Lime Down
Solar Park

Environmental Statement

Volume 3, Appendix 11-2: Flood Risk Assessment and Drainage Strategy - Lime Down A

September 2025

Revision 1

Planning Inspectorate Reference: EN010168

Document Reference: APP/6.3

APFP Regulation 5(2)(a)

Appendix 11-2: Flood Risk Assessment and Drainage Strategy – Lime Down A

Prepared by: Isobel Randall

For: Lime Down Solar Park Ltd

Site: Lime Down Solar Park

Date: 01/08/2025

Document Ref: 317212-02

Issue-01

Contents

Figures

Annexes

1. 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 A.

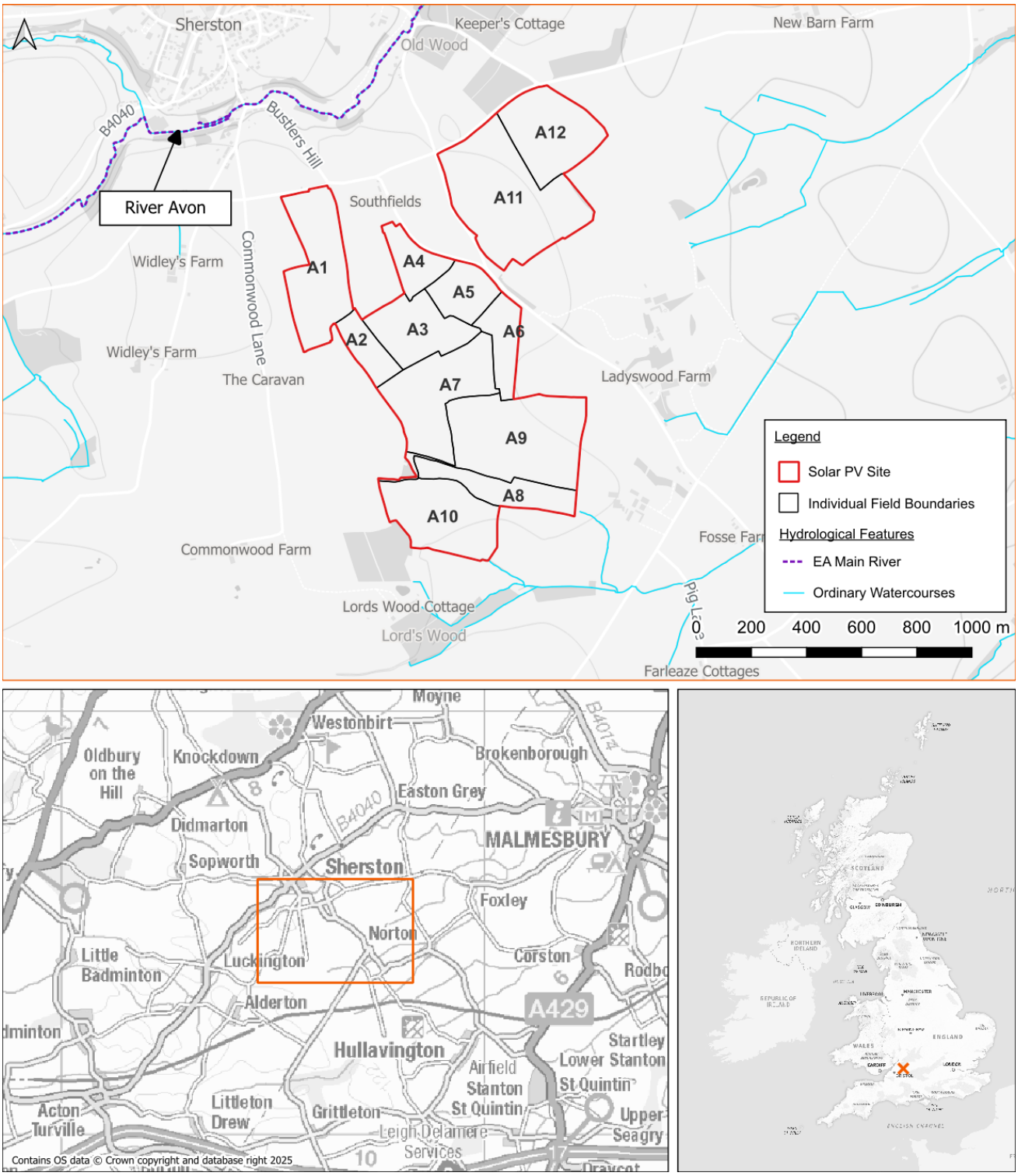


Figure 1: Site Location

1.2 Site Location

1.2.1 Lime Down A is located in an agricultural area, approximately 500m to the south of Sherston, a village west of Malmesbury, Wiltshire. The furthest point north is at grid reference 386500E, 185700N, and the furthest point south is at 386000E, 183900N.

1.3 Existing Site Conditions

1.3.1 Online mapping (including Google Maps/Google Streetview imagery[i] accessed 28/05/2025) shows that Lime Down A is greenfield comprising agricultural fields. Additionally, no watercourses are located within Lime Down A.

1.4 Topography

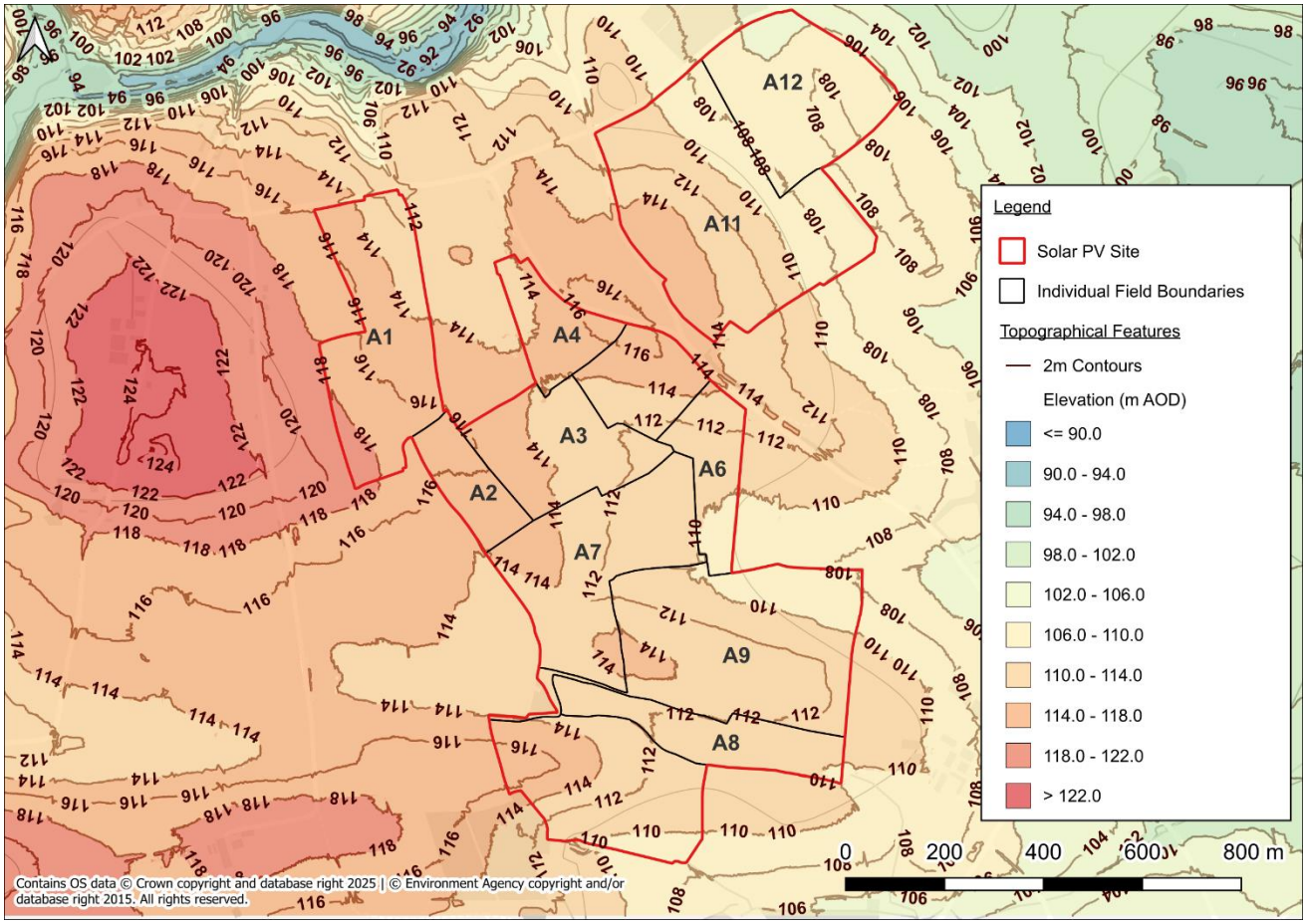


Figure 2: LiDAR Plan

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 A has a topographic highpoint of approximately 119m AOD along the northwest boundary. The elevation then slopes to the east and southeast. The lowest elevation at Lime Down A is approximately 108m AOD along the southeast boundary (Figure 2).

1.5 Hydrology

1.5.1 The nearest EA Main River is the River Avon situated approximately 240m north of Lime Down A, which is discussed further in Section 2.0. There are also two unnamed land drainage ditches that are adjacent to the southern boundary.

1.5.2 The River Avon flows in a northeasterly direction towards Malmesbury before flowing in a southerly direction. The two unnamed land drainage ditches flow in a southerly direction.

1.5.3 Main Rivers fall within the responsibility of the EA to maintain, whereas Ordinary Watercourses fall within the responsibility of the Lead Local Flood Authority (LLFA) (Wiltshire Council).

1.6 Water Framework Directive Status

1.6.1 Lime Down A is located within the Avon Bristol and North Somerset Streams, specifically the Sherston Avon Water Body and the Tributary (source to conf Sherston Avon) Water Body Catchment.

1.6.2 The Sherston Avon Water Body Catchment has a Cycle 3 ecological status of Poor in 2019 and 2022 and a failing chemical status in 2019 (no data in 2022). The Tributary (source to conf Sherston Avon) has a Cycle 3 ecological status of Good in 2019 and 2022 and a failing chemical status in 2019 (no data in 2022).

