Perfluorooctane sulphonate (PFOS)	Good	Good	N/A	Good	2015	
Polybrominated diphenyl ethers (PBDE)	Fail	Fail	N/A	Good	2063	Natural conditions: Chemical status recovery time
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good	N/A	Good	2015	
Fluoranthene	Good	Good	N/A	Good	2015	
Other Pollutants	N/A	N/A	N/A	N/A	2015	Did not require assessment

Annex B – Manning's Open Channel Flow Mapping

317212 Lime Down Solar C2

Manning's Open Channel Flow Calculation

Methodology

Cross-sections through the floodplain were extracted from Environment Agency (EA) LiDAR DTM data (flown March 2020) at the locations shown in Figure 1. These cross-sections can be considered representative of the channel and general floodplain adjacent to the site and at the location of the proposed development. The cross-sections were imported into Flood Modeller and the "tabulate cross section properties" tool was utilised to establish the level-flow relationship for the channel and wider floodplain. This tool utilises the Manning's open channel flow equation. Manning's 'n' roughness was set to 0.03s/$m^{1/3}$ for the channel and 0.04s/$m^{1/3}$ for the floodplain. These values were chosen based on Chow (1959)* and aerial imagery. The channel slope was set for each cross-section based on underlying LiDAR.

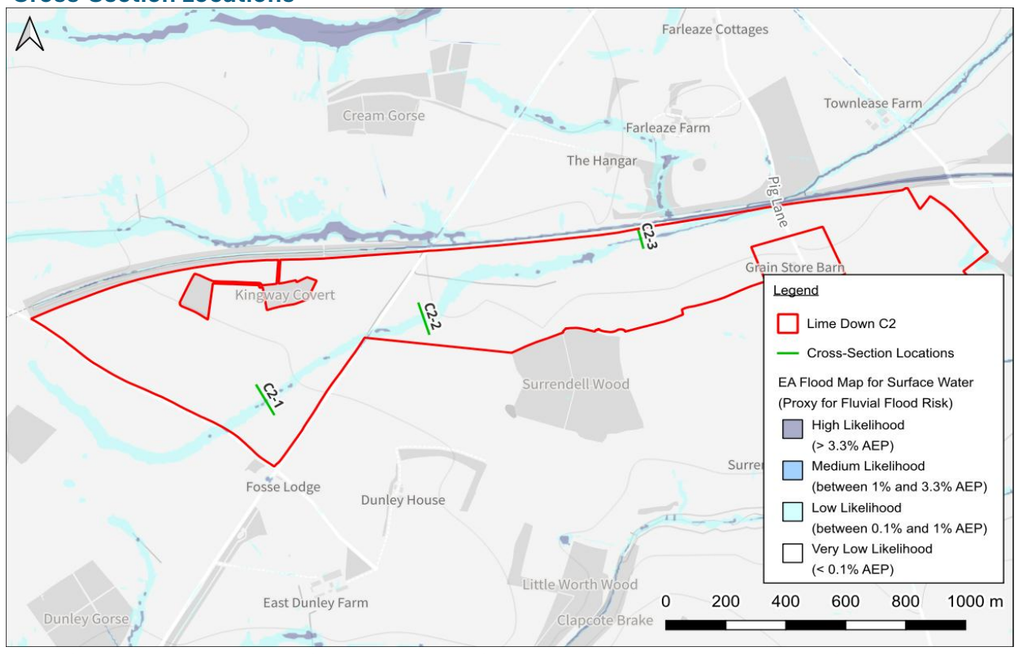
In the absence of detailed flood extent data covering the site, the extents of the EA surface water flood map (0.1% AEP event, present day) have been compared to underlying LiDAR data to provide an estimate of water levels. The surface water flood map has been used as a proxy for fluvial flooding given the similarity to the EA Flood Zone 2 extent and the additional detail it affords. The EA has since released the NaFRA2 mapping, however, a review of the flood extents indicates they are smaller across much of the study area. As such, the calculations presented here can be considered conservative.

Within this excel workbook, the xlookup function has been used along with the Flood Modeller level-flow relationship for the cross-sections to determine the equivalent flow for each estimated water level, rounding up where a direct match is not found. The appropriate climate change uplifts have then been applied to these flows and a second xlookup used to determine the equivalent level for the increased flow.

Cross-sections have been located at suitable locations throughtout the proposed development. Whilst it is acknowledged that the Manning's open channel flow equation used to determine the level-flow relationship does not constitute detailed hydraulic modelling, the calculation can still be considered suitable to demonstrate the scale of the changes in water level that can be expected when considering a +71% uplift in flows (Avon Bristol and North Somerset Streams Management Catchment, 2080's higher allowance).

**Chow, V.T. (1959). Open-Channel Hydraulics. New York, NY: McGraw-Hill.*

Cross-Section Locations



Calculated Flows and Levels

Cross-Section	Level Description	Estimated Flood Level (m AOD)	Estimated Equivalent Flow (m^3/s)	Flow +71% CC Uplift (m^3/s)	Equivalent Flood Level (m AOD)
C2-1	0.1% AEP EA FMfSW water level	104.16	1.4	2.4	104.22 (+60mm)
C2-2	0.1% AEP EA FMfSW water level	110.51	9.5	16.3	110.60 (+91mm)
C2-3	0.1% AEP EA FMfSW water level	120.91	7.1	12.1	121.02 (+107mm)

Tabulated Cross-Section Properties // C2-1

(Calculated by Flood Modeller)

Node	Flow (m^3/s)	Stage (m AOD)	Depth (m)	Velocity (m/s)	Froude no.	Area (m^2)	Conveyance (m^3/s)	Width (m)	W Perim. (m)	Slope
C2-1	0.000	103.918	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0067
C2-1	0.000	103.918	0.000	0.000	0.000	0.000	0.000	1.041	1.041	0.0067
C2-1	0.000	103.919	0.001	0.022	0.262	0.002	0.000	2.094	2.094	0.0067
C2-1	0.012	103.943	0.025	0.206	0.456	0.060	0.151	2.875	2.877	0.0067
C2-1	0.042	103.966	0.048	0.304	0.502	0.137	0.509	3.656	3.659	0.0067
C2-1	0.081	103.987	0.069	0.368	0.527	0.219	0.989	4.404	4.409	0.0067
C2-1	0.135	104.007	0.089	0.424	0.546	0.317	1.648	5.153	5.158	0.0067
C2-1	0.152	104.012	0.094	0.442	0.570	0.344	1.865	5.608	5.615	0.0067
C2-1	0.185	104.020	0.102	0.471	0.613	0.393	2.264	6.546	6.553	0.0067
C2-1	0.282	104.040	0.122	0.525	0.638	0.536	3.448	7.764	7.771	0.0067
C2-1	0.427	104.064	0.146	0.578	0.651	0.739	5.234	9.194	9.202	0.0067
C2-1	0.462	104.069	0.151	0.587	0.654	0.786	5.654	9.567	9.575	0.0067
C2-1	0.528	104.078	0.160	0.604	0.654	0.875	6.466	10.075	10.084	0.0067
C2-1	0.633	104.091	0.173	0.622	0.684	1.019	7.758	12.103	12.112	0.0067
C2-1	0.801	104.109	0.191	0.644	0.659	1.243	9.806	12.773	12.783	0.0067
C2-1	0.997	104.127	0.209	0.674	0.649	1.479	12.208	13.443	13.454	0.0067
C2-1	1.055	104.132	0.214	0.682	0.647	1.546	12.923	13.648	13.659	0.0067
C2-1	1.166	104.142	0.224	0.690	0.655	1.689	14.280	14.907	14.918	0.0067
C2-1	1.401	104.160	0.242	0.711	0.654	1.970	17.154	16.338	16.351	0.0067
C2-1	1.625	104.175	0.257	0.732	0.648	2.221	19.905	17.055	17.068	0.0067
C2-1	1.751	104.184	0.266	0.736	0.652	2.380	21.446	18.330	18.343	0.0067
C2-1	2.031	104.200	0.282	0.758	0.645	2.679	24.875	19.039	19.053	0.0067
C2-1	2.418	104.220	0.302	0.788	0.639	3.067	29.608	19.777	19.792	0.0067
C2-1	2.839	104.240	0.322	0.818	0.635	3.470	34.774	20.514	20.530	0.0067
C2-1	2.861	104.241	0.323	0.820	0.651	3.491	35.043	21.615	21.631	0.0067
C2-1	3.171	104.256	0.338	0.830	0.639	3.820	38.830	22.241	22.258	0.0067
C2-1	3.669	104.277	0.359	0.853	0.638	4.301	44.932	23.569	23.587	0.0067
C2-1	3.794	104.282	0.364	0.858	0.647	4.422	46.467	24.640	24.657	0.0067
C2-1	3.873	104.285	0.367	0.861	0.652	4.497	47.427	25.255	25.273	0.0067
C2-1	4.255	104.301	0.383	0.869	0.640	4.894	52.114	26.052	26.071	0.0067
C2-1	4.710	104.316	0.398	0.888	0.638	5.304	57.686	26.850	26.869	0.0067
C2-1	5.059	104.327	0.409	0.903	0.636	5.602	61.956	27.280	27.300	0.0067
C2-1	5.039	104.328	0.410	0.895	0.641	5.630	61.715	28.339	28.359	0.0067
C2-1	5.266	104.336	0.418	0.899	0.644	5.861	64.498	29.528	29.548	0.0067
C2-1	5.872	104.354	0.436	0.917	0.643	6.405	71.909	30.898	30.918	0.0067
C2-1	6.123	104.361	0.443	0.925	0.642	6.623	74.990	31.330	31.351	0.0067
C2-1	6.569	104.373	0.455	0.937	0.647	7.007	80.447	32.774	32.796	0.0067
C2-1	6.757	104.378	0.460	0.942	0.649	7.173	82.751	33.405	33.428	0.0067
C2-1	7.462	104.396	0.478	0.957	0.654	7.795	91.389	35.713	35.736	0.0067
C2-1	7.502	104.397	0.479	0.958	0.655	7.831	91.884	35.906	35.929	0.0067

