Lime Down
Solar Park

Environmental Statement

Volume 3, Appendix 11-8: Flood Risk Assessment and Drainage Strategy – Lime Down E2 (Clean)

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Appendix 11-8: Flood Risk Assessment and Drainage Strategy – Lime Down E2

Prepared by: [redacted]

For: Lime Down Solar Park Ltd

Site: Lime Down Solar Park

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Schedule of Changes

Rev No.	Section Reference	Description of Change	Reason for Revision
2	Paragraph 2.3.6	Updated to amend incorrect reference to substation.	Updates in response to EA Relevant Representation for Deadline 1 of Examination.
	Paragraph 2.3.8 and 2.4.6.	Confirmation of freeboard allowances.	Updates in response to EA Relevant Representation for Deadline 1 of Examination.
	Paragraph 2.3.12	Updated to confirm current position of no loss of functional floodplain (Flood Zone 3b) storage as a result of the Scheme based on Mannings based assessment. Confirmation further modelling work is being undertaken on site E2.	Updates in response to EA Relevant Representation for Deadline 1 of Examination.
	Paragraph 2.3.13	Updated to confirm limited material interaction between floodwaters and solar PV panels and supports.	Updates in response to EA Relevant Representation for Deadline 1 of Examination.
	Paragraphs 2.3.16 to 2.3.21	Revised floodplain storage compensation calculations with more robust methodology as agreed with the EA.	Updates in response to EA Relevant Representation for Deadline 1 of Examination.
	Paragraph 2.3.20	Added text confirming panel supports and fencing would not materially obstruct flood flows.	Updates in response to EA Relevant Representation for Deadline 1 of Examination.
	Figure 8	Inserted new Figure 8 illustrating the areas used to calculate floodplain displacement.	Updates in response to EA Relevant Representation for Deadline 1 of Examination.

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 E2.

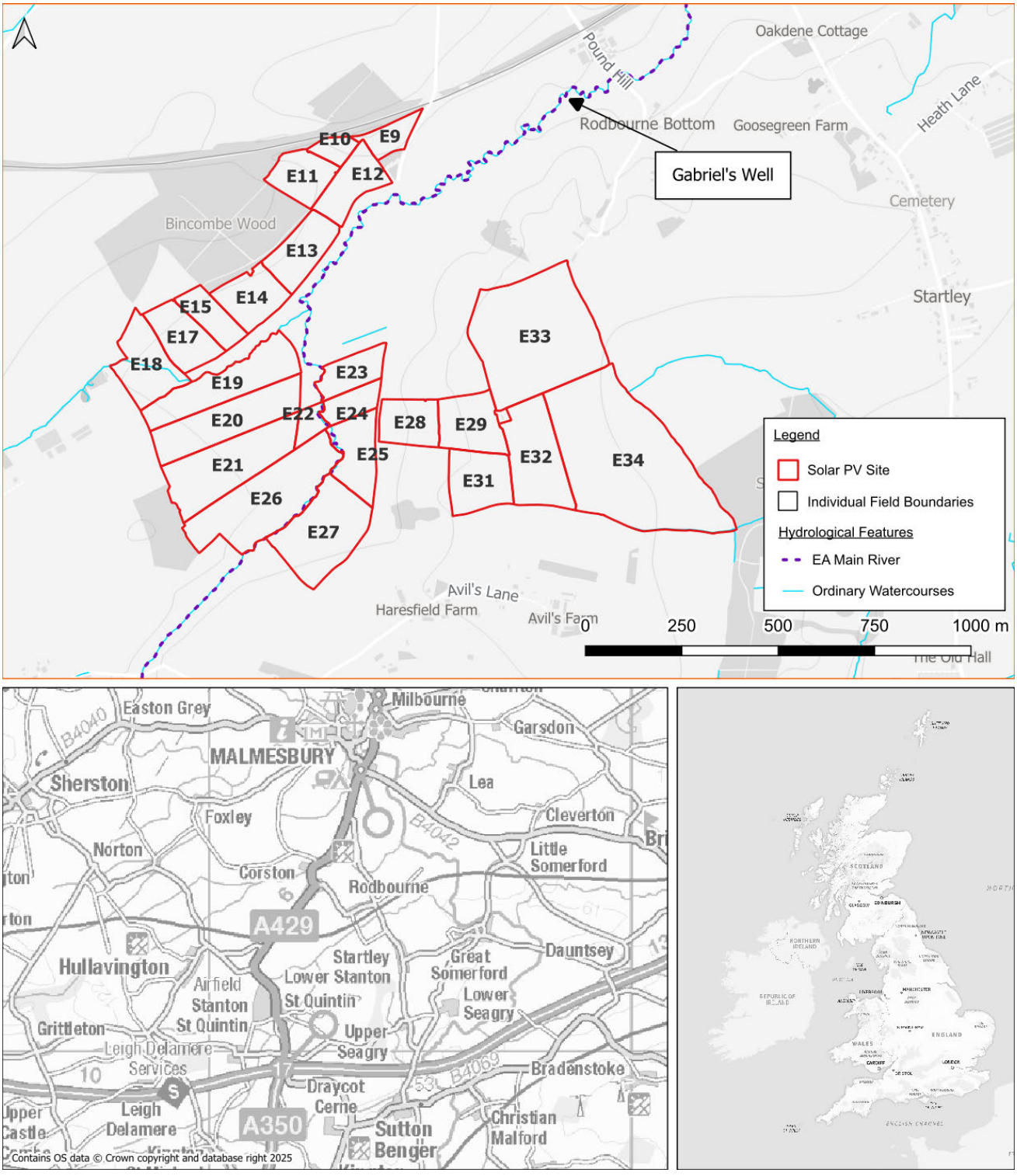


Figure 1: Site Location

1.2 Site Location

1.2.1 Lime Down E2 located to the east of Stanton St Quintin in the north-west of Wiltshire County and is approximately 2km north of the M4. The national grid references are 392840E, 182670N (north), to 393770E, 181450N (south).

1.3 Existing Site Conditions

1.3.1 Online mapping (including Google Maps / Google Streetview imagery[i] (accessed May 2025) shows that Lime Down E2 comprises agricultural / arable fields. Lime Down E2 is bordered by more rural land in all orientations. Access is provided via an unnamed access road off Pound Hill.