1.6.3 A summary of the Water Body Classifications can be found in Annex A.

1.7 Geology

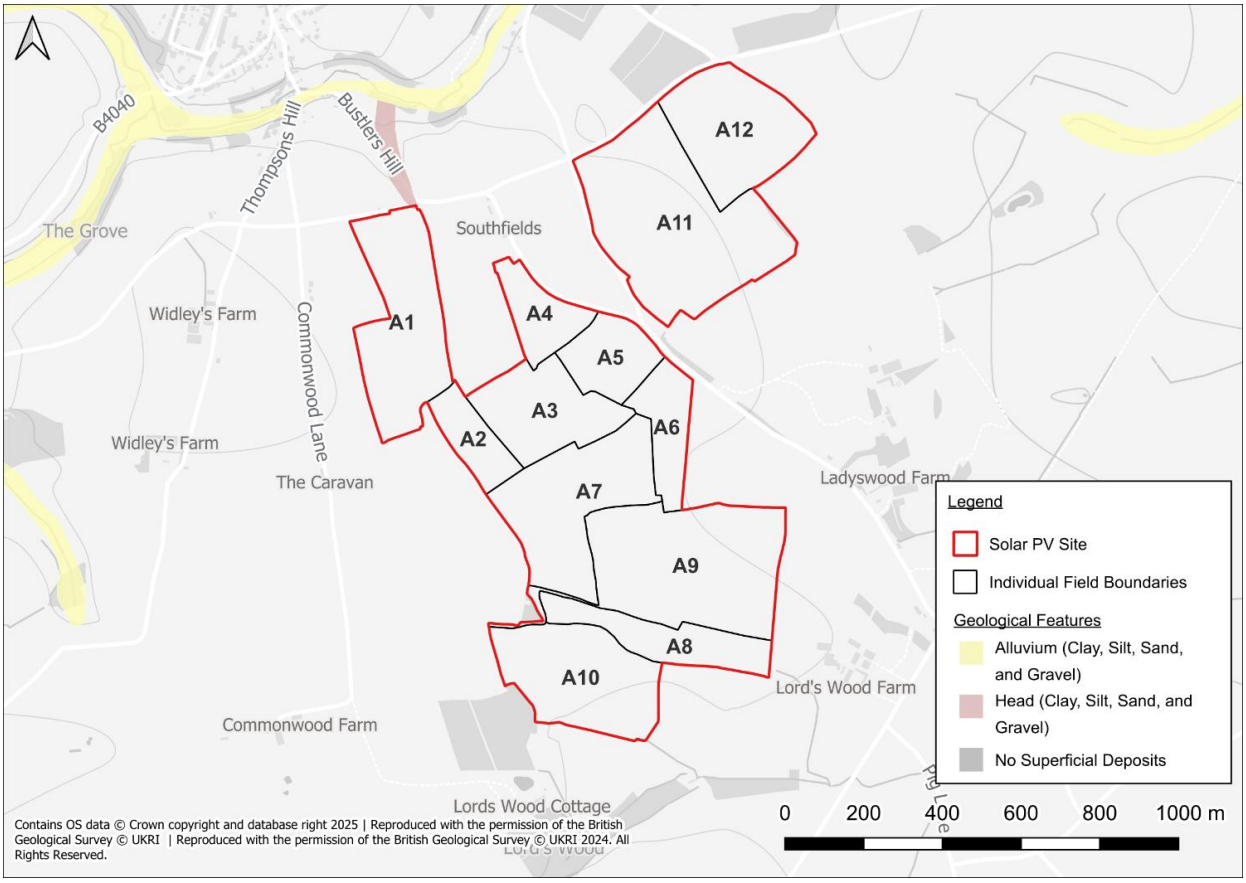


Figure 3: Superficial Deposits

1.7.1 Reference to the British Geological Survey[ii] (BGS) online mapping (1:50,000 scale) indicates that Lime Down A is underlain by no superficial deposits (Figure 3). The underlying bedrock at Lime Down A comprises Forest Marble Formation consisting of mudstone.

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

1.7.3 The closest historical BGS borehole record (BGS Ref: ST88SE9) is located in the centre of Lime Down A (Eastings and Northings: 386700, 184920). The borehole record indicates that the following geology was encountered:

- Clay to 8.8m below ground level (bgl); and
- Blue Stone from 8.8 to 9.7m bgl.

1.7.4 No water strikes were encountered.

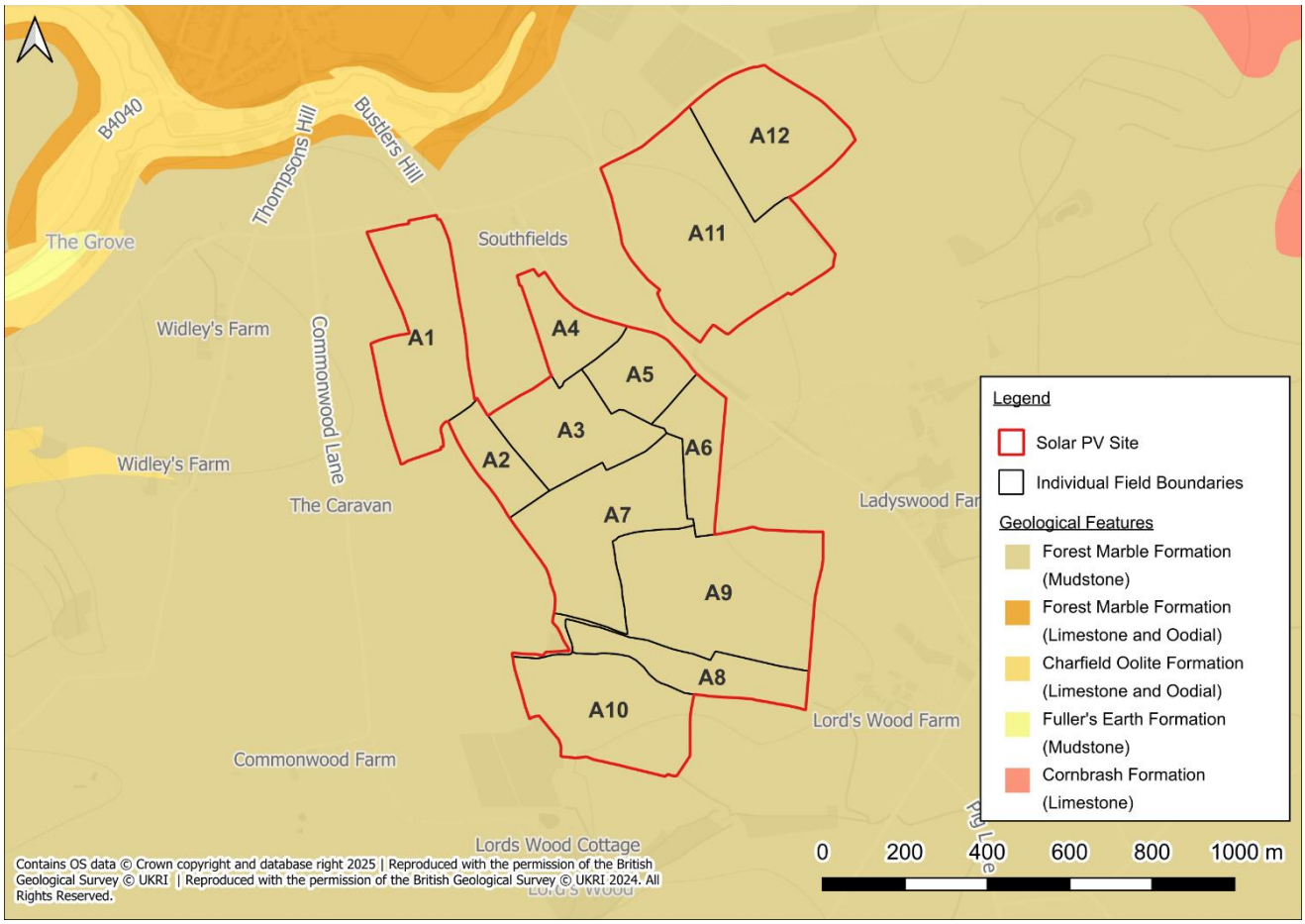


Figure 4: Bedrock Deposits

1.8 Hydrogeology

1.8.1 According to the EA's Aquifer Designation data, obtained from MAGIC Map's online mapping[iii] [accessed 28/05/2025], the Forest Marble Formation is classified as a Principal Aquifer.

1.8.2 The EA's 'Source Protection Zones' data, obtained from MAGIC Map's online mapping [accessed 28/05/2025], indicates that Lime Down A is located wholly within a Groundwater Source Protection Zone. Lime Down A falls within the Source Protection Zone II Subsurface Activity area.

1.9 Proposed Site Conditions

1.9.1 Lime Down A proposes a ground mounted solar photo-voltaic plant and associated electrical infrastructure and access. See Chapter 3: Scheme Description of the ES.

1.9.2 An **Outline Landscape and Ecological Management Plan (Outline 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 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 A.

2.2 Tidal Flood Risk

2.2.1 Lime Down A is situated at a minimum of approximately 108m 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 A 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.

2.3.2 The nearest EA Main River is the River Avon situated approximately 240m north of Lime Down A. There are also two unnamed land drainage ditches that are adjacent to the southern boundary. The River Avon flows in a northeasterly direction towards Malmesbury before flowing in a southerly direction. The two unnamed land drainage ditches flow in a southerly direction.

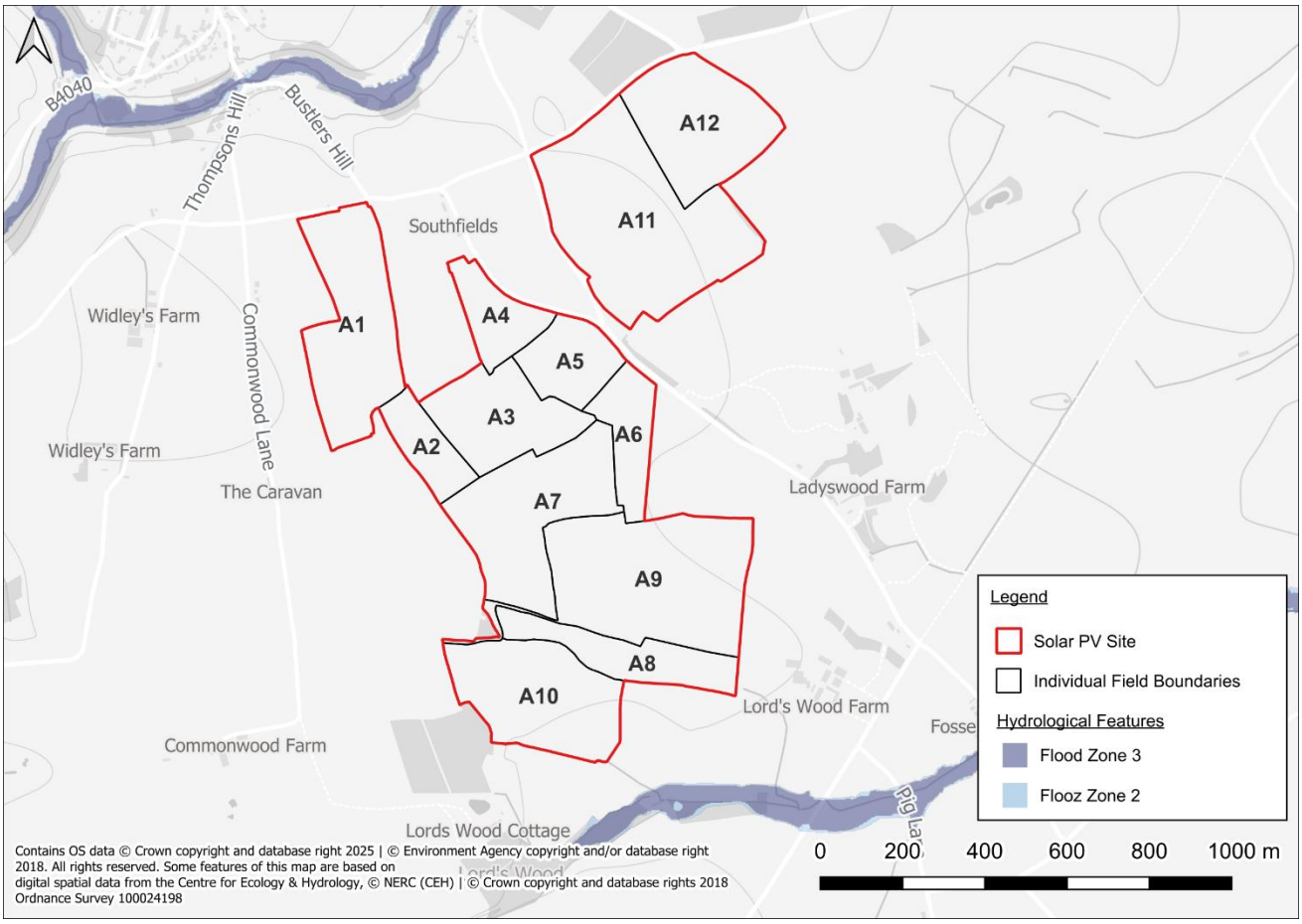


Figure 5: EA's Flood Map for Planning

2.3.3 Fluvial flooding could occur if the land drainage ditches overtopped their banks during or following an extreme rainfall event. However, any out of channel flooding will likely flow to the southeast following local topography.