Node	Flow (m^3/s)	Stage (m AOD)	Depth (m)	Velocity (m/s)	Froude no.	Area (m^2)	Conveyance (m^3/s)	Width (m)	W Perim. (m)	Slope
C2-1	7.666	104.401	0.483	0.961	0.659	7.976	93.883	36.781	36.805	0.0067
C2-1	7.919	104.407	0.489	0.966	0.664	8.200	96.987	38.039	38.063	0.0067
C2-1	8.312	104.416	0.498	0.972	0.665	8.548	101.797	39.223	39.248	0.0067
C2-1	8.551	104.421	0.503	0.978	0.663	8.745	104.730	39.485	39.510	0.0067
C2-1	8.993	104.430	0.512	0.987	0.671	9.108	110.143	41.274	41.300	0.0067
C2-1	10.228	104.455	0.537	1.007	0.658	10.155	125.266	42.454	42.481	0.0067
C2-1	11.091	104.470	0.552	1.027	0.654	10.795	135.831	42.950	42.977	0.0067
C2-1	12.538	104.494	0.576	1.059	0.654	11.844	153.556	44.387	44.416	0.0067
C2-1	14.093	104.518	0.600	1.091	0.651	12.918	172.594	45.194	45.224	0.0067
C2-1	15.344	104.536	0.618	1.115	0.650	13.761	187.920	45.903	45.934	0.0067
C2-1	16.650	104.555	0.637	1.139	0.649	14.617	203.920	46.613	46.645	0.0067
C2-1	17.524	104.567	0.649	1.154	0.650	15.180	214.615	47.159	47.191	0.0067
C2-1	18.678	104.583	0.665	1.173	0.650	15.917	228.748	47.918	47.951	0.0067
C2-1	19.870	104.598	0.680	1.192	0.651	16.665	243.352	48.677	48.711	0.0067
C2-1	20.742	104.609	0.691	1.206	0.651	17.203	254.032	49.189	49.223	0.0067
C2-1	22.279	104.628	0.710	1.230	0.651	18.120	272.856	49.906	49.942	0.0067
C2-1	23.872	104.646	0.728	1.253	0.652	19.050	292.362	50.624	50.660	0.0067
C2-1	26.014	104.670	0.752	1.283	0.654	20.277	318.599	51.643	51.681	0.0067
C2-1	27.587	104.687	0.769	1.304	0.655	21.161	337.861	52.375	52.413	0.0067
C2-1	29.599	104.708	0.790	1.329	0.656	22.270	362.501	53.243	53.282	0.0067
C2-1	31.684	104.729	0.811	1.354	0.658	23.397	388.044	54.110	54.151	0.0067
C2-1	31.889	104.731	0.813	1.357	0.658	23.506	390.551	54.187	54.228	0.0067
C2-1	33.477	104.747	0.829	1.373	0.661	24.383	409.998	55.463	55.504	0.0067
C2-1	36.342	104.773	0.855	1.405	0.662	25.864	445.081	56.363	56.406	0.0067
C2-1	39.325	104.800	0.882	1.437	0.664	27.370	481.620	57.264	57.308	0.0067
C2-1	39.445	104.801	0.883	1.438	0.664	27.428	483.089	57.283	57.327	0.0067
C2-1	41.990	104.822	0.904	1.466	0.665	28.636	514.260	57.804	57.848	0.0067
C2-1	44.611	104.843	0.925	1.494	0.667	29.855	546.359	58.324	58.369	0.0067
C2-1	47.712	104.867	0.949	1.526	0.669	31.261	584.342	58.845	58.891	0.0067
C2-1	50.912	104.891	0.973	1.558	0.670	32.680	623.524	59.366	59.412	0.0067
C2-1	54.147	104.914	0.996	1.589	0.672	34.069	663.141	59.713	59.760	0.0067
C2-1	57.474	104.938	1.020	1.621	0.673	35.466	703.893	60.060	60.108	0.0067
C2-1	60.892	104.961	1.043	1.651	0.675	36.872	745.748	60.407	60.455	0.0067
C2-1	63.453	104.979	1.061	1.673	0.677	37.933	777.121	60.928	60.977	0.0067
C2-1	66.068	104.996	1.078	1.694	0.679	39.004	809.147	61.449	61.498	0.0067
C2-1	69.356	105.017	1.099	1.721	0.680	40.298	849.415	61.753	61.802	0.0067
C2-1	72.718	105.038	1.120	1.748	0.682	41.598	890.593	62.056	62.107	0.0067
C2-1	75.083	105.053	1.135	1.766	0.688	42.507	919.555	63.290	63.342	0.0067
C2-1	77.484	105.067	1.149	1.784	0.694	43.433	948.956	64.524	64.576	0.0067
C2-1	77.651	105.068	1.150	1.785	0.694	43.498	951.001	64.577	64.629	0.0067
C2-1	77.651	105.068	1.150	1.785	0.694	43.498	951.001	64.577	64.629	0.0067
C2-1	77.850	105.071	1.153	1.782	0.703	43.695	953.442	66.670	66.723	0.0067
C2-1	81.741	105.097	1.179	1.798	0.696	45.454	1001.095	66.764	66.820	0.0067
C2-1	86.505	105.124	1.206	1.832	0.696	47.215	1059.442	66.857	66.917	0.0067
C2-1	91.394	105.150	1.232	1.866	0.697	48.979	1119.315	66.950	67.014	0.0067
C2-1	96.403	105.176	1.258	1.900	0.697	50.745	1180.660	67.044	67.111	0.0067
C2-1	101.533	105.203	1.285	1.933	0.698	52.514	1243.494	67.137	67.209	0.0067
C2-1	106.781	105.229	1.311	1.967	0.699	54.285	1307.764	67.231	67.306	0.0067
C2-1	112.148	105.256	1.338	2.001	0.700	56.059	1373.490	67.324	67.403	0.0067
C2-1	117.629	105.282	1.364	2.034	0.701	57.835	1440.618	67.418	67.500	0.0067
C2-1	123.227	105.308	1.390	2.067	0.702	59.613	1509.174	67.511	67.597	0.0067
C2-1	128.936	105.335	1.417	2.100	0.704	61.394	1579.103	67.605	67.694	0.0067
C2-1	134.761	105.361	1.443	2.133	0.705	63.178	1650.433	67.698	67.791	0.0067

Tabulated Cross-Section Properties // C2-2

(Calculated by Flood Modeller)