1.4 Topography

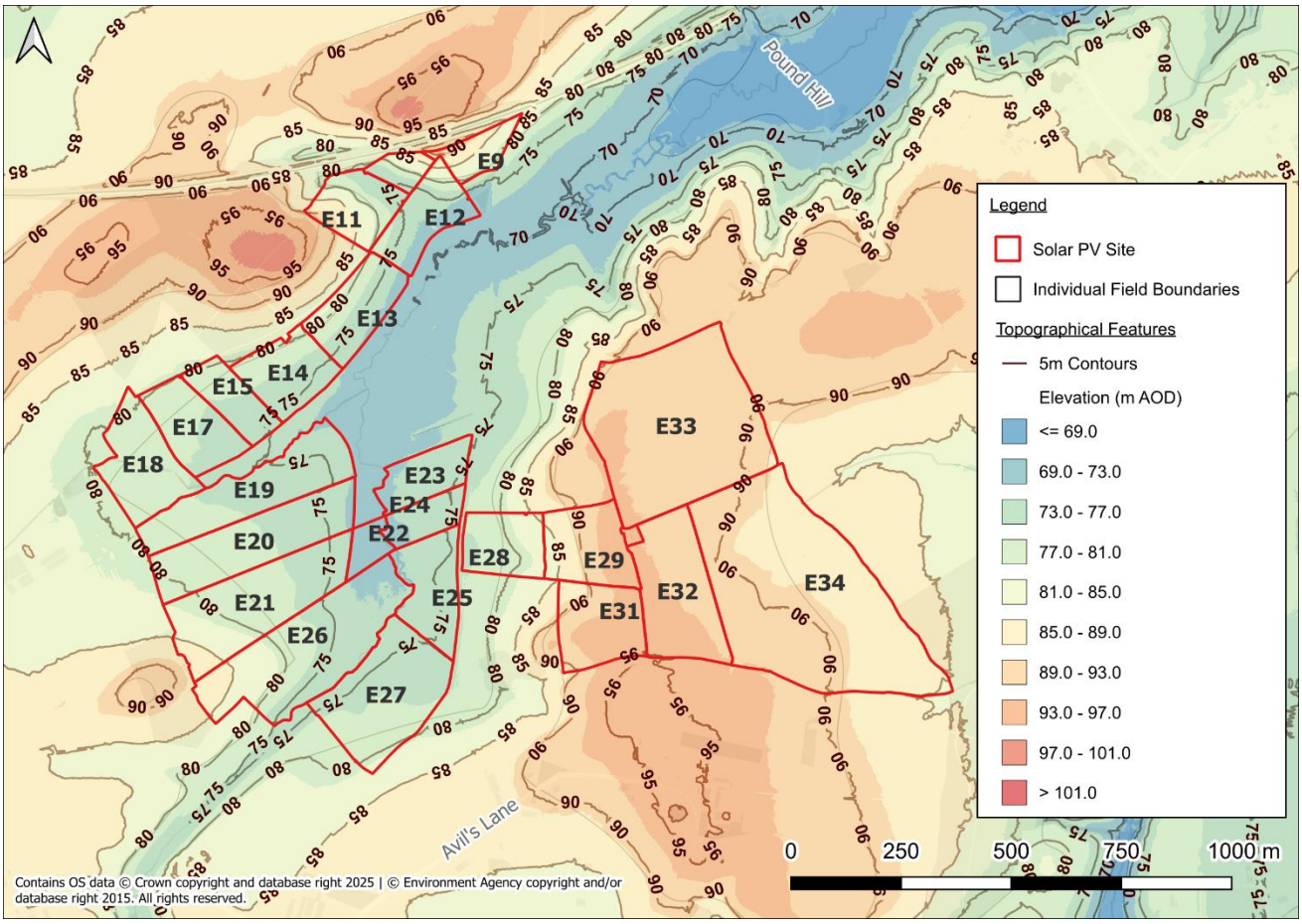


Figure 2: LiDAR Plan

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 E2 slopes from approximately 90m AOD in the south-west to approximately 72m AOD in the centre of Lime Down E2 before sloping in the northern sections to approximately 92.5m (Figure 2).

1.5 Hydrology

1.5.1 Gabriel's Well, a Main River is located through the centre of Lime Down E2, south-west to north. Gabriel's Well also has a tributary which runs from the western boundary in an eastward direction before joining Gabriel's Well in the central-western extent of Lime Down E2. Other watercourses in the area include two tributaries of an unnamed Ordinary Watercourse at the south-eastern boundary of Lime Down E2.

1.5.2 Main Rivers are within the jurisdiction of the Environment Agency (EA), whereas Ordinary Watercourses fall within the jurisdiction of the Wiltshire County Council Lead Local Flood Authority.

1.6 Water Framework Directive Status

1.6.1 Lime Down E2 is located within the Avon Bristal Rural Catchment, largely within the Rodbourne BK – source to conf R Avon (Brist) Water Body Catchment and partially within the Sutton Benger Bk – source to conf R Avon (Brist) Water Body Catchment.

1.6.2 The Rodbourne BK – source to conf R Avon (Brist) Water Body catchment has a Cycle 3 Ecological status of Moderate in 2019 and 2022 and a Failing chemical status in 2019 (no data in 2022).

1.6.3 The Sutton Benger Bk – source to conf R Avon (Brist) Water Body catchment has a Cycle 3 Ecological status of Good in 2019 and 2022 and a Failing chemical status in 2019 (no data in 2022).

1.6.4 A summary of the Water Body Classifications can be found in 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 E2 is largely not underlain by superficial deposits, aside from an area of Alluvium, comprising clay, silt sand and gravel superficial deposits (see Figure 3 for the deposit location).

1.7.2 Lime Down E2 is identified as being underlain by the following bedrock deposits (see Figure 4 for the locations of the varying deposits):

- Kellyways Clay Member – Mudstone;
- Kellways Sand Member – Sandstone and Siltstone, interbedded;
- Cornbrash Formation – Limestone;
- Forest Marble Formation – Mudstone; and
- Oxford Clay Formation – Mudstone.