2.3.4 It is worth noting that the EA Flood Map for Planning extents, which show the potential flood extents of the watercourse south of Lime Down A appear to not cover the whole area. Flow paths identified on the EA's Long Term Flood Risk Map (Surface Water)[v] identify the potential flood extent of the watercourses to the south and the on-Site land drainage ditches. These maps (updated in January 2025) are considered to effectively illustrate the potential extent of fluvial flooding, as illustrated in Figure 5.

2.3.5 The EA 'Historical Flood Map' indicates that there have been no incidents of flooding at Lime Down A. The nearest flood extent is approximately 200m north associated with the River Avon which occurred in 1925.

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

2.3.7 To estimate flood levels for a 1% Annual Exceedance Probability (AEP) event with a 71% climate change allowance[vi], 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. 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.

2.3.8 It is noted that the Manning's calculation was completed prior to the release of updated NaFRA2 mapping in January 2025. 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 A. 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 JFLOW mapping finds that at Lime Down A, there are no flood depth on Site during both the 1% Annual Exceedance Probability scenario and the 0.1% Annual Exceedance Probability scenario, with corresponds with Lime Down A being situated wholly 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 Volume 1, Chapter 11: Hydrology, Flood Risk and Drainage [EN010168/APP/6.1].**

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

Summary

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

2.4 Surface Water Flood Risk

2.4.1 The EA's National Flood Risk Assessment Mapping (NaFRA), known as the Long-Term Flood Risk Map (Surface Water), was updated in January 2025. The NaFRA mapping provides an updated view of surface water flooding across the Site, however it should be noted that at the time of writing, the NaFRA mapping only delivers climate change insight up to the year 2060.

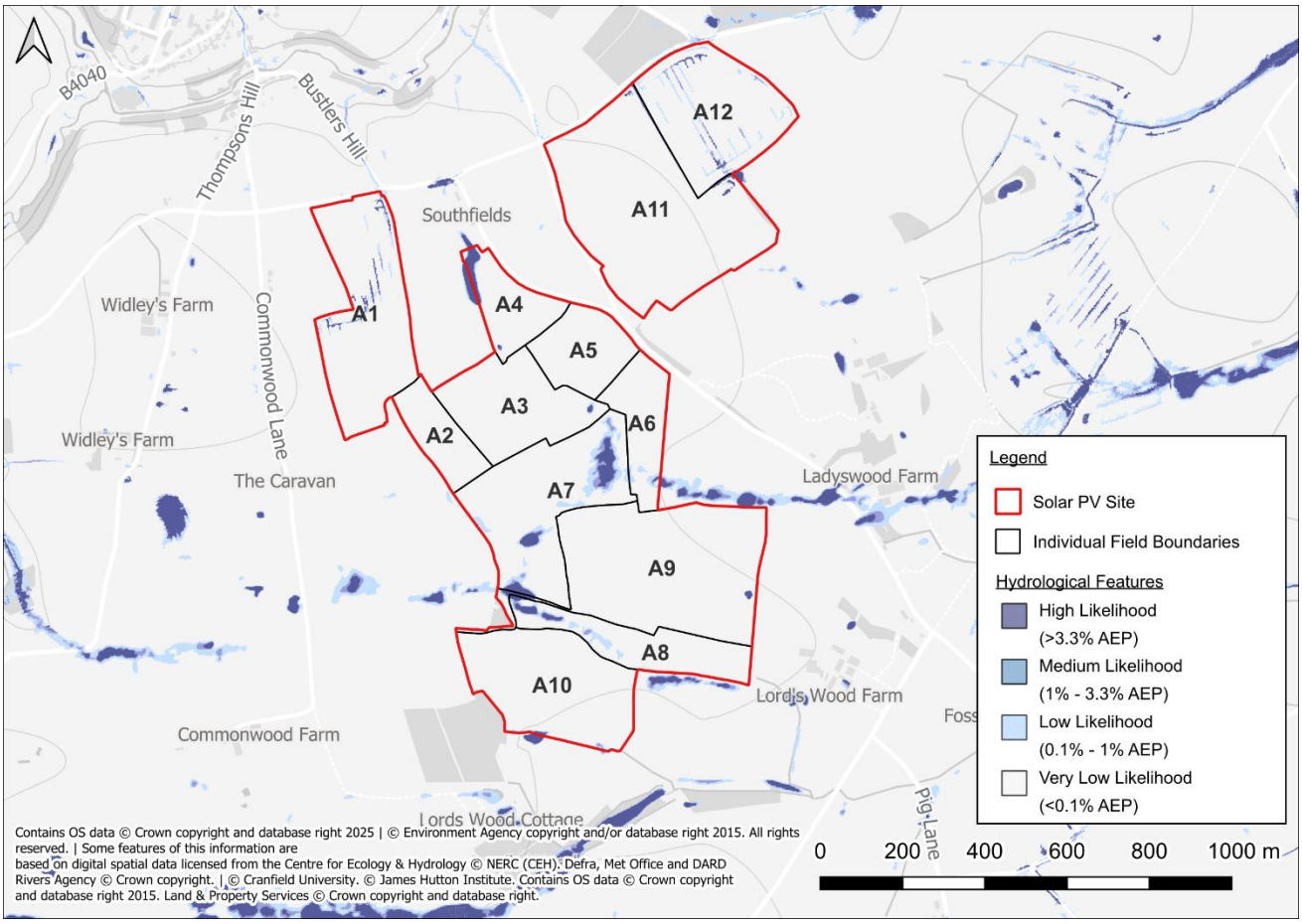


Figure 6: EA's Long-Term Flood Risk Map (Flood Risk from Surface Water)

2.4.2 According to the EA's Long Term Flood Risk Map (Surface Water) the majority of Lime Down A is at Very Low risk of surface water flooding, meaning it has a <0.1% annual probability of flooding. However, there are areas of Low to High risk (0.1 - >3.3% annual chance of flooding), particularly across Fields A4, and A6 – A9.

2.4.3 As described in the fluvial section above, the surface water flooding extents largely match the courses of the unnamed land drainage ditches which flow adjacent to the southern boundary.

2.4.4 Depths are predicted to remain below 300mm during all scenarios across the majority of Lime Down A, with some very small, isolated areas in Fields A1 and A12 expected to reach depths between 300mm – 600mm. Depths of below 300mm are considered passible by vehicles and people, therefore Lime Down

A is deemed passible.

2.4.5 There is no indication within relevant third-party reports (listed in 'Sources of Information' on the main body of **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3]**) to suggest that Lime Down A has historically experienced surface water flooding.

2.4.6 Based on the above and considering the embedded mitigation as part of the design of the solar panels, 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.

2.4.7 In addition to the solar panels, 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 outlined in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3].**

2.4.8 The impact of the Scheme on surface water risk is covered in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3]** to ensure that surface water risk is not exacerbated through appropriate Sustainable Drainage Systems (SuDS) measures.

2.5 Groundwater Flood Risk

2.5.1 The geology is identified above in Section 1.0.

2.5.2 There is no information within relevant third party reports (listed 'Sources of Information' on the Covering Report) to suggest that Lime Down A has experienced historical groundwater flooding.

2.5.3 The 2019 Wiltshire Strategic Flood Risk Assessment (SFRA) Data Explorer Map[vii] indicates that Lime Down A is within an area of no risk of groundwater flooding.

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

2.5.5 It can be concluded that the risk of groundwater flooding is **Low** and no 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 A's rural setting, the presence of sewerage infrastructure is unlikely. Utility records have been checked, and no public sewers are identified as within Lime Down A.

2.6.3 It can therefore be concluded that the risk of sewer flooding is **Negligible**, therefore, no 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 A and, therefore, there is Negligible associated risk.

2.7.2 The EA 'Flood Risk from Reservoirs' map shows that Lime Down A 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, therefore, no Site-specific mitigation measures are required.

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 A. 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 further mitigation beyond what is proposed 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 A can be managed through the implementation of an appropriate Outline CEMP 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 A 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]**.

2.11 Impact on Off-Site Flood Risk

2.11.1 The solar 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: Flood Risk Assessment and Drainage Strategy – Lime Down D and Lime Down E2 [EN010168/APP/6.3]**. The components are insignificant in size with detailed dimensions provided in **ES Volume 1, Chapter 3: The Scheme [EN010168/APP/6.1]**. 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

3.1.1 Lime Down A comprises land for a ground mounted Solar PV Panels and associated Scheme including internal access tracks, inverters, transformers, cabling and substations.

3.2 Conclusions

Flood Risk

3.2.1 Lime Down A 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.

3.2.2 The majority of Lime Down A is at Very Low risk of surface water flooding; however, there are areas of Very Low to High risk, particularly across Fields A4, and A6 – A9. Depths are associated with the land drainage ditches / watercourses present across / in the vicinity of the Site and largely remain <300mm.

3.2.3 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.

3.2.4 The solar 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. Therefore, there will be no loss of floodplain volume as a result of the Scheme.

3.3 Recommendations

3.3.1 Embedded Mitigation is detailed in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3]**, from which this FRA has informed.

Annexes

Annex A- Water Body Catchment Classifications Summaries

Sherston 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	Poor	Poor	Poor	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	Poor	Poor	Poor	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Invertebrates	High	High	High	Good	2027 - Low Confidence	
Macrophytes and Phytobenthos Combined	Poor	Poor	Poor	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Physio-Chemical Quality Elements	Moderate	Moderate	Good	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Acid Neutralising Capacity	N/A	N/a	N/A	Good	2015	
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	Moderate	Moderate	N/A	Good	2015	
Phosphate	Good	Good	Good	Good	2027	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	
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	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	N/A	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

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 A

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.

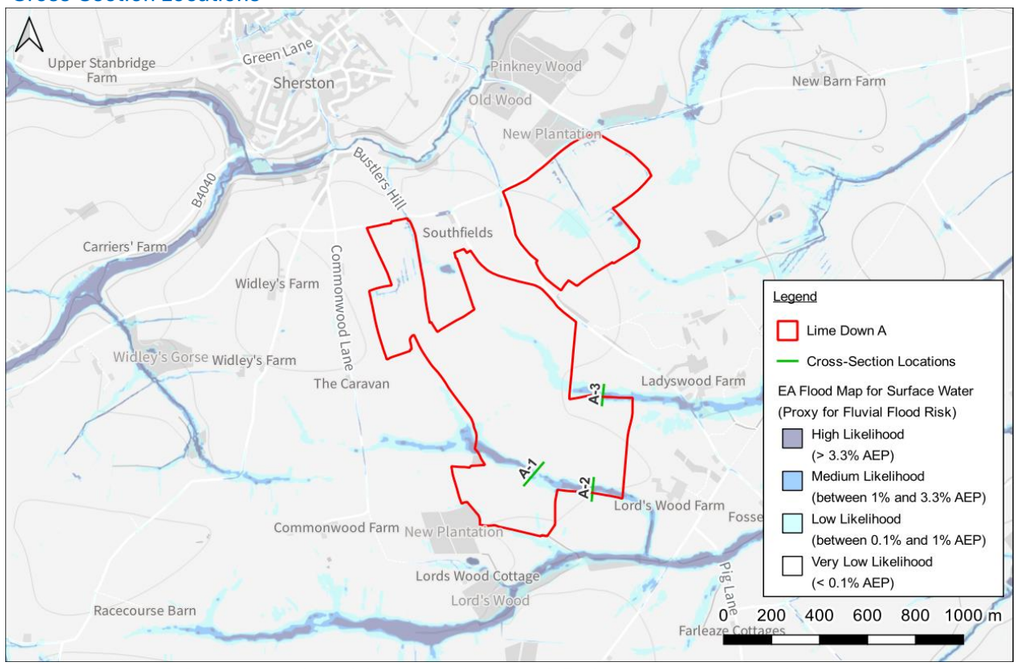
In the absence of detailed flood extent data covering the site, the extents of the EA surface water flood map (0.1% AEP event, present day) have been compared to underlying LiDAR data to provide an estimate of water levels. The surface water flood map has been used as a proxy for fluvial flooding given the similarity to the EA Flood Zone 2 extent and the additional detail it affords.