Node	Flow (m^3/s)	Stage (m AOD)	Depth (m)	Velocity (m/s)	Froude no.	Area (m^2)	Conveyance (m^3/s)	Width (m)	W Perim. (m)	Slope
C2-2	0.000	110.167	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0130
C2-2	0.001	110.181	0.014	0.139	0.531	0.009	0.010	1.218	1.219	0.0130
C2-2	0.002	110.184	0.017	0.150	0.595	0.013	0.018	2.077	2.078	0.0130
C2-2	0.003	110.187	0.020	0.157	0.654	0.022	0.031	3.809	3.810	0.0130
C2-2	0.004	110.188	0.021	0.157	0.641	0.026	0.036	4.302	4.302	0.0130
C2-2	0.006	110.190	0.023	0.154	0.631	0.037	0.050	6.036	6.037	0.0130
C2-2	0.007	110.191	0.024	0.151	0.630	0.043	0.057	7.435	7.435	0.0130
C2-2	0.030	110.203	0.036	0.216	0.534	0.138	0.261	8.309	8.310	0.0130
C2-2	0.031	110.204	0.037	0.210	0.538	0.147	0.271	9.393	9.394	0.0130
C2-2	0.031	110.204	0.037	0.210	0.567	0.147	0.271	10.453	10.454	0.0130
C2-2	0.050	110.210	0.043	0.231	0.562	0.216	0.437	12.485	12.486	0.0130
C2-2	0.082	110.217	0.050	0.268	0.567	0.306	0.720	13.446	13.448	0.0130
C2-2	0.116	110.223	0.056	0.299	0.571	0.388	1.018	13.913	13.915	0.0130
C2-2	0.198	110.235	0.068	0.351	0.584	0.563	1.736	15.238	15.240	0.0130
C2-2	0.282	110.244	0.077	0.397	0.596	0.710	2.471	15.744	15.747	0.0130
C2-2	0.378	110.254	0.087	0.439	0.608	0.862	3.318	16.250	16.253	0.0130
C2-2	0.506	110.265	0.098	0.481	0.640	1.052	4.439	18.239	18.243	0.0130
C2-2	0.550	110.269	0.102	0.488	0.632	1.126	4.821	18.489	18.492	0.0130
C2-2	0.770	110.285	0.118	0.537	0.641	1.434	6.751	20.048	20.051	0.0130
C2-2	0.816	110.288	0.121	0.546	0.643	1.494	7.161	20.292	20.296	0.0130
C2-2	1.125	110.306	0.139	0.600	0.655	1.874	9.865	21.859	21.863	0.0130
C2-2	1.331	110.317	0.150	0.627	0.660	2.121	11.669	23.039	23.044	0.0130
C2-2	1.347	110.318	0.151	0.628	0.661	2.144	11.816	23.287	23.291	0.0130
C2-2	1.399	110.321	0.154	0.631	0.684	2.217	12.270	25.544	25.548	0.0130
C2-2	1.378	110.323	0.156	0.607	0.659	2.269	12.086	26.200	26.205	0.0130
C2-2	1.416	110.325	0.158	0.610	0.659	2.322	12.417	26.635	26.640	0.0130
C2-2	1.712	110.338	0.171	0.639	0.666	2.680	15.019	28.557	28.562	0.0130
C2-2	1.738	110.339	0.172	0.642	0.666	2.709	15.242	28.673	28.678	0.0130
C2-2	2.012	110.349	0.182	0.671	0.671	3.000	17.643	29.473	29.478	0.0130
C2-2	2.305	110.359	0.192	0.699	0.676	3.299	20.214	30.272	30.277	0.0130
C2-2	2.625	110.370	0.203	0.721	0.679	3.639	23.027	31.656	31.662	0.0130
C2-2	2.770	110.375	0.208	0.729	0.680	3.799	24.296	32.466	32.471	0.0130
C2-2	2.846	110.378	0.211	0.730	0.682	3.898	24.962	33.317	33.323	0.0130
C2-2	2.962	110.382	0.215	0.734	0.683	4.033	25.976	34.277	34.283	0.0130
C2-2	3.224	110.390	0.223	0.748	0.687	4.313	28.277	35.690	35.696	0.0130
C2-2	3.370	110.394	0.227	0.756	0.688	4.457	29.558	36.245	36.251	0.0130
C2-2	4.075	110.411	0.244	0.802	0.695	5.084	35.744	37.486	37.493	0.0130
C2-2	4.191	110.415	0.248	0.800	0.694	5.236	36.759	38.637	38.643	0.0130
C2-2	4.649	110.425	0.258	0.826	0.698	5.626	40.778	39.393	39.400	0.0130
C2-2	5.130	110.435	0.268	0.852	0.702	6.024	44.996	40.149	40.156	0.0130
C2-2	5.405	110.441	0.274	0.862	0.704	6.267	47.402	40.920	40.928	0.0130
C2-2	5.483	110.444	0.277	0.858	0.705	6.392	48.089	42.298	42.306	0.0130

Node	Flow (m^3/s)	Stage (m AOD)	Depth (m)	Velocity (m/s)	Froude no.	Area (m^2)	Conveyance (m^3/s)	Width (m)	W Perim. (m)	Slope
C2-2	5.530	110.445	0.278	0.859	0.705	6.434	48.500	42.443	42.451	0.0130
C2-2	6.072	110.456	0.289	0.879	0.708	6.909	53.259	43.935	43.943	0.0130
C2-2	6.631	110.466	0.299	0.902	0.711	7.353	58.162	44.858	44.866	0.0130
C2-2	6.920	110.471	0.304	0.913	0.723	7.582	60.695	46.691	46.699	0.0130
C2-2	7.122	110.476	0.309	0.911	0.715	7.817	62.462	47.267	47.275	0.0130
C2-2	7.556	110.483	0.316	0.927	0.718	8.150	66.271	47.951	47.960	0.0130
C2-2	8.275	110.494	0.327	0.953	0.722	8.683	72.580	48.871	48.879	0.0130
C2-2	9.026	110.505	0.338	0.978	0.726	9.225	79.167	49.790	49.799	0.0130
C2-2	9.090	110.506	0.339	0.980	0.726	9.275	79.721	49.957	49.966	0.0130
C2-2	9.545	110.513	0.346	0.991	0.729	9.629	83.715	51.103	51.112	0.0130
C2-2	10.165	110.522	0.355	1.007	0.733	10.095	89.152	52.444	52.453	0.0130
C2-2	11.309	110.537	0.370	1.038	0.738	10.893	99.190	53.972	53.981	0.0130
C2-2	11.519	110.540	0.373	1.042	0.739	11.056	101.025	54.595	54.605	0.0130
C2-2	11.684	110.543	0.376	1.041	0.740	11.221	102.478	55.522	55.532	0.0130
C2-2	12.024	110.548	0.381	1.046	0.739	11.501	105.460	56.426	56.435	0.0130
C2-2	13.476	110.565	0.398	1.080	0.744	12.474	118.189	57.996	58.006	0.0130
C2-2	13.647	110.567	0.400	1.084	0.744	12.590	119.695	58.226	58.236	0.0130
C2-2	14.082	110.572	0.405	1.093	0.749	12.884	123.507	59.428	59.438	0.0130
C2-2	14.806	110.580	0.413	1.108	0.757	13.367	129.854	61.292	61.302	0.0130
C2-2	15.726	110.591	0.424	1.120	0.752	14.046	137.924	62.180	62.191	0.0130
C2-2	16.679	110.601	0.434	1.137	0.755	14.674	146.280	63.509	63.520	0.0130
C2-2	16.770	110.602	0.435	1.138	0.755	14.738	147.086	63.667	63.678	0.0130
C2-2	18.397	110.618	0.451	1.167	0.757	15.768	161.352	65.179	65.190	0.0130
C2-2	20.315	110.635	0.468	1.203	0.761	16.887	178.172	66.326	66.338	0.0130
C2-2	21.020	110.642	0.475	1.211	0.763	17.355	184.355	67.634	67.646	0.0130
C2-2	21.739	110.648	0.481	1.224	0.765	17.762	190.665	68.018	68.030	0.0130
C2-2	23.653	110.663	0.496	1.257	0.768	18.824	207.455	68.992	69.005	0.0130
C2-2	25.646	110.679	0.512	1.289	0.771	19.901	224.932	69.967	69.980	0.0130
C2-2	25.646	110.679	0.512	1.289	0.771	19.901	224.932	69.967	69.980	0.0130
C2-2	26.170	110.684	0.517	1.292	0.777	20.255	229.526	71.784	71.797	0.0130
C2-2	26.383	110.686	0.519	1.293	0.777	20.399	231.396	72.188	72.201	0.0130