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

1.7.4 There are no BGS boreholes at Lime Down E2 or within the immediate vicinity of Lime Down E2.

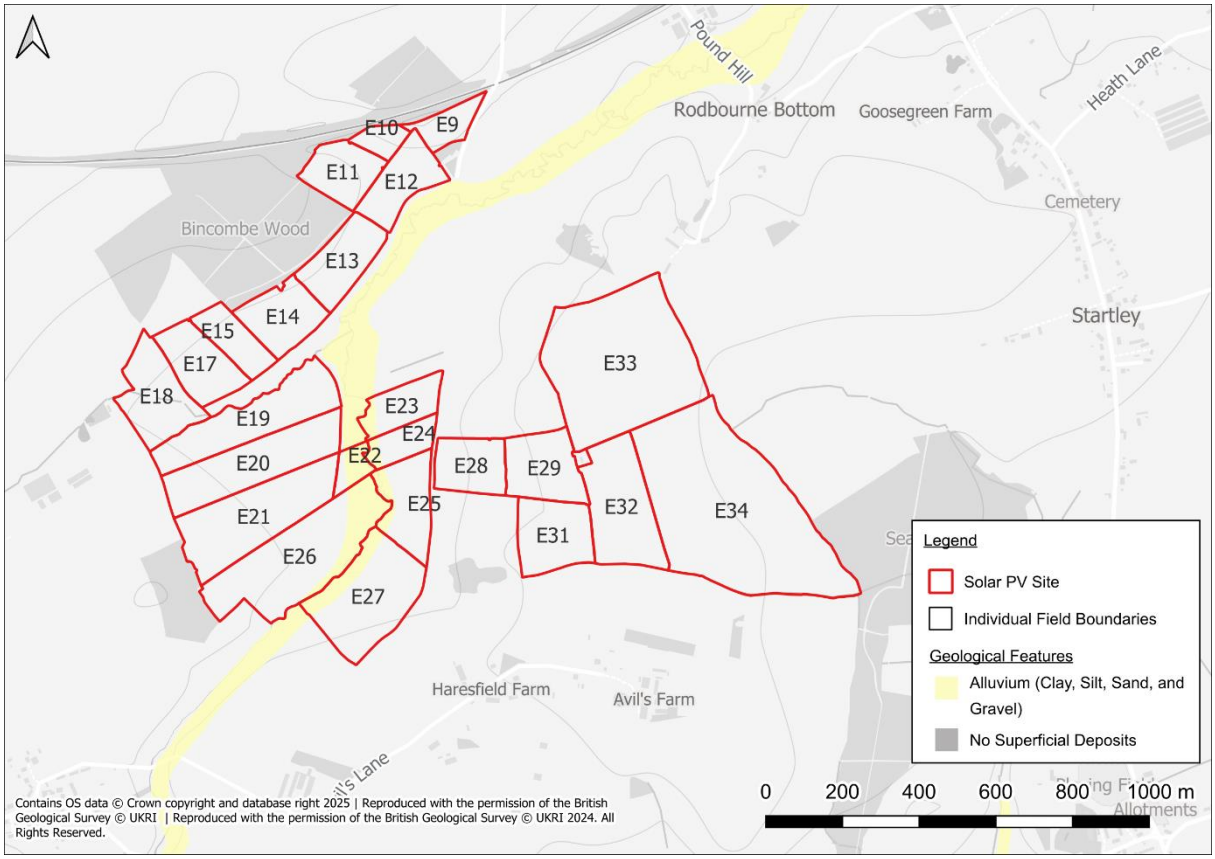


Figure 3: Superficial Deposits

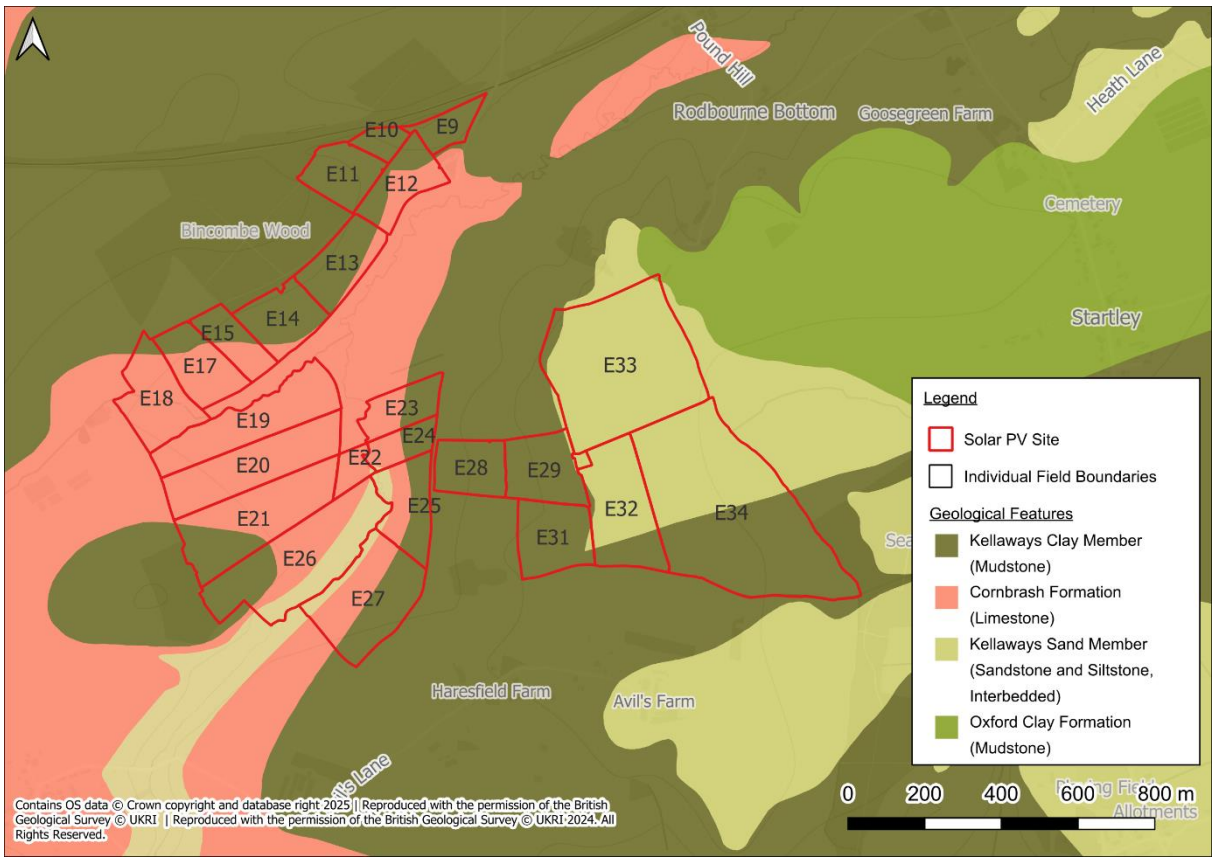


Figure 4: Bedrock Deposits

1.8 Hydrogeology

1.8.1 According to the EA's Aquifer Designation data, obtained from MAGIC Map's online mapping[iii] [accessed 02/06/25], the Alluvium Formation is described as a Secondary A Aquifer.