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)
A-1	0.1% AEP EA FMfSW water level	112.00	9.3	15.9	112.05 (+54mm)
A-2	0.1% AEP EA FMfSW water level	110.80	11.4	19.6	110.91 (+111mm)
A-3	0.1% AEP EA FMfSW water level	108.70	3.6	6.1	108.75 (+54mm)

Tabulated Cross-Section Properties // A-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
A-1	0.000	111.731	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0158
A-1	0.000	111.743	0.011	0.100	0.423	0.004	0.003	0.698	0.700	0.0158
A-1	0.003	111.754	0.023	0.160	0.475	0.016	0.020	1.396	1.400	0.0158
A-1	0.009	111.767	0.036	0.253	0.533	0.036	0.072	1.541	1.547	0.0158
A-1	0.019	111.781	0.049	0.327	0.568	0.057	0.148	1.686	1.694	0.0158
A-1	0.031	111.794	0.063	0.388	0.592	0.080	0.248	1.831	1.841	0.0158
A-1	0.047	111.807	0.076	0.443	0.612	0.105	0.372	1.975	1.989	0.0158
A-1	0.053	111.812	0.081	0.458	0.675	0.117	0.425	2.481	2.495	0.0158
A-1	0.055	111.813	0.082	0.458	0.855	0.120	0.437	4.106	4.121	0.0158
A-1	0.058	111.815	0.084	0.450	0.916	0.129	0.463	5.265	5.280	0.0158
A-1	0.064	111.818	0.087	0.431	0.984	0.148	0.510	7.589	7.605	0.0158
A-1	0.064	111.818	0.087	0.431	0.984	0.148	0.510	7.589	7.605	0.0158
A-1	0.078	111.823	0.092	0.405	0.927	0.192	0.620	9.863	9.880	0.0158
A-1	0.089	111.826	0.095	0.391	0.949	0.227	0.706	13.091	13.109	0.0158
A-1	0.093	111.827	0.096	0.386	0.928	0.240	0.738	13.617	13.635	0.0158
A-1	0.107	111.830	0.099	0.377	0.893	0.284	0.853	15.609	15.627	0.0158
A-1	0.107	111.830	0.099	0.377	0.893	0.284	0.853	15.609	15.627	0.0158
A-1	0.117	111.832	0.101	0.370	0.883	0.317	0.934	17.755	17.775	0.0158
A-1	0.117	111.832	0.101	0.370	0.883	0.317	0.934	17.755	17.775	0.0158
A-1	0.122	111.833	0.102	0.364	0.878	0.336	0.973	19.171	19.191	0.0158
A-1	0.144	111.836	0.105	0.361	0.865	0.398	1.146	22.359	22.380	0.0158
A-1	0.158	111.838	0.107	0.357	0.827	0.444	1.261	23.397	23.418	0.0158
A-1	0.158	111.838	0.107	0.357	0.850	0.444	1.261	24.702	24.723	0.0158
A-1	0.165	111.839	0.108	0.352	0.825	0.469	1.315	25.224	25.246	0.0158
A-1	0.165	111.839	0.108	0.352	0.825	0.469	1.315	25.224	25.246	0.0158
A-1	0.246	111.846	0.115	0.377	0.784	0.654	1.964	27.846	27.868	0.0158
A-1	0.288	111.849	0.118	0.389	0.778	0.740	2.295	28.976	29.000	0.0158
A-1	0.334	111.852	0.121	0.403	0.776	0.828	2.660	30.068	30.092	0.0158
A-1	0.334	111.852	0.121	0.403	0.776	0.828	2.660	30.068	30.092	0.0158
A-1	0.419	111.857	0.126	0.423	0.798	0.990	3.338	34.501	34.526	0.0158
A-1	0.419	111.857	0.126	0.423	0.813	0.990	3.338	35.806	35.831	0.0158
A-1	0.580	111.865	0.134	0.451	0.788	1.287	4.623	38.586	38.614	0.0158
A-1	0.627	111.867	0.136	0.459	0.793	1.366	4.995	39.950	39.979	0.0158
A-1	0.632	111.868	0.137	0.450	0.771	1.406	5.037	40.553	40.582	0.0158
A-1	0.632	111.868	0.137	0.450	0.771	1.406	5.037	40.553	40.582	0.0158
A-1	1.054	111.882	0.151	0.527	0.790	1.998	8.397	44.045	44.077	0.0158
A-1	1.054	111.882	0.151	0.527	0.790	1.998	8.397	44.045	44.077	0.0158
A-1	1.303	111.889	0.158	0.563	0.801	2.313	10.380	45.823	45.857	0.0158

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
A-1	1.383	111.891	0.160	0.575	0.804	2.405	11.019	46.089	46.123	0.0158
A-1	1.868	111.902	0.171	0.640	0.823	2.918	14.883	47.295	47.331	0.0158
A-1	2.060	111.906	0.175	0.662	0.839	3.111	16.415	48.914	48.951	0.0158
A-1	2.110	111.907	0.176	0.668	0.853	3.160	16.809	50.674	50.711	0.0158
A-1	2.210	111.909	0.178	0.677	0.863	3.263	17.613	51.956	51.994	0.0158
A-1	2.422	111.914	0.183	0.687	0.857	3.528	19.298	53.906	53.945	0.0158
A-1	3.200	111.928	0.197	0.746	0.854	4.292	25.501	55.231	55.273	0.0158
A-1	3.331	111.930	0.199	0.757	0.858	4.402	26.539	55.537	55.580	0.0158
A-1	3.463	111.932	0.201	0.767	0.862	4.514	27.593	55.851	55.894	0.0158
A-1	4.149	111.942	0.211	0.816	0.878	5.082	33.057	57.689	57.734	0.0158
A-1	4.660	111.949	0.218	0.849	0.888	5.490	37.130	59.007	59.054	0.0158
A-1	5.126	111.955	0.224	0.877	0.897	5.847	40.842	60.050	60.099	0.0158
A-1	5.528	111.960	0.229	0.899	0.911	6.152	44.050	61.981	62.032	0.0158
A-1	5.947	111.965	0.234	0.920	0.919	6.465	47.390	63.260	63.311	0.0158
A-1	6.383	111.970	0.239	0.941	0.926	6.785	50.859	64.541	64.593	0.0158
A-1	7.356	111.982	0.251	0.972	0.912	7.564	58.611	65.300	65.355	0.0158
A-1	8.611	111.994	0.263	1.031	0.926	8.352	68.616	66.059	66.117	0.0158
A-1	9.270	112.000	0.269	1.059	0.934	8.750	73.866	66.755	66.814	0.0158
A-1	10.148	112.008	0.277	1.092	0.944	9.289	80.865	68.036	68.098	0.0158
A-1	11.065	112.016	0.285	1.125	0.953	9.839	88.167	69.319	69.383	0.0158
A-1	12.174	112.025	0.294	1.163	0.963	10.468	97.003	70.446	70.512	0.0158
A-1	13.332	112.034	0.303	1.200	0.973	11.107	106.231	71.574	71.643	0.0158
A-1	14.675	112.044	0.313	1.241	0.983	11.829	116.934	72.785	72.856	0.0158
A-1	15.078	112.047	0.316	1.252	0.985	12.048	120.147	73.225	73.297	0.0158
A-1	16.041	112.054	0.323	1.277	0.992	12.565	127.819	74.492	74.566	0.0158
A-1	16.761	112.059	0.328	1.295	0.998	12.939	133.555	75.285	75.362	0.0158
A-1	17.202	112.062	0.331	1.307	1.000	13.166	137.072	75.689	75.766	0.0158
A-1	18.624	112.071	0.340	1.345	1.009	13.851	148.398	76.510	76.589	0.0158
A-1	20.095	112.080	0.349	1.382	1.017	14.543	160.121	77.332	77.412	0.0158
A-1	21.958	112.091	0.360	1.426	1.028	15.400	174.966	78.502	78.584	0.0158
A-1	23.359	112.099	0.368	1.457	1.035	16.031	186.130	79.328	79.411	0.0158
A-1	24.801	112.107	0.376	1.488	1.042	16.669	197.621	80.155	80.240	0.0158
A-1	25.181	112.109	0.378	1.496	1.052	16.831	200.646	81.609	81.693	0.0158
A-1	25.372	112.110	0.379	1.500	1.053	16.913	202.166	81.735	81.820	0.0158
A-1	25.372	112.110	0.379	1.500	1.053	16.913	202.166	81.735	81.820	0.0158
A-1	26.532	112.116	0.385	1.524	1.073	17.412	211.415	84.754	84.840	0.0158
A-1	26.925	112.118	0.387	1.531	1.078	17.582	214.545	85.470	85.556	0.0158
A-1	28.528	112.126	0.395	1.561	1.090	18.274	227.318	87.322	87.409	0.0158
A-1	30.179	112.134	0.403	1.590	1.100	18.980	240.473	89.173	89.262	0.0158
A-1	30.179	112.134	0.403	1.590	1.100	18.980	240.473	89.173	89.262	0.0158
A-1	30.385	112.135	0.404	1.593	1.110	19.070	242.112	90.846	90.935	0.0158
A-1	31.230	112.139	0.408	1.607	1.122	19.437	248.844	92.968	93.058	0.0158
A-1	31.444	112.140	0.409	1.610	1.124	19.530	250.548	93.315	93.405	0.0158
A-1	32.075	112.143	0.412	1.619	1.135	19.813	255.576	95.579	95.670	0.0158
A-1	32.075	112.143	0.412	1.619	1.135	19.813	255.576	95.579	95.670	0.0158
A-1	34.497	112.154	0.423	1.652	1.144	20.879	274.881	98.174	98.266	0.0158
A-1	34.959	112.156	0.425	1.659	1.144	21.076	278.559	98.336	98.428	0.0158
A-1	38.528	112.171	0.440	1.708	1.146	22.561	306.999	99.704	99.798	0.0158
A-1	42.293	112.186	0.455	1.758	1.145	24.060	336.998	100.175	100.271	0.0158
A-1	46.239	112.201	0.470	1.809	1.146	25.567	368.443	100.646	100.744	0.0158
A-1	50.358	112.216	0.485	1.860	1.147	27.080	401.262	101.117	101.217	0.0158
A-1	51.202	112.219	0.488	1.870	1.157	27.386	407.988	102.951	103.052	0.0158
A-1	52.838	112.225	0.494	1.887	1.160	28.006	421.023	103.846	103.948	0.0158
A-1	56.753	112.238	0.507	1.931	1.161	29.394	452.221	104.338	104.441	0.0158
A-1	60.803	112.252	0.521	1.975	1.163	30.788	484.489	104.828	104.933	0.0158
A-1	64.989	112.265	0.534	2.019	1.166	32.189	517.846	105.320	105.426	0.0158
A-1	68.530	112.276	0.545	2.055	1.169	33.351	546.057	105.940	106.048	0.0158
A-1	72.160	112.287	0.556	2.090	1.173	34.520	574.985	106.561	106.670	0.0158
A-1	73.165	112.290	0.559	2.100	1.181	34.842	582.993	108.205	108.315	0.0158
A-1	76.475	112.300	0.569	2.129	1.183	35.928	609.370	108.815	108.926	0.0158
A-1	79.959	112.310	0.579	2.160	1.186	37.018	637.132	109.424	109.536	0.0158
A-1	84.560	112.323	0.592	2.199	1.192	38.450	673.791	110.784	110.898	0.0158
A-1	87.417	112.331	0.600	2.222	1.198	39.342	696.559	112.123	112.237	0.0158
A-1	93.007	112.346	0.615	2.267	1.204	41.034	741.101	113.491	113.607	0.0158
A-1	97.205	112.357	0.626	2.299	1.208	42.289	774.544	114.641	114.759	0.0158
A-1	97.975	112.359	0.628	2.304	1.209	42.518	780.682	114.861	114.979	0.0158
A-1	100.638	112.366	0.635	2.323	1.215	43.326	801.903	116.233	116.351	0.0158
A-1	104.654	112.376	0.645	2.352	1.217	44.492	833.900	116.811	116.931	0.0158
A-1	108.127	112.384	0.653	2.377	1.225	45.492	861.573	118.540	118.660	0.0158
A-1	111.657	112.393	0.662	2.401	1.233	46.507	889.705	120.268	120.389	0.0158
A-1	112.245	112.395	0.664	2.401	1.230	46.747	894.389	120.425	120.545	0.0158
A-1	115.841	112.404	0.673	2.425	1.233	47.775	923.043	121.159	121.280	0.0158
A-1	119.491	112.412	0.681	2.448	1.235	48.808	952.126	121.892	122.013	0.0158
A-1	124.802	112.424	0.693	2.482	1.237	50.274	994.444	122.441	122.564	0.0158
A-1	130.222	112.436	0.705	2.517	1.239	51.746	1037.632	122.990	123.113	0.0158
A-1	135.757	112.448	0.717	2.551	1.241	53.225	1081.738	123.540	123.664	0.0158
A-1	136.229	112.449	0.718	2.554	1.241	53.349	1085.499	123.549	123.673	0.0158
A-1	143.407	112.464	0.733	2.598	1.244	55.206	1142.694	124.127	124.252	0.0158
A-1	150.766	112.479	0.748	2.642	1.247	57.073	1201.330	124.705	124.831	0.0158
A-1	158.297	112.494	0.763	2.685	1.250	58.948	1261.340	125.283	125.410	0.0158