Annex C – EA Product Data

[i] https://www.google.co.uk/maps
[ii] https://www.bgs.ac.uk/map-viewers/geoindex-onshore/
[iii] https://magic.defra.gov.uk/
[iv] https://flood-map-for-planning.service.gov.uk/
[v] https://environment.data.gov.uk/hydrology/climate-change-allowances/river-flow
[vi] https://wiltscouncil.maps.arcgis.com/apps/webappviewer/index.html?id=28c00215d87b468a9a0cd79c63d3d270

From: Wessex Enquiries <WessexEnquiries@environment-agency.gov.uk>
Sent: 04 November 2024 07:50
To: [redacted]@mabbett.eu>
Subject: 381197 WX 241016/SM07 FW: 317212 Lime Down Data Request

Dear [redacted]

Thank you for your enquiry below.

RE: Request for information under the Freedom of Information Act 2000 (FOIA) / Environmental Information Regulations 2004 (EIR)

We do not have any records or modelling of groundwater flooding in any of these areas but some of the groundwater monitoring bores (all located in the valleys) do go artesian.

Water level data for the nearby monitoring boreholes is attached.

- Hullavington 1
- Hullavington 2
- Foxley 1
- Foxley 2
- Sherston STW Prod NGR:
- Luckington 3 NGR: ST8336083140

There are no licensed groundwater abstractions in the areas given but there are licences down gradient as listed in the attached spreadsheet.

We do not have records of known contaminated sites but a list of closed pollution incidents is attached.

There are no licensed or historic landfills, or waste management licences in the areas given.

There are several Source Protection Zones in the areas given. Note the 'c' suffix denotes a confined SPZ for deep subsurface activity such as fracking or deep bores, so not applicable to surface activities.

- Lime Down A: SPZ2c and SPZ3
- Lime Down B: SPZ1c and SPZ2c and SPZ3
- Lime Down C1: SPZ2c and SPZ3

- Lime Down C2: SPZ2c and SPZ3
- Lime Down D: SPZ1c and SPZ2c and SPZ3
- Lime Down E1: SPZ1c and SPZ2c
- Lime Down E2: SPZ1c and SPZ2c

The aquifer designations in the areas given are,

- Alluvium – Secondary A Aquifer with Medium to High Vulnerability
- Forest Marble limestone member - Principal Aquifer with High Vulnerability
- Forest Marble mudstone member - Secondary A Aquifer with High Vulnerability
- Cornbrash - Secondary A Aquifer with High Vulnerability
- Kellaways Clay – Unproductive Strata

Provision of FRA Product 4

Thank you for your recent request to use Environment Agency flood data. The information is attached.

If you have requested this information to help inform a development proposal, then you should note the information on GOV.UK on the use of Environment Agency Information for Flood Risk Assessments and our attached advisory text.
https://www.gov.uk/planning-applications-assessing-flood-risk
https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion

Further details about the Environment Agency information supplied and the permitted use of this information can be found on the GOV.UK website:
https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather
http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3

We respond to requests under the Freedom of Information Act 2000 (FOIA) and Environmental Information Regulations 2004 (EIR).

If you are not satisfied with our response to your request for information you can contact us within 2 calendar months to ask for our decision to be reviewed.

We really value your thoughts on how we are doing and will always make changes where we can to improve our service. Please click on the link below and fill in our survey.
http://www.smartsurvey.co.uk/s/EnvironmentAgencyCustomerSurvey/?a=DC *Thank you.*

Kind regards

[redacted]

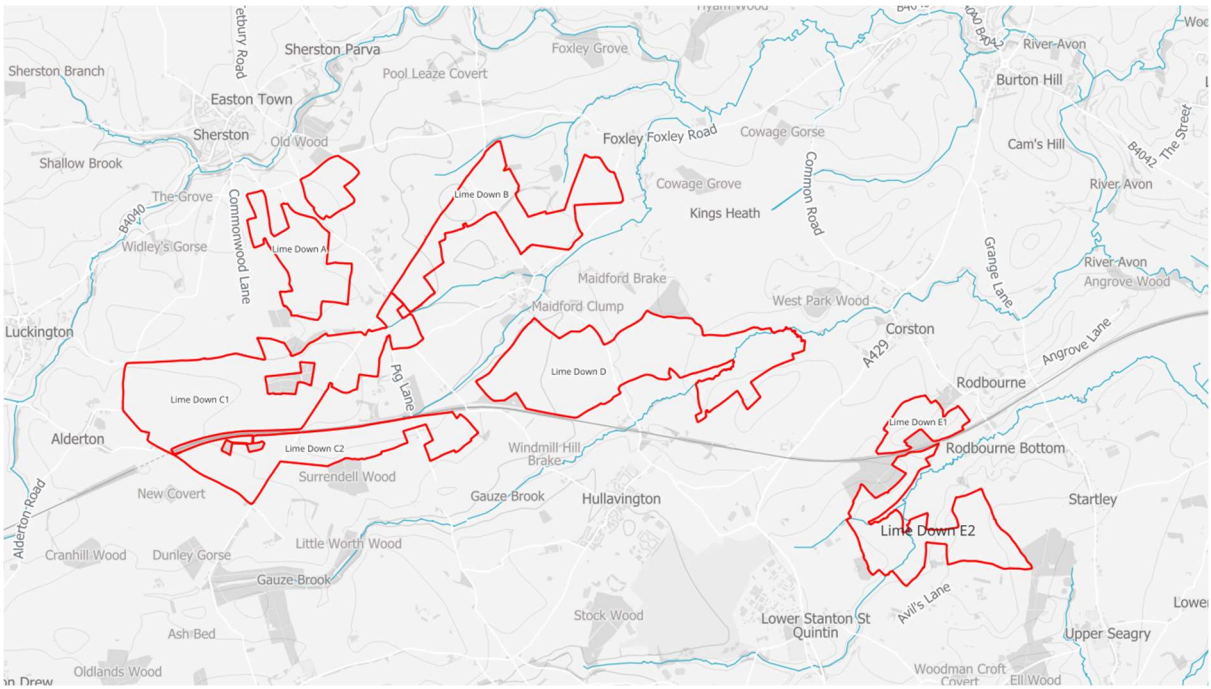
Environment Agency, Wessex Enquiries, Customer & Engagement Team