1.8.2 The underlying the Cornbrash Formation, Forest Marbie Formation and Kellaways Sand Member Deposits are classified as a Secondary A Aquifers. The Kellaways Clay Member and Oxford Clay Formation are classified as unproductive aquifers.

1.8.3 The EA's 'Source Protection Zones' data, obtained from MAGIC Map's online mapping [accessed 02/06/25], indicates that Lime Down E2 is located within a Groundwater Source Protection Zone (Zone I- Subsurface Activity).

1.9 Proposed Site Conditions

1.9.1 Lime Down E2 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 (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 Pannels, 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 E2.

2.2 Tidal Flood Risk

2.2.1 Lime Down E2 is situated at a minimum of approximately 72m 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 E2 is situated largely within Flood Zone 1 (meaning it is an area considered to have <0.1% annual probability of flooding from rivers or the sea) with the exception of Fields E20 – E27 which are located in Flood Zones 2 and 3. The extent of Flood Zone 3 is considered to be associated with Gabriel's Well (which flows in a north-easterly direction).

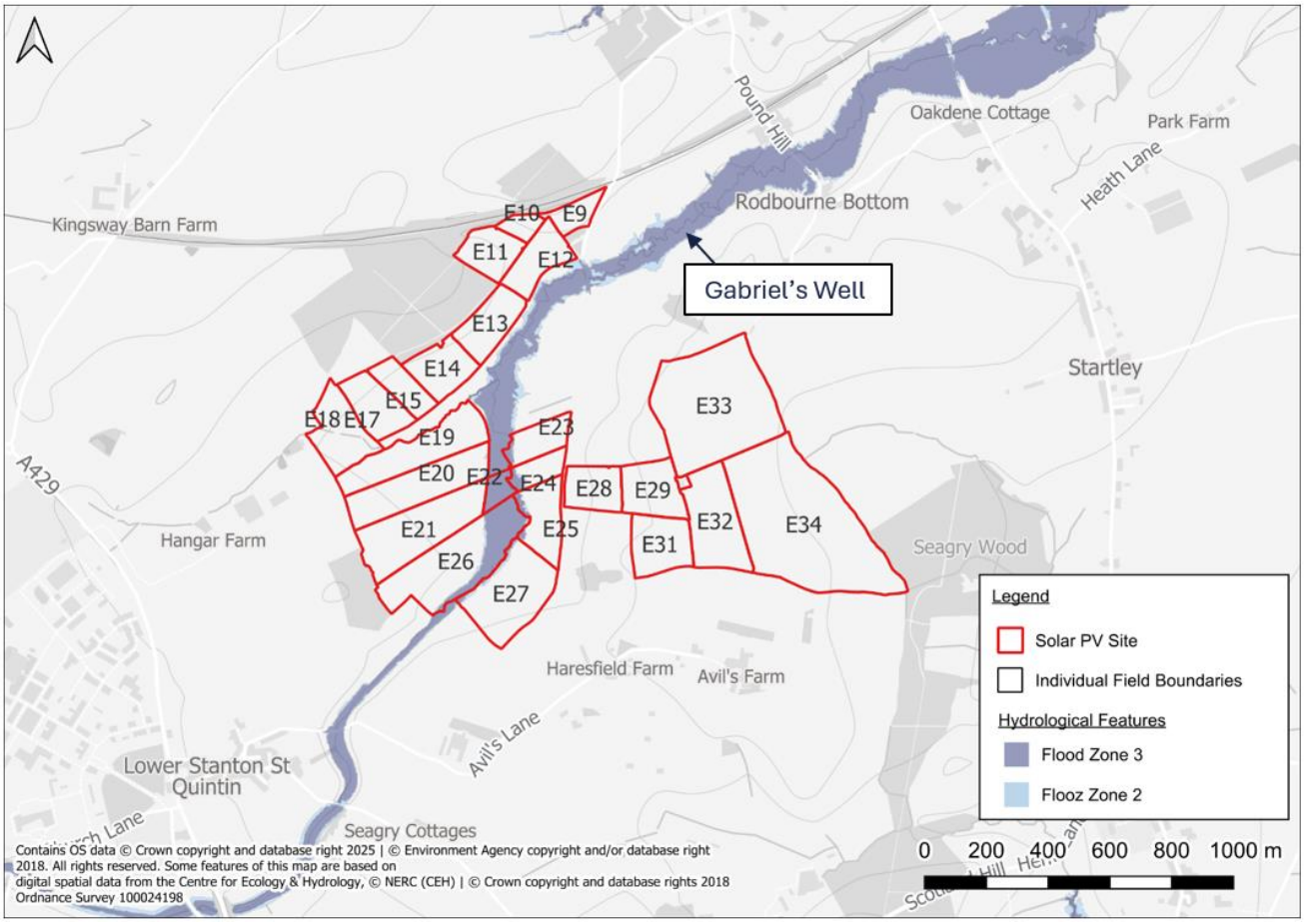


Figure 5: EA's Flood Map for Planning

Local Watercourses and Flooding Mechanisms

2.3.2 Gabriel's Well is designated as a Main River and flows through the centre of Lime Down E2. The mapped

floodplain extents correspond largely with areas below approximately 74 m AOD. Fluvial flooding could occur in these areas if Gabriel's Well overtopped its banks or became restricted by debris or sediment accumulation during or following extreme rainfall events.

2.3.3 According to the Environment Agency's Spatial Flood Defences with Standardised Attributes dataset, a natural high ground feature is present adjacent to Gabriel's Well. No engineered defences or defined crest levels are recorded, and the Standard of Protection and condition of this feature are unknown.