Tabulated Cross-Section Properties // A-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
A-2	0.000	110.240	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0028
A-2	0.000	110.258	0.018	0.057	0.192	0.004	0.004	0.413	0.416	0.0028
A-2	0.001	110.276	0.036	0.091	0.215	0.015	0.025	0.827	0.832	0.0028
A-2	0.004	110.294	0.054	0.119	0.230	0.033	0.075	1.240	1.248	0.0028
A-2	0.008	110.311	0.071	0.141	0.241	0.058	0.155	1.649	1.659	0.0028
A-2	0.015	110.328	0.088	0.163	0.249	0.090	0.276	2.058	2.070	0.0028
A-2	0.023	110.345	0.105	0.183	0.257	0.128	0.443	2.467	2.482	0.0028
A-2	0.035	110.362	0.122	0.203	0.263	0.173	0.664	2.876	2.893	0.0028
A-2	0.050	110.379	0.139	0.221	0.269	0.226	0.944	3.284	3.304	0.0028
A-2	0.068	110.396	0.156	0.239	0.275	0.285	1.287	3.693	3.715	0.0028
A-2	0.094	110.416	0.176	0.259	0.280	0.364	1.779	4.182	4.207	0.0028
A-2	0.126	110.436	0.196	0.278	0.285	0.452	2.375	4.671	4.699	0.0028
A-2	0.131	110.439	0.199	0.280	0.297	0.467	2.475	5.140	5.168	0.0028

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
A-2	0.136	110.442	0.202	0.282	0.315	0.484	2.578	5.937	5.966	0.0028
A-2	0.138	110.443	0.203	0.282	0.327	0.490	2.614	6.441	6.470	0.0028
A-2	0.144	110.446	0.206	0.281	0.378	0.513	2.726	9.093	9.123	0.0028
A-2	0.144	110.446	0.206	0.281	0.378	0.513	2.726	9.093	9.123	0.0028
A-2	0.147	110.447	0.207	0.281	0.384	0.522	2.774	9.583	9.613	0.0028
A-2	0.155	110.450	0.210	0.279	0.418	0.555	2.926	12.221	12.251	0.0028
A-2	0.155	110.450	0.210	0.279	0.418	0.555	2.926	12.221	12.251	0.0028
A-2	0.158	110.451	0.211	0.278	0.422	0.568	2.981	12.831	12.861	0.0028
A-2	0.181	110.458	0.218	0.272	0.421	0.668	3.426	15.729	15.761	0.0028
A-2	0.193	110.461	0.221	0.269	0.417	0.717	3.648	16.845	16.877	0.0028
A-2	0.197	110.462	0.222	0.269	0.417	0.734	3.726	17.302	17.334	0.0028
A-2	0.201	110.463	0.223	0.268	0.417	0.751	3.806	17.822	17.855	0.0028
A-2	0.210	110.465	0.225	0.266	0.428	0.789	3.973	19.989	20.023	0.0028
A-2	0.215	110.466	0.226	0.265	0.426	0.809	4.057	20.505	20.539	0.0028
A-2	0.230	110.469	0.229	0.263	0.419	0.873	4.341	21.751	21.785	0.0028
A-2	0.235	110.470	0.230	0.262	0.418	0.895	4.436	22.303	22.338	0.0028
A-2	0.263	110.475	0.235	0.260	0.405	1.010	4.965	24.017	24.052	0.0028
A-2	0.269	110.476	0.236	0.260	0.402	1.035	5.088	24.215	24.250	0.0028
A-2	0.283	110.478	0.238	0.261	0.397	1.083	5.345	24.608	24.643	0.0028
A-2	0.297	110.480	0.240	0.262	0.393	1.133	5.612	25.020	25.056	0.0028
A-2	0.304	110.481	0.241	0.262	0.393	1.158	5.737	25.503	25.539	0.0028
A-2	0.317	110.483	0.243	0.262	0.392	1.210	5.995	26.550	26.587	0.0028
A-2	0.374	110.490	0.250	0.266	0.385	1.404	7.060	28.872	28.910	0.0028
A-2	0.389	110.492	0.252	0.266	0.380	1.462	7.358	29.177	29.216	0.0028
A-2	0.480	110.501	0.261	0.277	0.371	1.731	9.066	30.484	30.524	0.0028
A-2	0.513	110.504	0.264	0.281	0.375	1.824	9.687	31.801	31.842	0.0028
A-2	0.523	110.505	0.265	0.282	0.376	1.856	9.892	32.324	32.365	0.0028
A-2	0.546	110.507	0.267	0.284	0.383	1.923	10.313	34.385	34.426	0.0028
A-2	0.560	110.509	0.269	0.281	0.381	1.994	10.587	36.032	36.074	0.0028
A-2	0.560	110.509	0.269	0.281	0.381	1.994	10.587	36.032	36.074	0.0028
A-2	0.564	110.510	0.270	0.278	0.375	2.030	10.650	36.255	36.297	0.0028
A-2	0.642	110.516	0.276	0.285	0.372	2.251	12.130	37.594	37.638	0.0028
A-2	0.681	110.519	0.279	0.288	0.372	2.366	12.861	38.768	38.811	0.0028
A-2	0.888	110.531	0.291	0.311	0.368	2.853	16.790	39.169	39.215	0.0028
A-2	1.126	110.544	0.304	0.337	0.370	3.345	21.279	39.571	39.619	0.0028
A-2	1.487	110.561	0.321	0.370	0.374	4.025	28.110	40.445	40.495	0.0028
A-2	1.580	110.565	0.325	0.377	0.380	4.190	29.851	41.737	41.788	0.0028
A-2	1.967	110.581	0.341	0.405	0.380	4.860	37.174	42.101	42.155	0.0028
A-2	2.417	110.597	0.357	0.436	0.386	5.537	45.671	42.465	42.522	0.0028
A-2	2.907	110.613	0.373	0.467	0.392	6.219	54.928	42.829	42.888	0.0028
A-2	3.167	110.622	0.382	0.479	0.394	6.609	59.846	43.868	43.929	0.0028
A-2	3.768	110.639	0.399	0.511	0.400	7.382	71.217	44.431	44.494	0.0028
A-2	4.416	110.657	0.417	0.541	0.405	8.164	83.454	44.994	45.060	0.0028
A-2	4.814	110.667	0.427	0.557	0.408	8.639	90.972	45.533	45.601	0.0028
A-2	5.228	110.678	0.438	0.573	0.411	9.120	98.793	46.072	46.142	0.0028
A-2	5.679	110.689	0.449	0.590	0.414	9.630	107.326	46.613	46.685	0.0028
A-2	6.148	110.700	0.460	0.606	0.417	10.146	116.190	47.154	47.228	0.0028
A-2	6.683	110.712	0.472	0.624	0.420	10.715	126.298	47.699	47.774	0.0028
A-2	7.238	110.724	0.484	0.641	0.423	11.291	136.790	48.244	48.321	0.0028
A-2	8.079	110.741	0.501	0.667	0.427	12.115	152.681	48.805	48.885	0.0028
A-2	8.386	110.747	0.507	0.676	0.431	12.411	158.479	49.635	49.716	0.0028
A-2	8.962	110.758	0.518	0.691	0.441	12.969	169.370	51.840	51.923	0.0028
A-2	8.962	110.758	0.518	0.691	0.441	12.969	169.370	51.840	51.923	0.0028
A-2	9.231	110.763	0.523	0.698	0.444	13.230	174.440	52.634	52.719	0.0028
A-2	9.558	110.769	0.529	0.705	0.448	13.549	180.627	53.689	53.775	0.0028
A-2	9.724	110.772	0.532	0.709	0.451	13.712	183.772	54.435	54.522	0.0028
A-2	9.724	110.772	0.532	0.709	0.451	13.712	183.772	54.435	54.522	0.0028
A-2	9.892	110.775	0.535	0.713	0.456	13.877	186.939	55.724	55.811	0.0028
A-2	10.061	110.778	0.538	0.716	0.462	14.046	190.139	57.272	57.361	0.0028
A-2	10.119	110.779	0.539	0.717	0.464	14.104	191.224	57.852	57.941	0.0028
A-2	10.886	110.792	0.552	0.731	0.479	14.887	205.723	62.704	62.795	0.0028
A-2	10.947	110.793	0.553	0.732	0.480	14.950	206.875	63.075	63.165	0.0028
A-2	11.131	110.796	0.556	0.735	0.482	15.141	210.349	63.919	64.010	0.0028
A-2	11.255	110.798	0.558	0.737	0.483	15.269	212.697	64.311	64.402	0.0028
A-2	11.255	110.798	0.558	0.737	0.483	15.269	212.697	64.311	64.402	0.0028
A-2	11.442	110.801	0.561	0.740	0.483	15.462	216.231	64.640	64.732	0.0028
A-2	12.350	110.815	0.575	0.754	0.483	16.377	233.396	66.025	66.117	0.0028
A-2	13.300	110.829	0.589	0.768	0.485	17.314	251.337	67.803	67.897	0.0028
A-2	13.369	110.830	0.590	0.769	0.485	17.382	252.641	67.933	68.026	0.0028
A-2	13.647	110.834	0.594	0.773	0.491	17.658	257.902	70.035	70.129	0.0028
A-2	13.858	110.837	0.597	0.776	0.494	17.869	261.896	71.107	71.201	0.0028
A-2	13.858	110.837	0.597	0.776	0.494	17.869	261.896	71.107	71.201	0.0028
A-2	14.495	110.846	0.606	0.783	0.493	18.514	273.923	72.131	72.225	0.0028
A-2	14.709	110.849	0.609	0.785	0.496	18.732	277.975	73.229	73.323	0.0028
A-2	15.778	110.863	0.623	0.798	0.494	19.764	298.168	74.258	74.353	0.0028
A-2	16.468	110.872	0.632	0.806	0.493	20.436	311.217	75.031	75.127	0.0028
A-2	17.248	110.882	0.642	0.814	0.494	21.194	325.965	76.461	76.556	0.0028
A-2	17.649	110.887	0.647	0.818	0.494	21.577	333.538	77.059	77.154	0.0028
A-2	18.348	110.895	0.655	0.827	0.494	22.197	346.744	77.794	77.889	0.0028
A-2	19.800	110.911	0.671	0.844	0.495	23.451	374.176	78.917	79.014	0.0028
A-2	19.892	110.912	0.672	0.845	0.498	23.530	375.927	80.249	80.345	0.0028
A-2	19.985	110.913	0.673	0.846	0.502	23.611	377.683	81.580	81.677	0.0028
A-2	20.102	110.915	0.675	0.846	0.502	23.775	379.886	82.113	82.210	0.0028
A-2	20.463	110.919	0.679	0.849	0.503	24.105	386.714	83.179	83.275	0.0028
A-2	22.403	110.938	0.699	0.871	0.501	25.730	423.370	83.456	83.553	0.0028
A-2	24.438	110.958	0.718	0.893	0.499	27.360	461.832	83.733	83.831	0.0028
A-2	26.403	110.977	0.737	0.913	0.497	28.913	498.962	84.188	84.287	0.0028
A-2	28.448	110.995	0.755	0.933	0.497	30.475	537.626	84.644	84.742	0.0028
A-2	28.901	110.999	0.759	0.938	0.497	30.814	546.179	85.015	85.114	0.0028
A-2	30.942	111.017	0.777	0.956	0.500	32.361	584.753	86.830	86.930	0.0028
A-2	31.875	111.025	0.785	0.964	0.503	33.061	602.377	88.279	88.379	0.0028
A-2	32.465	111.030	0.790	0.969	0.504	33.504	613.540	88.914	89.014	0.0028
A-2	33.312	111.039	0.799	0.971	0.504	34.313	629.545	90.773	90.873	0.0028
A-2	33.445	111.040	0.800	0.972	0.504	34.404	632.053	90.795	90.896	0.0028
A-2	34.922	111.051	0.811	0.986	0.506	35.405	659.957	91.299	91.400	0.0028
A-2	36.431	111.062	0.822	1.001	0.507	36.412	688.476	91.804	91.905	0.0028
A-2	38.874	111.079	0.839	1.023	0.508	38.006	734.646	92.140	92.242	0.0028
A-2	41.393	111.097	0.857	1.045	0.510	39.606	782.255	92.477	92.579	0.0028
A-2	43.987	111.114	0.874	1.067	0.511	41.212	831.282	92.813	92.915	0.0028