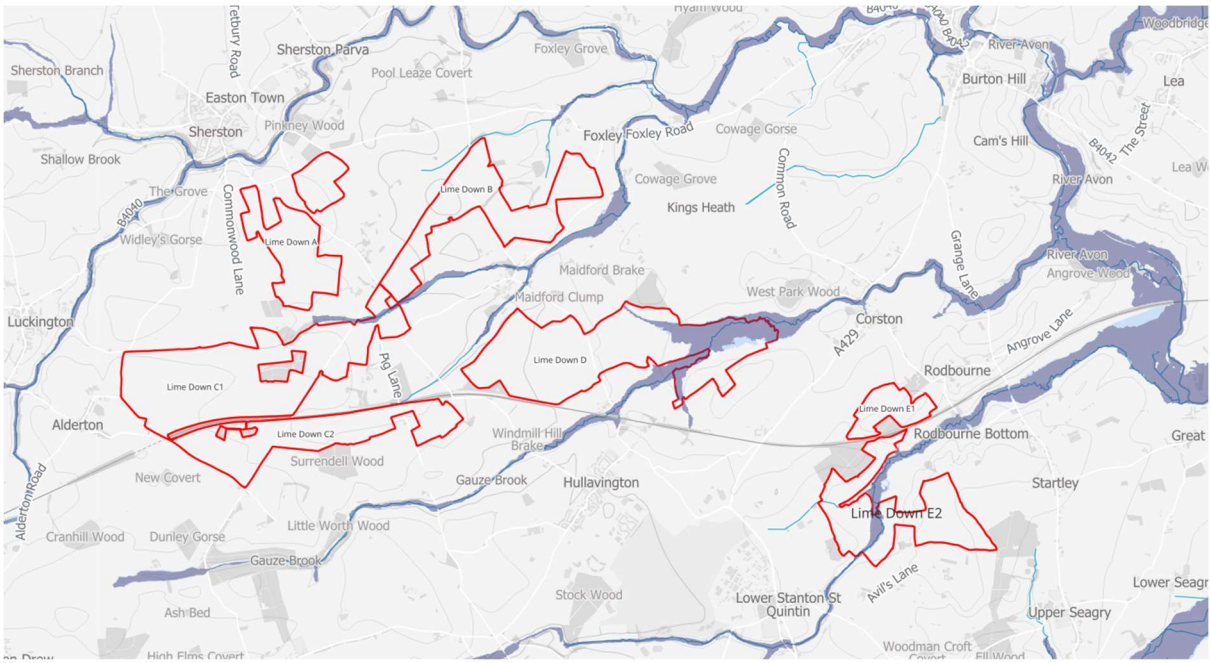
[redacted] Wessex Enquiries

From: [redacted]@mabbett.eu>
Sent: 15 October 2024 14:01
To: Enquiries, Unit <enquiries@environment-agency.gov.uk>
Subject: 317212 Lime Down Data Request

To whom it may concern,

Mabbett & Associates Ltd have been instructed to undertake a Flood Risk Assessment and Drainage Strategy in support of a proposed solar site in Wiltshire, known as the site hereon. I attach a site location plan and the site details below. The site has been split into parcels which can be seen below (Lime Down A, B, C1, C2, D, E1 and E2).





According to the EA online Flood M Planning, the Site is shown to be located within Flood Zones 1, 2 and 3, however we would be grateful if you could provide **any nearby modelled flood level data** in order to inform our assessment of the Site.

It would therefore be useful if you are able to confirm/provide the followiap forng where available:

Site Details

Site Name	Lime Down SOlar
Address	Lime Down A: SN16 0PU (NGR: 385982, 184814) Lime Down B: SN16 0JS (NGR: 388179, 185419) Lime Down C1: SN14 6NL (NGR: 385300, 183486) Lime Down C2: SN16 0JZ (NGR: 386684, 182717) Lime Down D: SN14 6EU (NGR: 389526, 183654) Lime Down E1: SN16 0EX (NGR: 392655, 183066) Lime Down E2: SN14 6DA (NGR: 393123, 181766)

Data Request

Please provide any of the following information to enable us to complete our assessment:

Historical Flooding Information

· Any records, photographs, flood extents from known historic events in the area

Technical Data

· Any hydraulic models covering the site

· Raw and processed results for the model(s) above

- Hydraulic modelling report for the model(s) above
- Modelled floodplain levels and flows for node points within and in the immediate vicinity of the Site taking into account the most recent climate change allowances (where these have been modelled);

· Hydrology report and/or flood estimation calculation records for the model(s) above

· Survey data used to build the model or inform nearby studies

Supporting Data

- Flood/coastal defence survey data
- Operational procedures for hydraulic structures
- Section 19 flood investigation reports
- The date and type of modelling that flood levels have been derived from;
- The technical report summarising the modelling methodology;
- Confirmation that the data is appropriate/relevant to inform flood risk within the Site;
- Details of any flood defences within the vicinity of the Site (i.e type, crest levels, Standard of Protection, condition, etc) and any associated breach and/or overtopping flood extents and depths;
- Hazard mapping detailing the depth, velocity and associated hazard rating for the Site;
- Any information in relation to surface water flooding including confirmation is located within or outside of a Critical Drainage Area;
- Any information in relation to on-Site drainage;
- Any information in relation to groundwater flooding in the area. Where possible, please provide borehole locations and ground water levels;
- Details of sensitive aquifers and known contamination issues;
- Any information/mapping of historical flooding events on Site from all sources of flooding (i.e fluvial, tidal, surface water, groundwater, sewer, reservoir, canal, etc).

Where available please can you provide flood levels, estimated return periods, photographs and other such data that may be relevant to our assessment;

We trust this request is acceptable but please do not hesitate to contact us if you require any further information to assist with your response or wish to discuss the Site in further detail.

We look forward to hearing from you.

Thanks,

[redacted]

Consultant | Water Environment Team

Mobile: [redacted]

[redacted]@mabbett.eu www.mabbett.eu

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creating a better place

Environment Agency

[redacted]
Mabbett
[redacted]@mabbett.eu

Our ref: 381197-WX
Date: 4th November 2024

Dear [redacted]

Thank you for your enquiry which was received on 15th October 2024. We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

Abstract

Name	Product 4
Description	Flood Risk Information for land at **Lime Down** NGR: ST9009082825
Licence	Open Government Licence
Information Warnings	*The mapping of features provided as a background in this product is © Ordnance Survey. It is provided to give context to this product. The Open Government Licence does not apply.*
Attribution	Contains Environment Agency information © Environment Agency and/or database rights. Contains Ordnance Survey data © Crown copyright 2023 Ordnance Survey *AC0000807064*.

Open Data

The following Environment Agency published datasets are now available on the weblink below as part of the Government's 'Open Data' project and are available for you to download free of charge.

Environment Agency published datasets: https://data.gov.uk/data/search?publisher=environment-agency&unpublished=false

You will need to search and select the name of the following datasets to take you directly to the weblink to enable you to download the data:

- Flood Map for Planning (Rivers and the Sea) – Flood Zones 2 and 3
- Flood Map for Planning (Rivers and Sea) – Areas Benefiting from Defences
- Flood Map for Planning (Rivers and Sea) Spatial Flood Defences
- Flood Map for Planning (Rivers and Sea) Flood Storage Areas
- Recorded Flood Outlines
- Historic Flood Map
- Risk of Flooding from Surface Water Extent for:
  - → 3 percent annual chance
  - → 1 percent annual chance
  - → 0.5 percent annual chance

You can also access the Flood Map for Planning here: https://flood-map-for-planning.service.gov.uk/

You can also access the Risk of Flooding from Surface Water maps and Risk of Flooding from Reservoirs information here: https://flood-warning-information.service.gov.uk/long-term-flood-risk/map

Recorded Historic Flood Events

We no longer produce pdf copies of the Historic Flood Map. This information is available to search, select, and download free of charge as part of the Government's 'open data' as

- Recorded Flood Outlines
- the Historic Flood Map

Our historic records indicate that there was flooding in the area in **1925** (fluvial), **1932** (fluvial), **1954** (fluvial), **1979** (fluvial), **1999** (fluvial/unconfirmed source), **2007** (fluvial), **2009** (fluvial), **2012** (fluvial/unconfirmed source) and **2013** (fluvial).

Additionally, our historic records show a record of possible flooding pre 2012 for the area, however we are currently unable to confirm the date and source of this.

Please note - we cannot guarantee that this is an exhaustive list of all past flood events in this location. All reasonable care has been taken to ensure that the historical flood event data is as accurate as possible. The Environment Agency will update its records if new evidence emerges.

Modelled Fluvial Water Levels

We have not carried out any detailed fluvial flood risk modelling in this location.

The fluvial Flood Map in this area has been produced using our National Generalised Model (JFLOW). This modelling is fit for the purpose of the Flood Zones. However, it is not based on a specific channel survey. Neither water depths nor water levels were outputs specified when we commissioned this generalised modelling for the Flood Zones. Whilst the modelling process does provide some information on depth of water, it would have been possible to produce the flood extents without storing the water depth values, since water depth is only a 'by-product' of the calculation process. As this type of modelling was developed, tested and reviewed for production of the Flood Zone extents only, we have no information on the accuracy of the water depth data. Water depth or level outputs from this model are only suitable to be used for decision making at a broad catchment scale and is not fit for the purpose of a site-specific flood risk assessment.

For your information we have supplied maps showing the water depths derived from JFLOW for the 1% AEP (100yr) and 0.1% AEP (1000yr) fluvial modelled flood scenarios.

Please note - The Environment Agency is currently carrying out a project to update the National Generalised model (JFLOW). The New National Model outputs are expected in Spring 2025. Our published flood risk information for this area will be updated using outputs from the New National Model and this is expected to take place in late 2025 (current programme which may change). This will be carried out as part of the National project to update our National flood risk mapping and modelling information across England and will incorporate outputs from detailed local models together with updated National modelling.
New National Model Details.