Historical Flooding

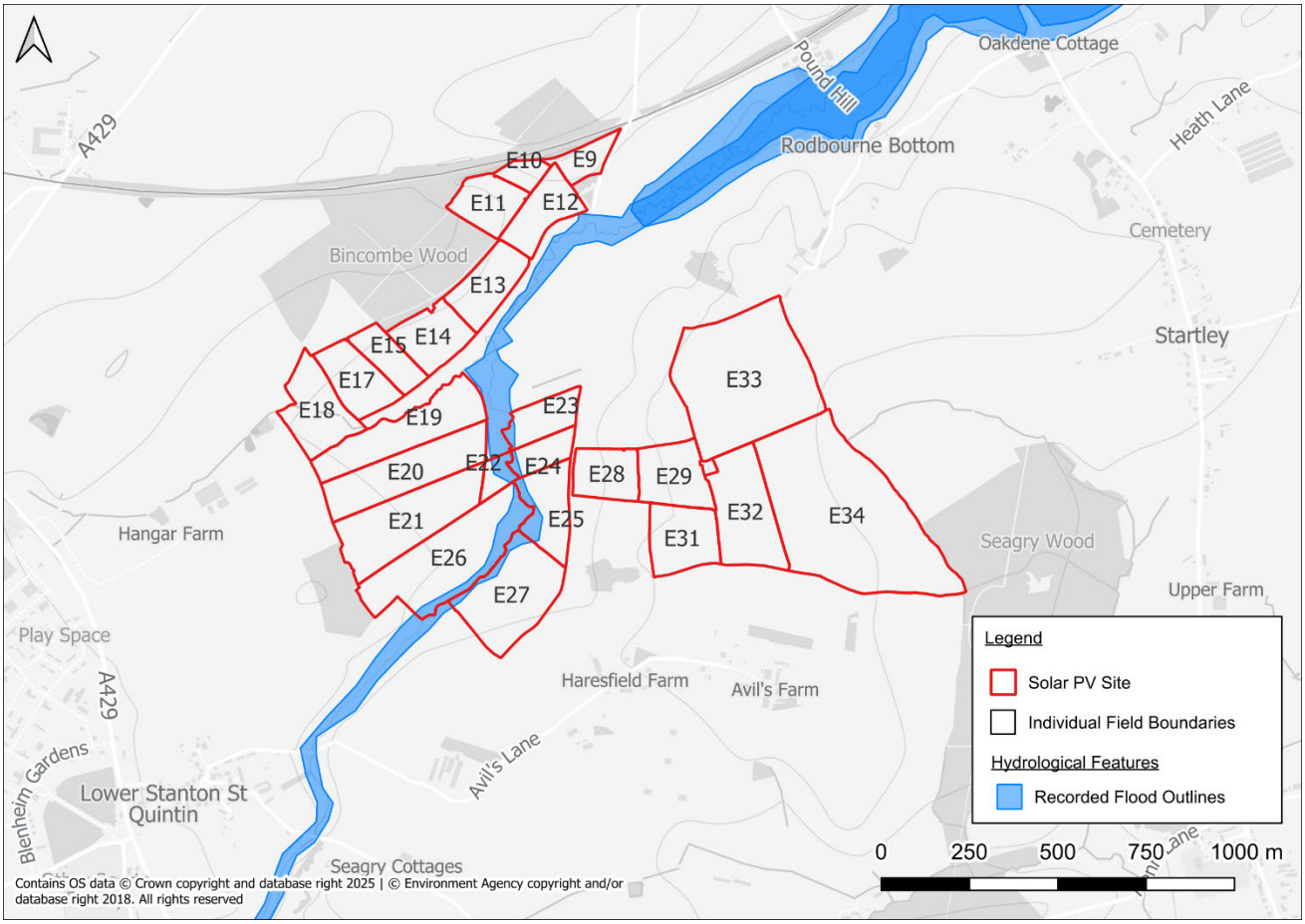


Figure 6: Historic Flood Map

2.3.4 The Environment Agency's Historical Flood Map (Figure 6) records a fluvial flood event in January 1925, understood to have resulted from overtopping of Gabriel's Well during prolonged rainfall. No additional site-specific records of historic fluvial flooding have been identified from Environment Agency datasets or third-party sources.

Estimation of Flood Depths Using NaFRA2 and LiDAR

2.3.5 In the absence of detailed site-specific hydraulic modelling, updated NaFRA2 mapping (2050s epoch) has been adopted as the primary dataset to define indicative fluvial flood extents and depths. To ensure a conservative assessment, the 0.1% Annual Exceedance Probability (AEP) event has been applied.

2.3.6 NaFRA2 extents were overlaid on high-resolution Environment Agency LiDAR data to derive flood depth estimates across the Site. The mapping indicates that predicted flood depths affecting areas proposed for installation of solar PV panels range between less than 0.1 m and approximately 0.6 m, with some limited areas locally exceeding 0.3 m. Importantly, the proposed infrastructure area is shown to remain outside the mapped flood extents, confirming it is not expected to be impacted under the modelled event.