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
A-2	46.604	111.131	0.891	1.089	0.513	42.792	880.739	93.065	93.168	0.0028
A-2	49.292	111.148	0.908	1.111	0.514	44.376	931.523	93.317	93.421	0.0028
A-2	52.049	111.165	0.925	1.132	0.516	45.965	983.640	93.569	93.673	0.0028
A-2	54.874	111.182	0.942	1.154	0.517	47.558	1037.029	93.821	93.926	0.0028
A-2	57.534	111.198	0.958	1.173	0.519	49.030	1087.283	94.157	94.262	0.0028
A-2	60.252	111.213	0.973	1.193	0.521	50.508	1138.647	94.494	94.599	0.0028
A-2	63.025	111.229	0.989	1.212	0.523	51.991	1191.064	94.830	94.936	0.0028
A-2	65.359	111.242	1.002	1.228	0.525	53.227	1235.163	95.334	95.440	0.0028
A-2	67.732	111.255	1.015	1.243	0.527	54.470	1280.021	95.839	95.945	0.0028

Tabulated Cross-Section Properties // A-3

(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
A-3	0.000	108.253	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0076
A-3	0.000	108.265	0.012	0.073	0.296	0.001	0.001	0.226	0.227	0.0076
A-3	0.001	108.278	0.025	0.116	0.333	0.006	0.007	0.451	0.454	0.0076
A-3	0.002	108.290	0.037	0.152	0.356	0.013	0.022	0.677	0.681	0.0076
A-3	0.004	108.302	0.049	0.184	0.373	0.022	0.047	0.902	0.908	0.0076
A-3	0.007	108.315	0.062	0.214	0.388	0.035	0.086	1.128	1.135	0.0076
A-3	0.012	108.327	0.074	0.241	0.400	0.050	0.139	1.353	1.362	0.0076
A-3	0.018	108.340	0.087	0.267	0.410	0.068	0.210	1.579	1.589	0.0076
A-3	0.026	108.352	0.099	0.292	0.419	0.089	0.300	1.805	1.816	0.0076
A-3	0.037	108.365	0.112	0.321	0.429	0.114	0.420	2.004	2.017	0.0076
A-3	0.049	108.378	0.125	0.347	0.438	0.141	0.564	2.204	2.218	0.0076
A-3	0.063	108.390	0.137	0.373	0.445	0.170	0.728	2.380	2.396	0.0076
A-3	0.080	108.403	0.150	0.397	0.452	0.201	0.916	2.556	2.574	0.0076
A-3	0.098	108.415	0.162	0.420	0.459	0.234	1.128	2.732	2.751	0.0076
A-3	0.119	108.428	0.175	0.442	0.465	0.269	1.366	2.908	2.929	0.0076
A-3	0.142	108.440	0.187	0.464	0.470	0.306	1.631	3.084	3.107	0.0076
A-3	0.167	108.453	0.200	0.485	0.475	0.345	1.924	3.260	3.285	0.0076
A-3	0.195	108.465	0.212	0.505	0.480	0.387	2.246	3.436	3.463	0.0076
A-3	0.226	108.478	0.225	0.524	0.485	0.431	2.597	3.612	3.641	0.0076
A-3	0.259	108.490	0.237	0.544	0.489	0.477	2.980	3.788	3.818	0.0076
A-3	0.282	108.497	0.244	0.557	0.532	0.506	3.238	4.541	4.572	0.0076
A-3	0.292	108.500	0.247	0.559	0.603	0.522	3.354	5.955	5.986	0.0076
A-3	0.340	108.512	0.259	0.567	0.591	0.599	3.905	6.390	6.422	0.0076
A-3	0.395	108.525	0.272	0.580	0.586	0.682	4.544	6.825	6.859	0.0076
A-3	0.400	108.526	0.273	0.581	0.586	0.688	4.598	6.860	6.893	0.0076
A-3	0.435	108.533	0.280	0.587	0.615	0.740	4.998	7.973	8.007	0.0076
A-3	0.461	108.538	0.285	0.589	0.635	0.783	5.296	8.925	8.959	0.0076
A-3	0.500	108.545	0.292	0.588	0.665	0.851	5.752	10.675	10.710	0.0076
A-3	0.532	108.550	0.297	0.587	0.666	0.907	6.114	11.472	11.508	0.0076
A-3	0.539	108.551	0.298	0.587	0.666	0.918	6.191	11.616	11.652	0.0076
A-3	0.636	108.564	0.311	0.589	0.656	1.079	7.305	13.145	13.183	0.0076
A-3	0.711	108.573	0.320	0.591	0.660	1.205	8.177	14.733	14.772	0.0076
A-3	0.798	108.582	0.329	0.597	0.636	1.338	9.174	14.921	14.961	0.0076
A-3	0.902	108.591	0.338	0.611	0.638	1.476	10.370	15.774	15.815	0.0076
A-3	1.016	108.600	0.347	0.626	0.640	1.622	11.675	16.627	16.669	0.0076
A-3	1.055	108.603	0.350	0.631	0.656	1.673	12.130	17.749	17.792	0.0076
A-3	1.069	108.604	0.351	0.632	0.656	1.691	12.288	17.838	17.881	0.0076
A-3	1.126	108.608	0.355	0.638	0.672	1.766	12.936	19.270	19.313	0.0076
A-3	1.155	108.610	0.357	0.639	0.697	1.806	13.271	21.066	21.109	0.0076
A-3	1.215	108.614	0.361	0.642	0.699	1.892	13.968	21.974	22.018	0.0076
A-3	1.263	108.617	0.364	0.645	0.702	1.959	14.515	22.784	22.829	0.0076
A-3	1.329	108.621	0.368	0.647	0.712	2.053	15.277	24.394	24.440	0.0076
A-3	1.363	108.623	0.370	0.648	0.719	2.103	15.670	25.414	25.460	0.0076
A-3	1.363	108.623	0.370	0.648	0.719	2.103	15.670	25.414	25.460	0.0076
A-3	1.396	108.625	0.372	0.648	0.726	2.155	16.046	26.517	26.564	0.0076
A-3	1.465	108.629	0.376	0.647	0.725	2.264	16.842	27.892	27.939	0.0076
A-3	1.577	108.635	0.382	0.647	0.722	2.437	18.123	29.788	29.836	0.0076
A-3	1.636	108.638	0.385	0.647	0.720	2.528	18.801	30.731	30.779	0.0076
A-3	1.715	108.642	0.389	0.647	0.714	2.653	19.715	31.724	31.773	0.0076
A-3	1.836	108.647	0.394	0.653	0.708	2.813	21.102	32.438	32.487	0.0076
A-3	1.861	108.648	0.395	0.654	0.706	2.846	21.390	32.543	32.593	0.0076
A-3	2.180	108.660	0.407	0.671	0.697	3.247	25.054	34.292	34.343	0.0076
A-3	2.180	108.660	0.407	0.671	0.707	3.247	25.054	35.299	35.350	0.0076
A-3	2.259	108.663	0.410	0.674	0.704	3.353	25.958	35.916	35.967	0.0076
A-3	2.376	108.667	0.414	0.679	0.704	3.499	27.303	36.863	36.915	0.0076
A-3	2.467	108.670	0.417	0.683	0.703	3.610	28.351	37.519	37.571	0.0076
A-3	2.529	108.672	0.419	0.686	0.705	3.686	29.066	38.223	38.275	0.0076
A-3	2.623	108.675	0.422	0.690	0.708	3.803	30.148	39.294	39.346	0.0076
A-3	2.682	108.677	0.424	0.691	0.714	3.883	30.819	40.761	40.814	0.0076
A-3	2.715	108.678	0.425	0.692	0.715	3.924	31.199	41.083	41.136	0.0076
A-3	2.886	108.683	0.430	0.698	0.715	4.132	33.171	42.523	42.577	0.0076
A-3	3.066	108.688	0.435	0.705	0.715	4.349	35.240	43.858	43.912	0.0076
A-3	3.246	108.693	0.440	0.710	0.707	4.569	37.300	44.455	44.509	0.0076
A-3	3.364	108.696	0.443	0.715	0.714	4.705	38.666	45.999	46.054	0.0076
A-3	3.405	108.697	0.444	0.717	0.724	4.752	39.129	47.548	47.603	0.0076
A-3	3.528	108.700	0.447	0.721	0.724	4.896	40.546	48.419	48.475	0.0076
A-3	3.528	108.700	0.447	0.721	0.724	4.896	40.546	48.419	48.475	0.0076
A-3	3.570	108.701	0.448	0.722	0.730	4.944	41.034	49.626	49.681	0.0076
A-3	3.570	108.701	0.448	0.722	0.730	4.944	41.034	49.626	49.681	0.0076
A-3	3.867	108.708	0.455	0.730	0.729	5.300	44.437	51.858	51.914	0.0076
A-3	3.867	108.708	0.455	0.730	0.729	5.300	44.437	51.858	51.914	0.0076
A-3	4.135	108.714	0.461	0.736	0.728	5.617	47.520	53.921	53.978	0.0076
A-3	4.604	108.723	0.470	0.751	0.717	6.134	52.908	54.911	54.969	0.0076
A-3	5.123	108.733	0.480	0.769	0.711	6.661	58.872	55.902	55.960	0.0076
A-3	5.123	108.733	0.480	0.769	0.711	6.661	58.872	55.902	55.960	0.0076
A-3	5.346	108.737	0.484	0.776	0.711	6.886	61.442	56.707	56.766	0.0076
A-3	5.404	108.738	0.485	0.778	0.714	6.943	62.104	57.377	57.436	0.0076
A-3	5.462	108.739	0.486	0.780	0.724	7.001	62.772	59.145	59.204	0.0076
A-3	5.520	108.740	0.487	0.782	0.724	7.060	63.445	59.404	59.463	0.0076
A-3	5.820	108.745	0.492	0.790	0.730	7.363	66.890	61.617	61.676	0.0076
A-3	5.943	108.747	0.494	0.794	0.733	7.487	68.298	62.557	62.616	0.0076
A-3	6.039	108.749	0.496	0.793	0.729	7.613	69.404	63.066	63.125	0.0076
A-3	6.364	108.754	0.501	0.802	0.729	7.931	73.139	64.194	64.255	0.0076
A-3	7.123	108.765	0.512	0.824	0.727	8.647	81.868	66.099	66.160	0.0076