The New National Modelling (NNM) is a set of models for rivers, surface water and the sea covering the whole of England. The NNM has been created to fill in gaps where we don't have local

hydraulic models, our local models require updating or we need additional model scenarios such as climate change runs.

Please also note - we are currently carrying out a National project to update our flood risk information for the whole of England. We will be updating our flood risk information in 2025 as part of the new National Flood Risk Assessment (NaFRA2). This will include the data displayed on the Check Your Long-Term Flood Risk service and the data displayed in the Flood Map for Planning (Rivers and Sea).

This should result in improvements to our mapping products, especially where we do not currently have any detailed local modelling. This means there will be some changes to our flood risk information in many areas when the new data is published.

You can find further information on the NaFRA2 project here: https://www.gov.uk/guidance/updates-to-national-flood-and-coastal-erosion-risk-information

For more information on climate change allowances please see the guidance on the Gov.UK website here: Flood risk assessments: climate change allowances - GOV.UK. **Please be aware that this information is subject to change, please check the guidance regularly.**

Environmental Permit for Flood Risk Activities

In addition to any other permission(s) that you may have already obtained e.g. planning permission, you may need an environmental permit for flood risk activities (formerly known as Flood Defence Consent prior to 06 April 2016) if you want to do work:

- in, under, over or near a main river (including where the river is in a culvert)
- on or near a flood defence on a main river
- in the flood plain of a main river
- on or near a sea defence

For further information and to check whether a permit is required please visit: https://www.gov.uk/guidance/flood-risk-activities-environmental-permits.

For any further advice, please email Blandford.frap@environment-agency.gov.uk.

Ordinary Watercourse

Some of the watercourses adjoining this site are classed as an “Ordinary Watercourse” not a “Main River” under our control. Works to ordinary watercourses may require consent from either the Lead Local Flood Authorities or the Local Drainage Board.

Flood Asset Information

Please find enclosed details of Flood Assets within the area. This information has been taken from our Asset Information Management System database (AIMS).

Please note that flood defences can increase water levels elsewhere eg through channels being restricted by defences, or because defences prevent flood water flowing back into the river channel.

Planning

If you have questions regarding the planning nature of your enquiry, or require advice on floor levels, please contact our Sustainable Places team on wx.sp@environment-agency.gov.uk. Please be aware that we now charge for planning advice when consulted on pre-application enquiries. This new approach provides advice to developers in two ways. Firstly, there is the provision of ‘free’

advice available to everyone where we give a preliminary opinion on a proposed development. This sets out the environmental constraints together with any issues this raises for us. Should you wish us to review in detail any of these issues then we can do this through a chargeable scheme aimed at recovering our costs.

Strategic Flood Risk Assessment (SFRA)

When preparing a FRA to support a development proposal in this location you should refer to Wiltshire Council's SFRA Reports Level 1 which is available to download via the following link: https://www.wiltshire.gov.uk/media/5691/Strategic-Flood-Risk-Assessment-Level-1/pdf/Wiltshire_Council_Level_1_SFRA_v5.0.pdf?m=637459765054370000

The Wiltshire Council Local Plan is available via this link: https://www.wiltshire.gov.uk/planning-policy-local-plan-review-consultation

Further Information

We advise that you also contact the drainage engineer/ flood risk management team at Wiltshire Council by email: drainage@wiltshire.gov.uk, or by phone: 0300 456 0105, based at: Bythesea Road, Trowbridge, Wiltshire, BA14 8JN, as they may be able to provide further advice with respect to localised flooding and drainage issues.

Further details about the Environment Agency information supplied can be found on our website: https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather

We hope you find this information helpful. It is provided subject to the attached notice 'Use of Environment Agency Information for Flood Risk Assessments', which we strongly recommend you read.

Yours sincerely

[redacted]

Customer & Engagement, Wessex
Rivers House, East Quay, Bridgwater, Somerset, TA6 4YS
Email: wessexenquiries@environment-agency.gov.uk

Enc: Use of Environment Agency Information for Flood Risk Assessments (below)
381197-WX 100yr JFLOW Depth Map (1%AEP)
381197-WX 1000yr JFLOW Depth Map (0.1%AEP)
381197-WX Defence Map
381197-WX Defence Data

Use of Environment Agency Information for Flood Risk Assessments (FRAs)

Important
Use of Environment Agency data: you should note that

1. Information supplied by the Environment Agency may be used to assist in producing a Flood Risk Assessment (FRA) where one is required, but the use of Environment Agency information does not constitute such an assessment on its own.

2. As part of your data request, we have provided all of the modelled data we hold for your location. Please note that some of our modelled information may have been produced for purposes other than for flood zone generation. This may mean that some of the modelled data you have been provided with has a lower confidence level, and has not been used in producing our flood map, nor definitively reflects the predicted flood water level at the property/development site scale. To check the suitability of the use of this information in your FRA please contact your local Partnership & Strategic Overview (PSO) team.

3. This information covers flood risk from main rivers and the sea, and you will need to consider other potential sources of flooding, such as groundwater or surface water runoff. The information produced by the Local Planning Authority and the Lead Local Flood Authority (LLFA) may assist in assessing other sources of flood risk.

4. Where a planning application requires a FRA and this is not submitted or deficient, the Environment Agency may well raise an objection.

5. For more significant proposals in higher flood risk areas, we would be pleased to discuss details with you ahead of making any planning application, and you should also discuss the matter with your Local Planning Authority.

Pre-Planning Advice from the Environment Agency
If you have requested this information to help inform a development proposal, then we recommend that you undertake a formal pre-application enquiry using the form available from our website:

Pre-application Preliminary Opinion:
https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion

Pre-application Charged Service:
https://www.gov.uk/government/publications/planning-advice-environment-agency-standard-terms-and-conditions

Depending on the enquiry we may also provide advice on other issues related to our responsibilities, including flooding, waste, land contamination, water quality, biodiversity, navigation, pollution, water resources, foul drainage or Environmental Impact Assessment.

Flood Risk Assessment (FRA) Guidance
You should refer to the Planning Practice Guidance of the National Planning Policy Framework (NPPF) and the Environment Agency's Flood Risk Standing Advice for information about Flood Risk Assessment (FRA) for new development in the different Flood Zones. These documents can be accessed via:

National Planning Policy Framework Planning Practice Guidance:
http://planningguidance.planningportal.gov.uk/

Environment Agency advice on FRAs:

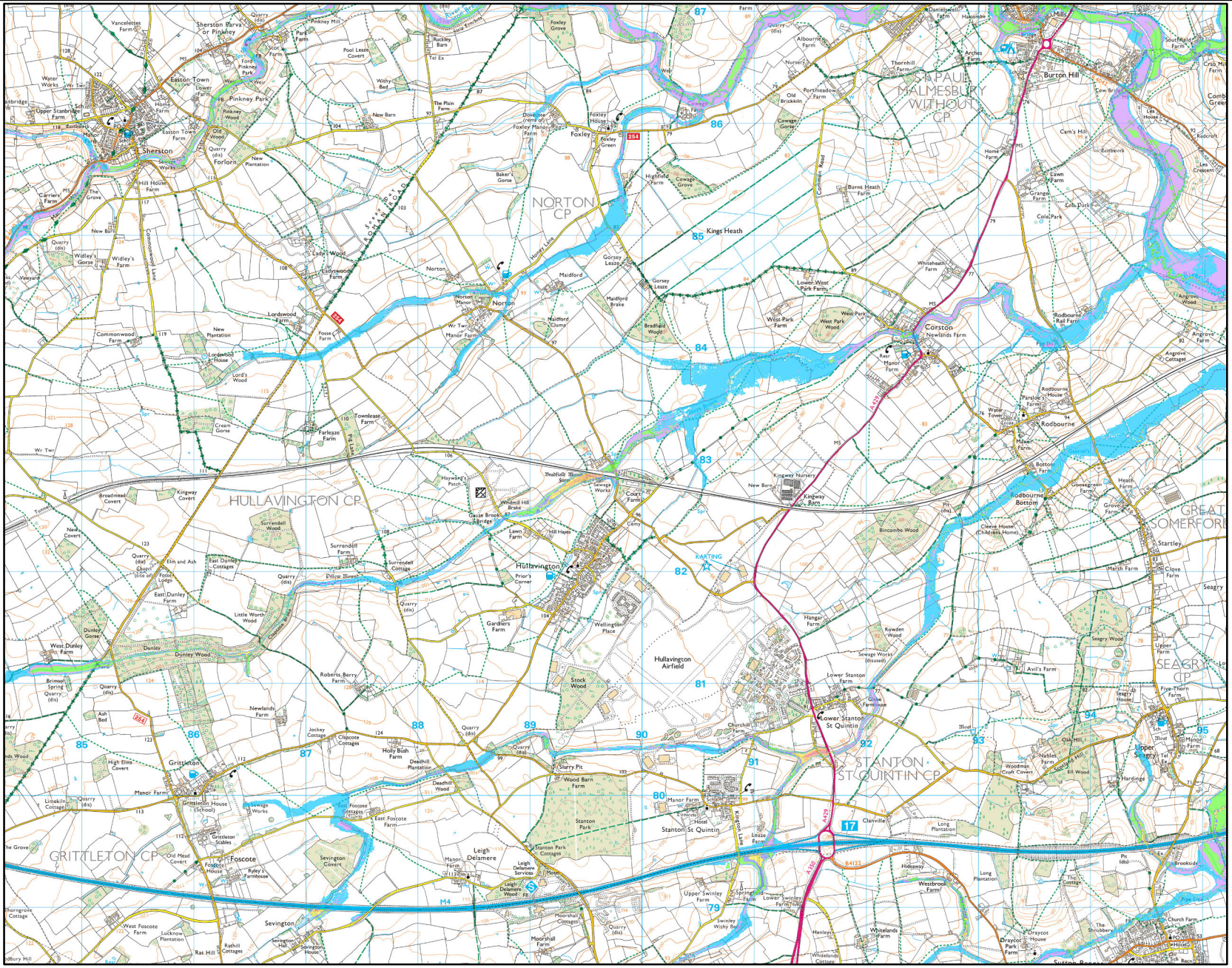
Customer & Engagement, Wessex
Rivers House, East Quay, Bridgwater, Somerset, TA6 4YS
Email: wessexenquiries@environment-agency.gov.uk
www.environment-agency.gov.uk

https://www.gov.uk/flood-risk-assessment-for-planning-applications#when-to-follow-standing-advice

https://www.gov.uk/government/publications/planning-applications-assessing-flood-risk

Customer & Engagement, Wessex
Rivers House, East Quay, Bridgwater, Somerset, TA6 4YS
Email: wessexenquiries@environment-agency.gov.uk
www.environment-agency.gov.uk

381197-WX - JFLOW Fluvial Water depths (m) Without Flood Defences. 100 year (1% AEP) centred on land at Lime Down [390090,182825].
Created 01.11.2024



Environment Agency

Scale 1:50,000

N W E S

Legend

100yr JFLOW Depth

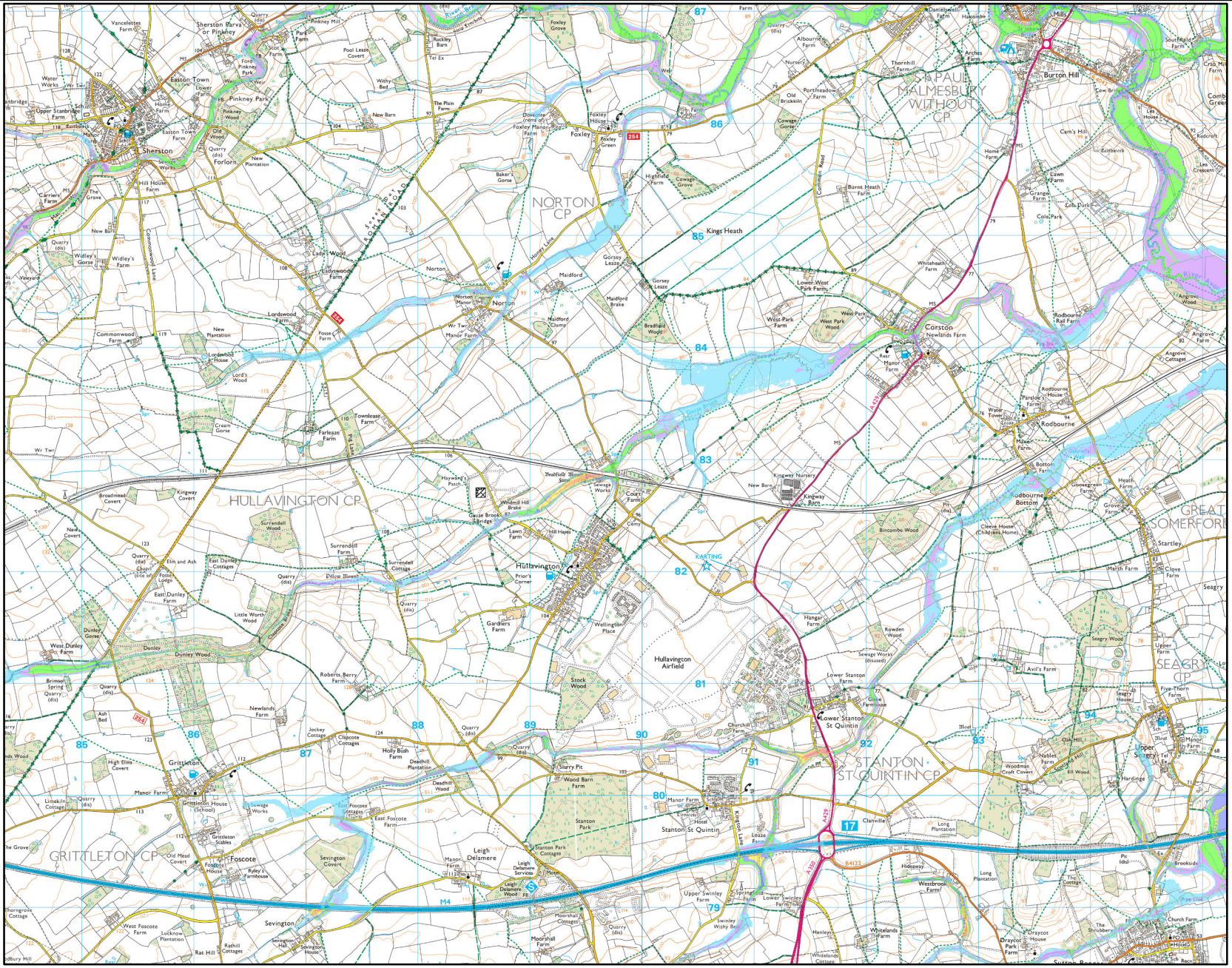
Metres

- 0 - 0.5
- 0.500000000 - 1
- 1.000000001 - 2
- 2.000000001 - 3
- 3.000000001 - 4
- 4.000000001 - 5
- 5.000000001 - 10
- 10.00000001 - 100

Information Warning
We do not recommend the use of water depths/levels derived from JFLOW for site specific investigations such as Flood Risk Assessments.

Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 03708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

381197-WX - JFLOW Fluvial Water depths (m) Without Flood Defences. 1000 year (0.1% AEP) centred on land at Lime Down [390090,182825].
Created 01.11.2024



Environment Agency

Scale 1:50,000

N
W E
S

Legend

1000yr JFLOW Depth

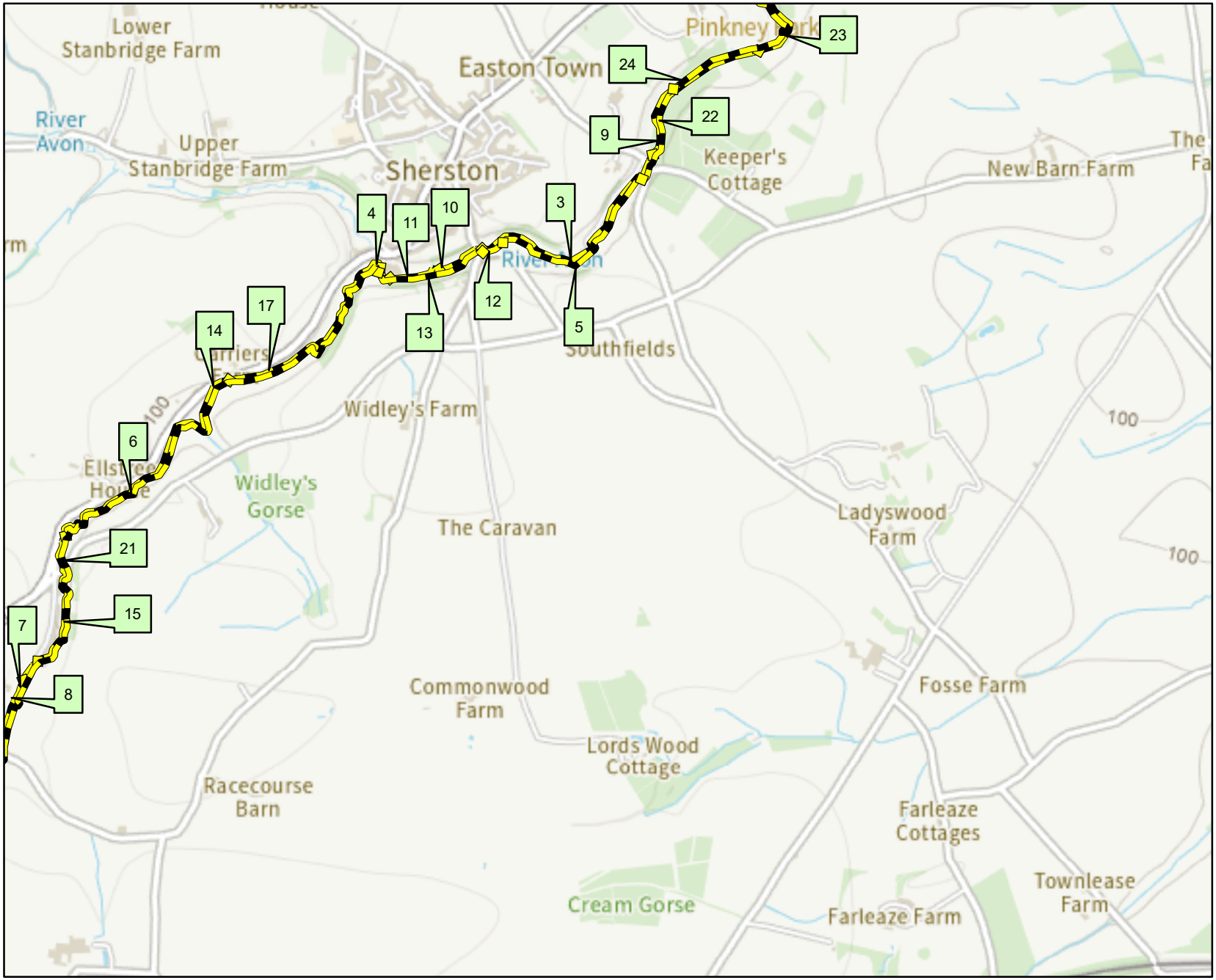
Metres

- 0 - 0.5
- 0.500000000 - 1
- 1.000000001 - 2
- 2.000000001 - 3
- 3.000000001 - 4
- 4.000000001 - 5
- 5.000000001 - 10
- 10.00000001 - 100

Information Warning
We do not recommend the use of water depths/levels derived from JFLOW for site specific investigations such as Flood Risk Assessments.

Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 03708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

Current Flood Defences centered on NGR ST 85982 84814 Created 22/10/2024 Ref: 381197-WX



Environment Agency

Scale: 1:20,000

N W E S

Legend

Defences

- Barrier Beach
- Beach
- Bridge Abutment
- Cliff
- Demountable Defence
- Dunes
- Embankment
- Engineered High Ground
- Flood Gate
- Natural High Ground
- Promenade
- Quay
- Spillway
- Wall

This data has been extracted from the Asset Information Management System (AIMS OM) which was created to draw various data sources into one database and has been populated with information of varying quality.

Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 03708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

Product 4 - AIMS Information **381197-WX** **Date:** **22/10/2024**

Map Ref	Asset ID	Asset Type	Right or left bank	Asset Description	Approx length (m)	Actual fluvial downstream crest level (mAOD)	Actual fluvial downstream crest level accuracy	Actual fluvial upstream crest level (mAOD)	Actual fluvial upstream crest level accuracy	Actual fluvial coastal crest level (mAOD)	Actual fluvial coastal crest level accuracy	NGR	Most recent inspection	Overall condition
3	40115	Natural High Ground	Left	Natural Bank	878.51	DNR	DNR	DNR	DNR	DNR	DNR	ST8592785717	07/04/2009	2 - Good
4	40116	Natural High Ground	Left	Stone wall	63.60	DNR	DNR	DNR	DNR	DNR	DNR	ST85158562	07/04/2009	2 - Good
5	40419	Natural High Ground	Right	Natural Bank	714.43	DNR	DNR	DNR	DNR	DNR	DNR	ST85898565	07/04/2009	2 - Good
6	40420	Natural High Ground	Left	Natural Bank	959.72	DNR	DNR	DNR	DNR	DNR	DNR	ST84218478	19/12/2007	3 - Fair
7	4605	Natural High Ground	Left	Natural channel with masonry retaining wall	89.38	DNR	DNR	DNR	DNR	DNR	DNR	ST8389484163	23/10/1996	3 - Fair
8	4606	Natural High Ground	Left	Natural Bank	1229.01	DNR	DNR	DNR	DNR	DNR	DNR	ST83618359	19/12/2007	3 - Fair
9	4730	Natural High Ground	Left	Natural Bank	275.81	DNR	DNR	DNR	DNR	DNR	DNR	ST8615986133	07/04/2009	3 - Fair
10	4731	Natural High Ground	Left	Natural channel with stone retaining wall	181.67	DNR	DNR	DNR	DNR	DNR	DNR	ST85438562	07/04/2009	2 - Good
11	4849	Natural High Ground	Left	Natural Bank	189.57	DNR	DNR	DNR	DNR	DNR	DNR	ST8525585581	07/04/2009	2 - Good
12	4851	Natural High Ground	Right	Stone Wall	83.61	DNR	DNR	DNR	DNR	DNR	DNR	ST85568567	07/04/2009	2 - Good
13	4852	Natural High Ground	Right	Natural Bank	425.87	DNR	DNR	DNR	DNR	DNR	DNR	ST85348558	07/04/2009	2 - Good
14	4853	Natural High Ground	Left	Natural channel with gabion retaining wall	35.34	DNR	DNR	DNR	DNR	DNR	DNR	ST8458185202	23/10/1996	2 - Good
15	4854	Natural High Ground	Left	Masonry Wall	537.87	DNR	DNR	DNR	DNR	DNR	DNR	ST84028445	23/10/1996	3 - Fair
17	88456	Natural High Ground	Left	Natural Bank	825.00	DNR	DNR	DNR	DNR	DNR	DNR	ST8491285333	19/12/2007	3 - Fair
21	89868	Natural High Ground	Right	Natural Bank	3685.06	DNR	DNR	DNR	DNR	DNR	DNR	ST8404084431	19/12/2007	3 - Fair
22	98384	Natural High Ground	Right	Natural Bank	708.60	DNR	DNR	DNR	DNR	DNR	DNR	ST8619186219	07/04/2009	3 - Fair
23	98385	Natural High Ground	Right	Natural channel with stone retaining wall	561.70	DNR	DNR	DNR	DNR	DNR	DNR	ST86538659	07/04/2009	3 - Fair
24	98386	Natural High Ground	Left	Natural channel with masonry retaining wall	1001.16	DNR	DNR	DNR	DNR	DNR	DNR	ST8650586598	07/04/2009	2 - Good

Notes

* Overall Condition has been taken from the most recent inspection
* Inspections are of a purely visual nature and do not necessarily reflect the true condition of the asset
* Condition: 1 = very good, Condtion 2 = good, Condition 3 = fair, Condition 4 = poor, Condition 5 = very poor
* Crest level accuracy: 1 = ± 0.01 to 0.05m, 2 = ± 0.05 to 0.15m, 3 = ± 0.15 to 0.75m, 4 = ± 0.75 or greater
* DNR = data not recorded