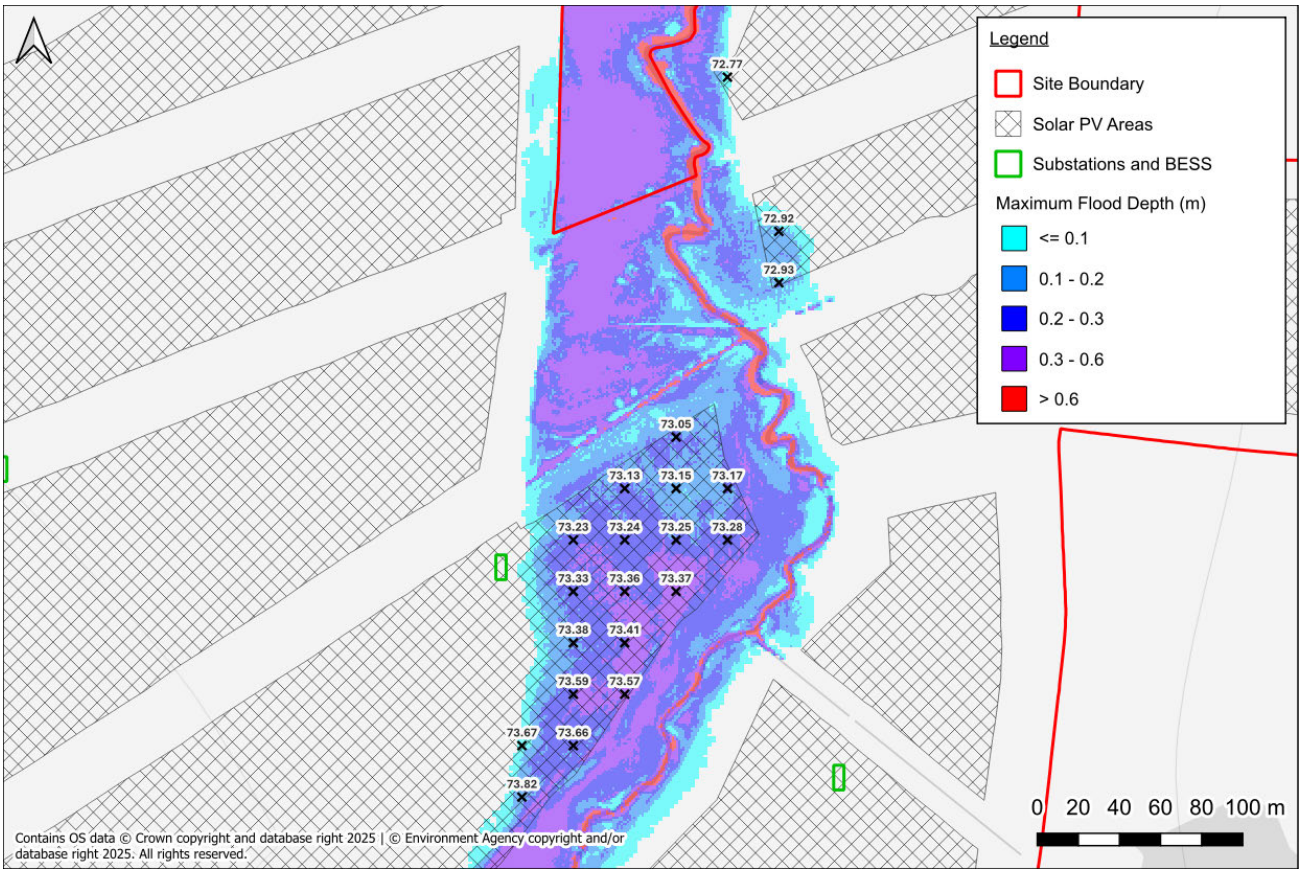


Figure 7: Water Level and Depth Map

2.3.7 Figure 7 illustrates the spatial distribution of predicted flood extents, levels and depths, confirming that inundation is confined to established low-lying floodplain corridors adjacent to Gabriel's Well, with the majority of the Site remaining dry.

2.3.8 In line with the embedded mitigation strategy set out in **Appendix 11.1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3],** the proposed solar panels and associated infrastructure have been designed to remain resilient to fluvial flood risk. Electrical infrastructure, including inverters, transformers and substations, will either be located outside of modelled flood extents or raised above a minimum freeboard of 0.6 m above the design flood level. Smaller components such as conversion units and switchgear, where present, will be minor in scale and made resilient through elevation or localised waterproofing. This ensures that all above-ground infrastructure remains operational during fluvial flood events and does not obstruct floodplain flow routes.

Assessment of Minor Watercourses and Ephemeral Drains

2.3.9 In the absence of modelled flood data, surface water flood maps can be used to provide an understanding of potential fluvial flood risk from smaller watercourses. The flow routes picked up by the surface water mapping are considered to be associated with the small watercourses and ephemeral drains present, however the mapping indicates that the depths are not expected to exceed 0.3m.

2.3.10 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. 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.

2.3.11 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.

Floodplain Storage Compensation

2.3.12 Flood Zone 2 and 3 extents are expected to impact the Site in Fields E23, E24, E26, and E27. Based on the available Flood Map for Planning information and the Manning's-based assessment undertaken for this appendix, the layout of panelled development within Lime Down E2 has sought to avoid higher-risk areas and the main functional floodplain extent. No built development is proposed within areas identified as being at the highest probability of fluvial flooding. The panelled areas that interact with mapped flood extents comprise flood-compatible development only and are not expected to give rise to material loss of floodplain storage or material obstruction of flood flow routes within the meaning of NPS EN-1 Section 5.8.12. Further refinement of the flood risk position is being progressed separately through background modelling work.

2.3.13 A flood compensation analysis is detailed below. The potential for floodwaters to interact materially with the solar PV Panels or their supports is limited, as the development in these areas is either located outside the main floodplain extent or raised above the design flood level with an appropriate freeboard allowance. As a result, any associated displacement of floodplain storage is considered negligible, and the implementation of specific flood compensation measures in these locations is not considered necessary or proportionate.

2.3.14 The EA has advised that, for any development located within Flood Zone 3a (i.e. the 1 in 100-year plus climate change flood extent), floodplain storage compensation should be incorporated into the design. Compensation should be provided on a level-for-level and volume-for-volume basis, ensuring direct replacement of any lost storage.

2.3.15 Flood volume loss has been conservatively estimated based on the cross-sectional area of the

proposed panel supports (28.65cm^2), multiplied by the number of supports located within Flood Zones 2 and 3 across the Site (assumed as 10 piles per 100 m of panels, equating to approximately 608 piles in Lime Down E2), and applying a worst-case flood depth of 1.2m. This results in a total displaced volume of just 2.09m^3 across Lime Down E2.

2.3.16 To assess the potential increase in flood levels resulting from the loss of floodplain storage, a deliberately conservative approach has been adopted. The total displaced volume has been assumed to be redistributed uniformly across the EA Flood Map for Planning + Climate Change extents within the Site only. This approach is intentionally precautionary, as it assumes that all displaced floodwater is retained within the Site boundary, whereas in reality floodwaters are hydraulically connected to a wider floodplain and any displacement would be distributed over a substantially larger area.

2.3.17 The potential increase of flood depths are considered negligible and well within the natural variability of floodplain behaviour, and would result in no perceptible change in flood levels or flow routes. It therefore represents a highly conservative assessment of worst-case impacts.

2.3.18 The on-site flood extent is approximately 50,735m^2 - presented in Figure 8. When the total displaced volume of 2.09m^3 is distributed across this area, the resulting theoretical increase in flood level is approximately **0.000041mm** (4.1×10^{-5}mm).