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
A-3	7.123	108.765	0.512	0.824	0.733	8.647	81.868	67.106	67.167	0.0076
A-3	7.580	108.771	0.518	0.837	0.731	9.052	87.120	67.704	67.765	0.0076
A-3	8.302	108.780	0.527	0.859	0.730	9.664	95.409	68.429	68.490	0.0076
A-3	8.804	108.786	0.533	0.873	0.737	10.082	101.177	70.524	70.585	0.0076
A-3	8.889	108.787	0.534	0.876	0.743	10.153	102.155	71.712	71.773	0.0076
A-3	8.974	108.788	0.535	0.878	0.748	10.225	103.140	72.900	72.962	0.0076
A-3	9.147	108.790	0.537	0.882	0.749	10.371	105.129	73.358	73.420	0.0076
A-3	9.666	108.796	0.543	0.894	0.746	10.813	111.091	73.887	73.949	0.0076
A-3	10.298	108.803	0.550	0.909	0.747	11.335	118.350	75.230	75.292	0.0076
A-3	10.582	108.806	0.553	0.915	0.747	11.561	121.621	75.495	75.557	0.0076
A-3	10.871	108.809	0.556	0.922	0.753	11.789	124.942	77.041	77.103	0.0076
A-3	11.654	108.817	0.564	0.939	0.752	12.410	133.939	78.096	78.158	0.0076
A-3	12.801	108.828	0.575	0.964	0.751	13.274	147.120	78.885	78.947	0.0076
A-3	13.666	108.836	0.583	0.983	0.751	13.907	157.058	79.640	79.702	0.0076
A-3	14.562	108.844	0.591	1.001	0.751	14.548	167.359	80.395	80.458	0.0076
A-3	14.790	108.846	0.593	1.006	0.752	14.709	169.975	80.613	80.675	0.0076
A-3	15.135	108.849	0.596	1.012	0.757	14.953	173.941	82.114	82.177	0.0076
A-3	16.053	108.857	0.604	1.028	0.758	15.614	184.494	83.182	83.245	0.0076
A-3	16.923	108.864	0.611	1.045	0.758	16.198	194.492	83.573	83.636	0.0076
A-3	18.081	108.873	0.620	1.067	0.758	16.951	207.804	83.909	83.972	0.0076
A-3	19.277	108.882	0.629	1.089	0.758	17.708	221.546	84.244	84.308	0.0076
A-3	20.512	108.891	0.638	1.111	0.759	18.468	235.734	84.580	84.644	0.0076
A-3	21.183	108.896	0.643	1.121	0.762	18.893	243.446	85.587	85.651	0.0076
A-3	22.767	108.907	0.654	1.148	0.763	19.837	261.658	86.090	86.154	0.0076
A-3	24.409	108.918	0.665	1.174	0.765	20.787	280.521	86.594	86.658	0.0076

Annex C – EA Product Data

[redacted]

[ii] [redacted]

[iii] https://magic.defra.gov.uk/

[iv] https://flood-map-for-planning.service.gov.uk/

[v] https://check-long-term-flood-risk.service.gov.uk/postcode

[vi] https://environment.data.gov.uk/hydrology/climate-change-allowances/river-flow

[vii] 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]
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.
[redacted] *you.*

Kind regards

[redacted]

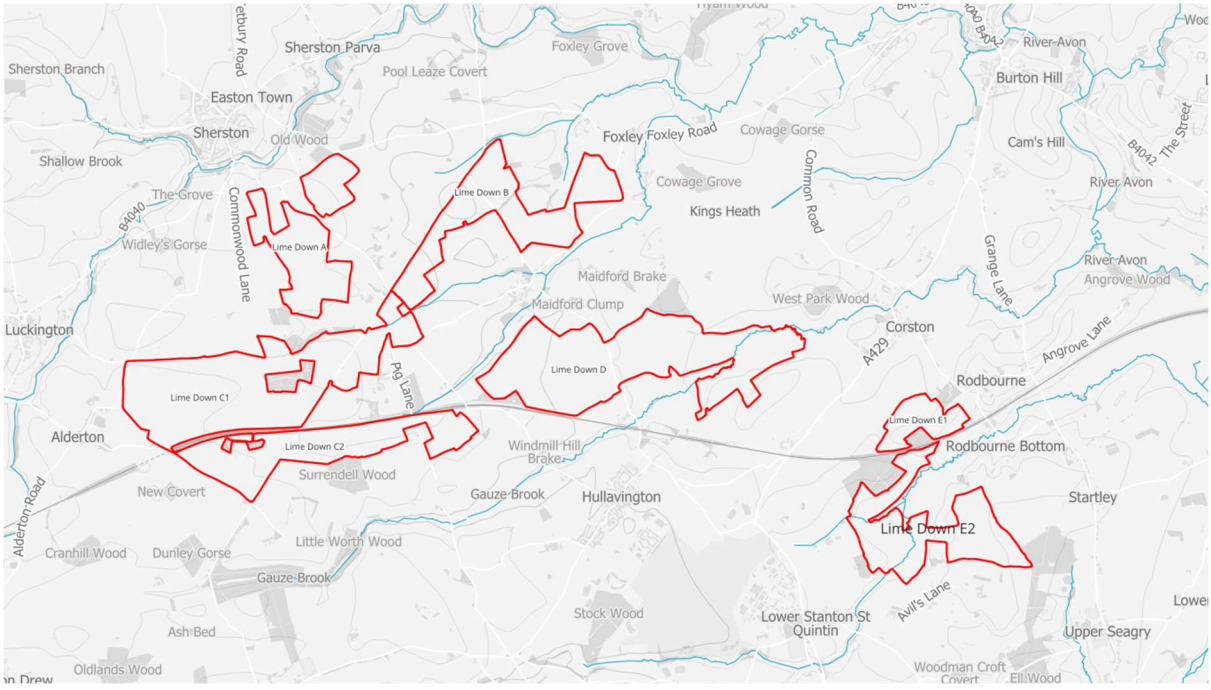
Environment Agency, Wessex Enquiries, Customer & Engagement Team

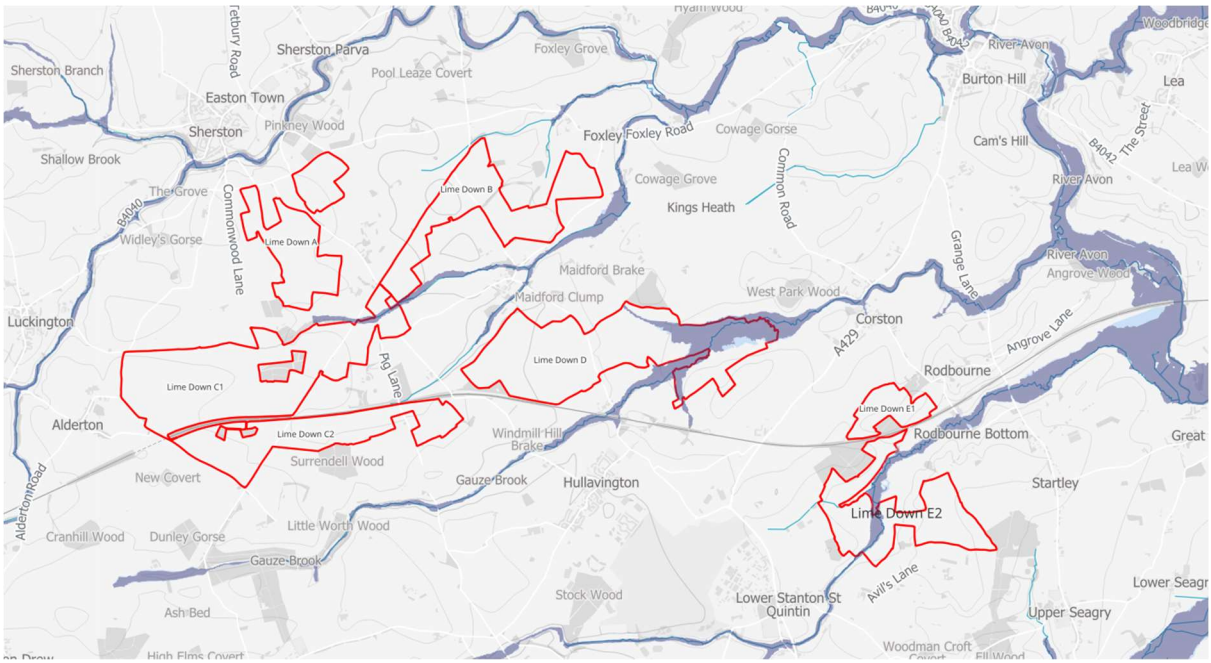
[redacted].- Wessex Enquiries

From: [redacted]
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], BSc (Hons) MSc GradCIWEM

Consultant | Water Environment Team

Mobile: [redacted]

[redacted] [redacted]

IOSH & IEMA Training Course Provider

Anglesey | Belfast | Cardiff | Carlisle | Dublin | Dundee | Edinburgh | Forres | Glasgow | Inverness | Leicester | Manchester | Winchester

creating a better place

Environment Agency

[redacted]

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:

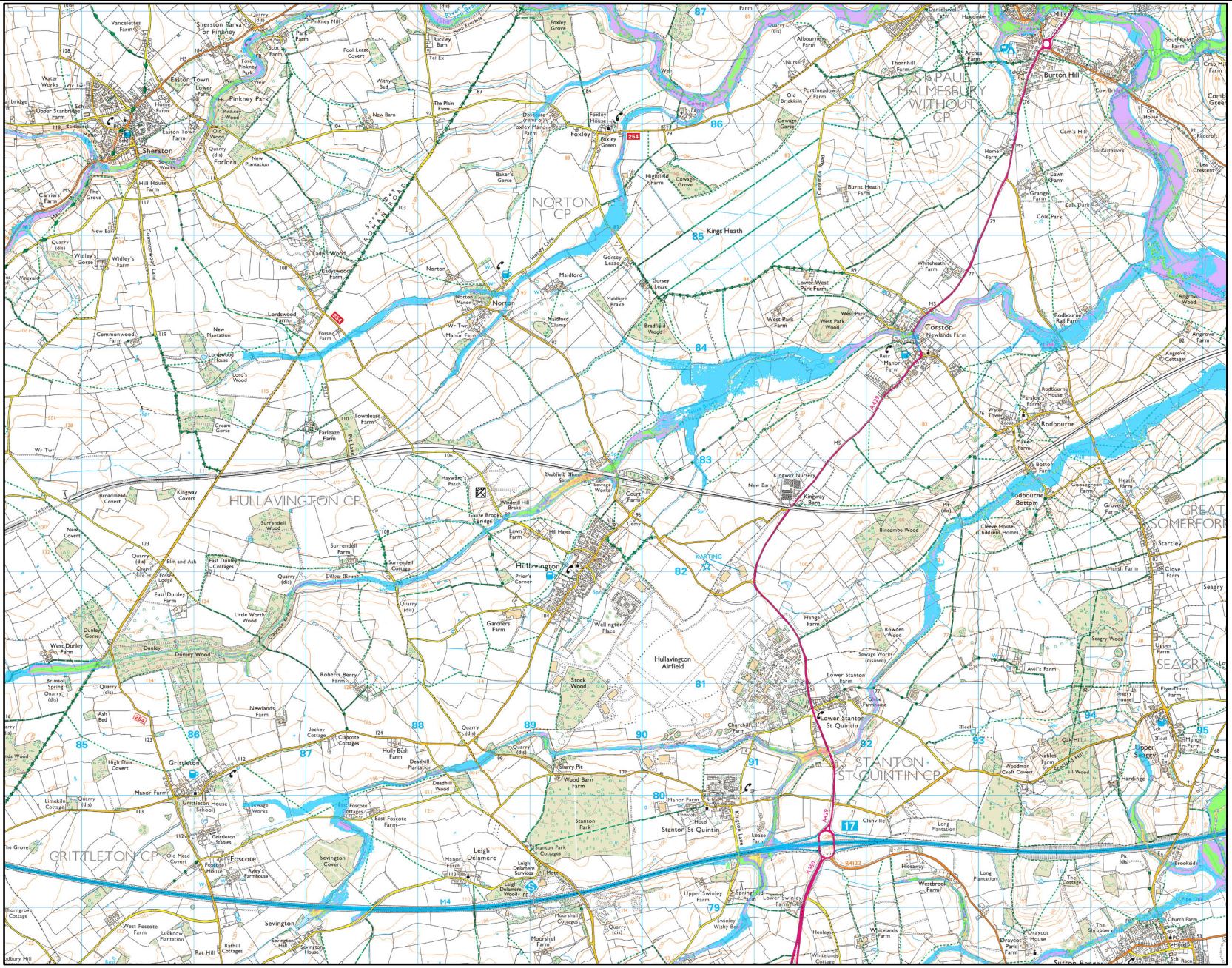
Customer & Engagement, Wessex
Rivers House, East Quay, Bridgwater, Somerset, TA6 4YS
Email: wessexenquiries@environment-agency.gov.uk
www.environment-agency.gov.uk

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

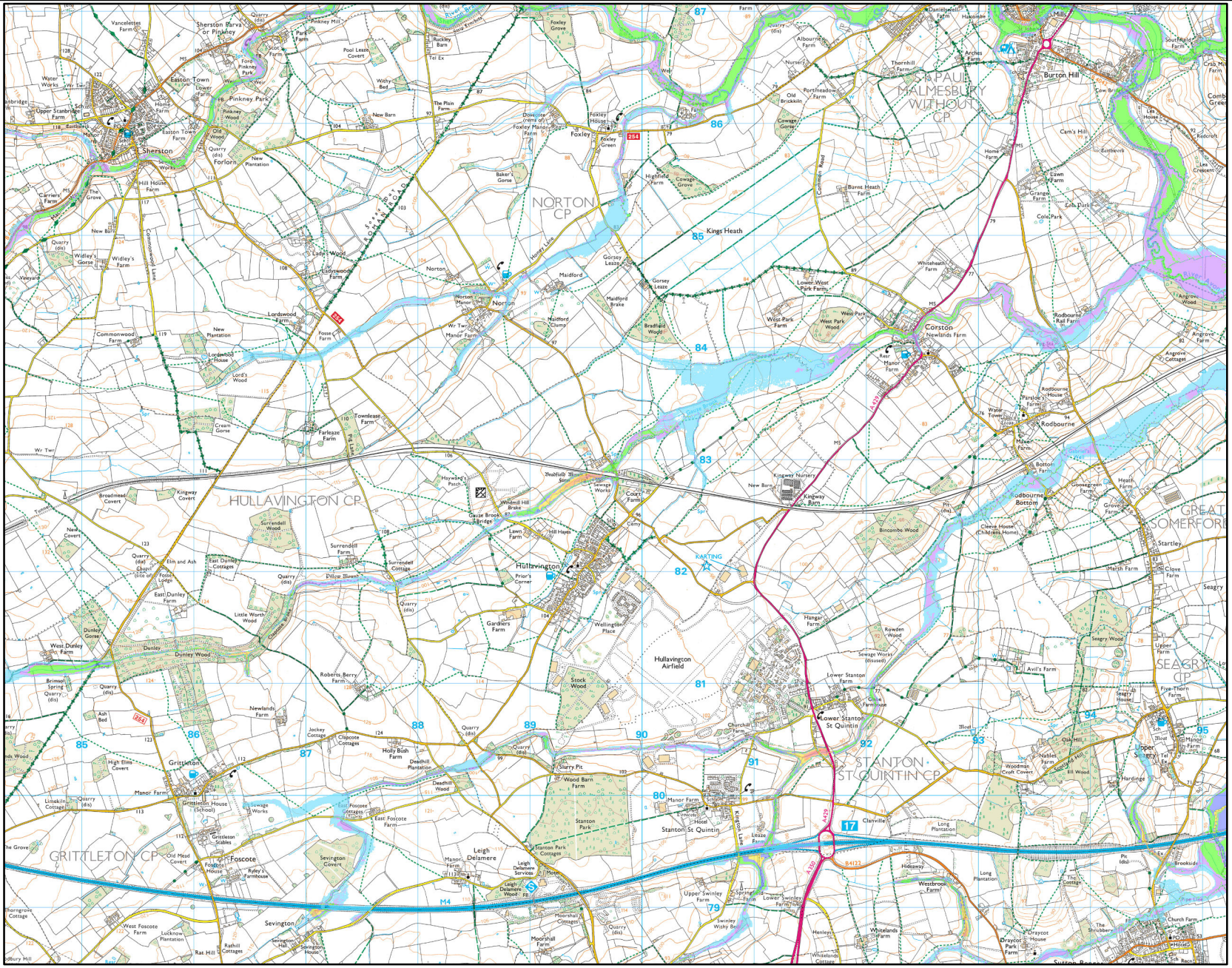
Metres

- 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

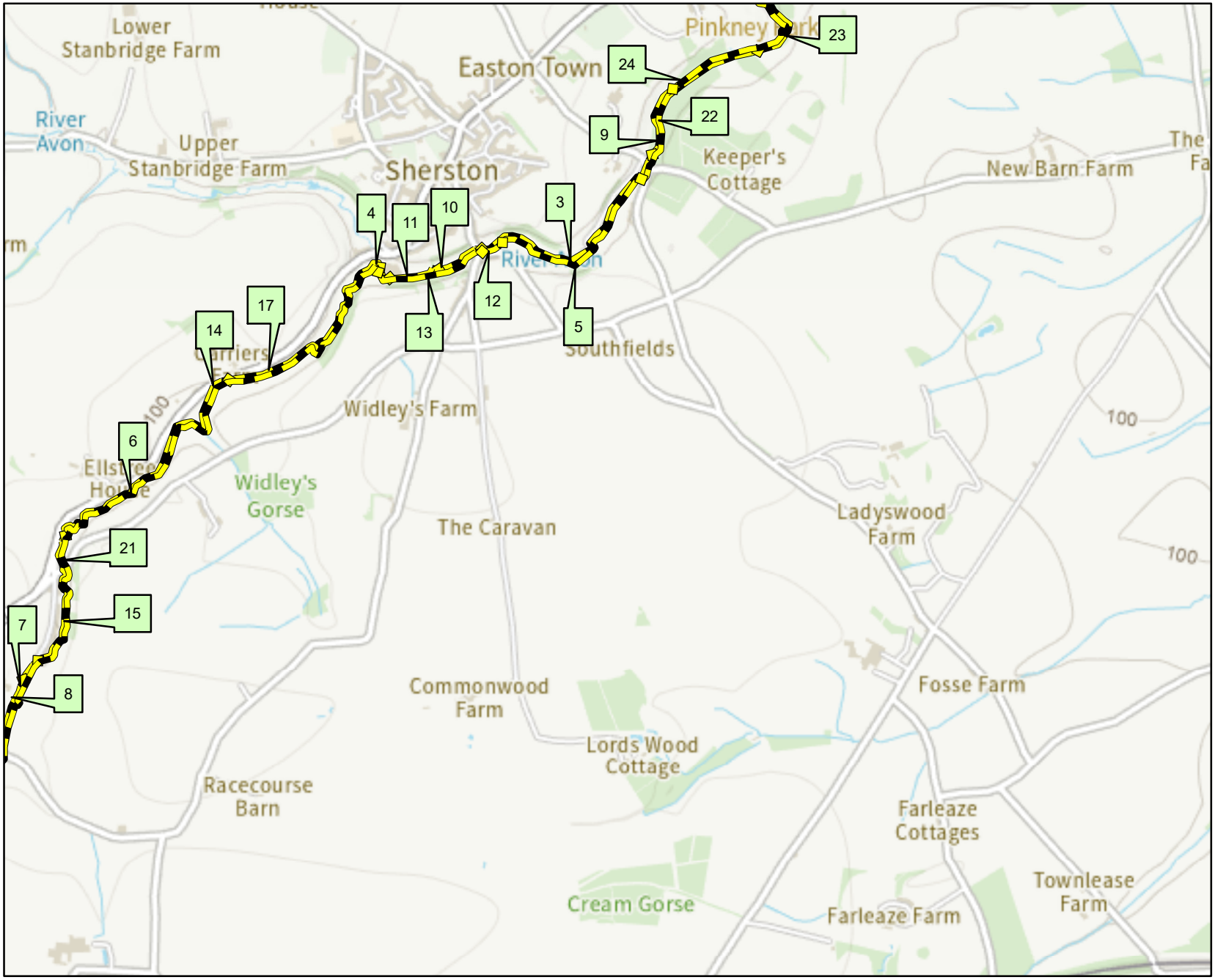
Metres

- 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