2.3.19 This increase is several orders of magnitude below the precision at which flood levels can be meaningfully defined, and is well within the inherent uncertainty of hydraulic modelling, topographic data, and natural floodplain variability. The effect is therefore imperceptible and would not result in any measurable change to flood levels, flood extents, flow routes, or flood risk to third parties.

2.3.20 Furthermore, the proposed solar panel supports comprise discrete, widely spaced elements with a negligible cumulative footprint relative to the floodplain area. As such, they would not materially affect floodplain conveyance or flow paths.

2.3.21 Given the extremely limited displacement, the conservative assumptions applied, and the imperceptible increase in flood depth, the impact on flood storage capacity is considered de minimis. On this basis, it is concluded that further consideration or provision of compensatory flood storage resulting from panelled areas encroaching into the flood extents is not necessary or proportionate for the proposed development. The potential increase of flood depths are considered **negligible** and well within the natural variability of floodplain behaviour, and would result in no perceptible change in flood levels or flow routes. It therefore represents a highly conservative assessment of worst-case impacts.

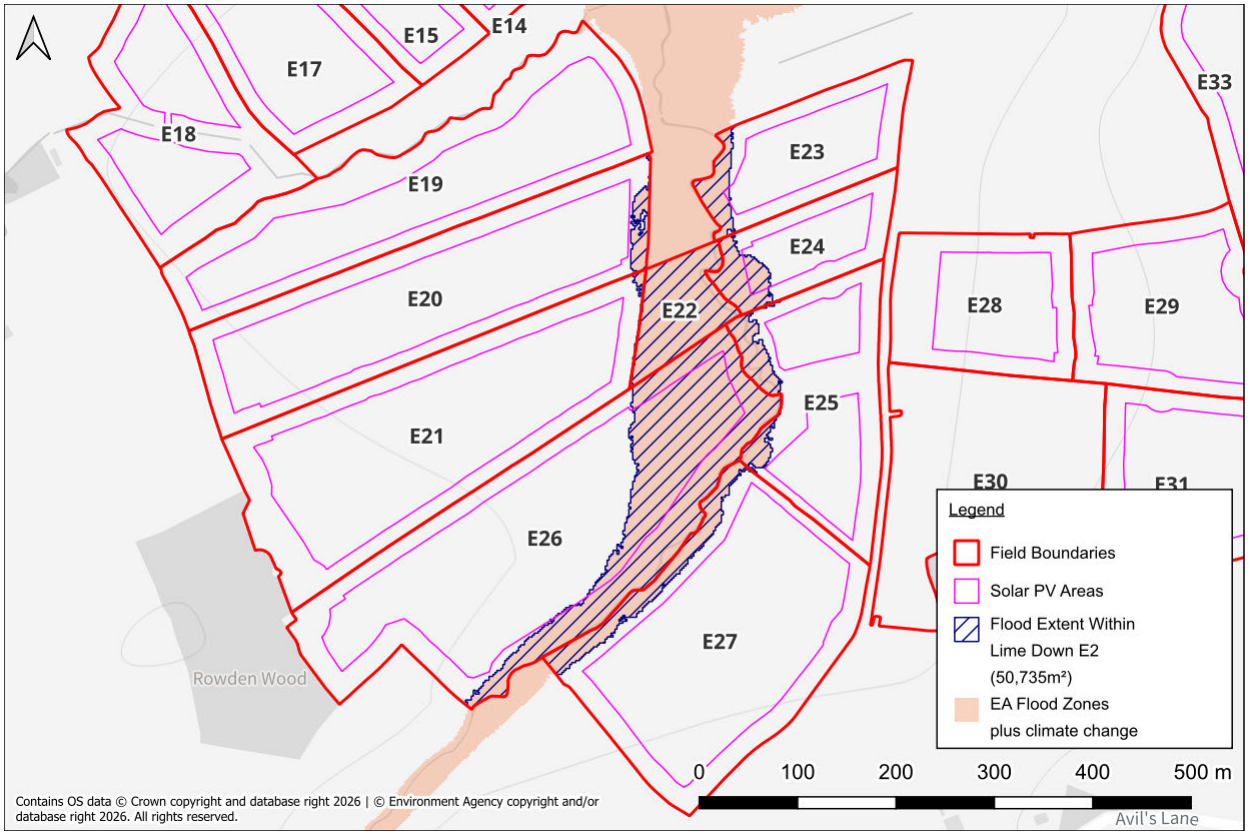


Figure 8: Lime Down E2 displacement calculation area – 50,735m²

Consultation

2.3.22 The EA were consulted in October 2024 regarding the availability of any site-specific flood data and hydraulic modelling for Lime Down E2. A formal response was received on 13 November 2024, included in Annex C. The Product 4 data provided for the Site were generated using the EA's National Generalised Model (JFLOW). This dataset is suitable for defining indicative Flood Zones; however, it is not based on a detailed channel survey or locally calibrated model inputs.

2.3.23 The JFLOW outputs include indicative flood depths for the 1% AEP and 0.1% AEP events. Within the area identified as Flood Zone 3, the mapping shows that flood depths are predominantly below 0.5 m during both events. The remainder of the Site is shown to remain dry. Limited areas within the Gabriel's Well river channel are indicated to have depths between 0.5 m and 1.0 m during the 1% AEP scenario, with these deeper extents extending slightly into adjacent channel margins during the 0.1% AEP scenario.

2.3.24 Consultation has been undertaken throughout the EIA process with the EA and Wiltshire Council. Comments and recommendations received during this engagement have been considered and incorporated, where appropriate, into this Flood Risk Assessment and Drainage Strategy. A record of consultation and Arthian's responses is provided in ES Chapter 11: Hydrology, Flood Risk and Drainage.

2.3.25 Lime Down E2 is not located within an Internal Drainage Board (IDB).

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

Summary

2.3.27 Given the above and the nature of the Scheme, Lime Down E2 is therefore 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)[vi], 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.

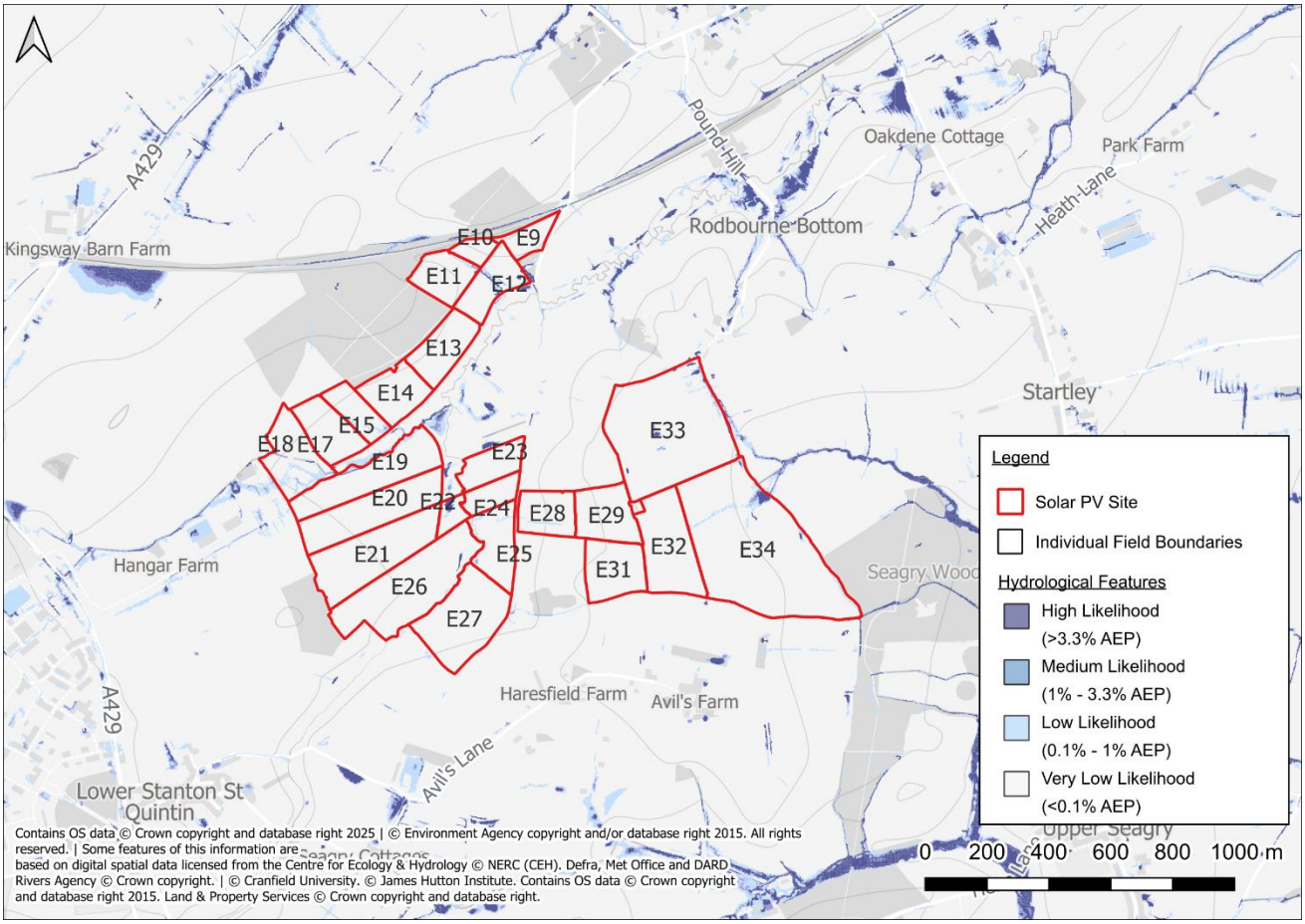


Figure 9: EA's Long-Term Flood Risk Map (Flood Risk from Surface Water)

2.4.2 According to the EA's Long Term Flood Risk Map (Surface Water) the majority of Lime Down E2 is at Very Low risk of surface water flooding, meaning it has a <0.1% annual probability of flooding. However, there are some small areas of Low to High risk (0.1 - >3.3% annual chance of flooding), particularly in areas associated with the presence of Gabriel's Well which flows in a north-easterly direction.

2.4.3 With reference to the depth mapping provided by the NaFRA data, flood depths are anticipated to be low, with depths remaining largely below 0.3m which is considered passable to people and vehicles. Some depths between 0.3 and 0.6m are anticipated in Fields E10 – E12, E14 – E18, E22, E25 – E26, and

E33 – E34, however as above, these depths are associated with the presence of Gabriel's Well.

2.4.4 There is no indication within relevant third-party reports (listed in 'Sources of Information' in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3]**) to suggest that Lime Down E2 has historically experienced surface water flooding.

2.4.5 Based on the above and considering the embedded mitigation as part of the design of the solar PV Panels, the overall risk of surface water flooding is considered to be **Low**. The proposed solar PV Panels and all other electrical infrastructure 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.

Associated electrical infrastructure, such as inverters, transformers, cabling and substations, will be located outside mapped flood extents where feasible, or otherwise elevated above a minimum freeboard of 0.6 m above the design flood level, in line with the embedded mitigation strategy outlined in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3].**

2.4.6 Smaller electrical components such as switchgear and 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. This ensures that all above-ground infrastructure will remain operational during fluvial or surface water flood events, and will not obstruct overland flow paths or exacerbate off-site flood risk.

2.4.7 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 SuDS measures.

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 2015 SFRA interactive mapping[vii] details that Lime Down E2 largely is identified as having 'No risk' from groundwater flooding. The western areas underlain by Cornbrash Formation and Forest Marble Formation are classified as having groundwater levels of between 0.025m and 0.5m below ground level (bgl) or 0.5m and 5m bgl. There is no further information within relevant third party reports (listed 'Sources of Information' in **ES Volume 3, Appendix 11-1: Flood Risk Assessment and Drainage Strategy – Covering Report [EN010168/APP/6.3]**) to suggest that Lime Down E2 has experienced historical groundwater flooding.

2.5.3 Soilscapes[viii] indicates that Lime Down E2 is partially '*freely draining*', with areas of *'impeded drainage'*.

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 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 E2's rural setting, the presence of sewerage infrastructure is unlikely. Utility records have been checked and do not identify any public sewers within Lime Down E2.

2.6.3 It can therefore be concluded that the risk of sewer flooding is **Negligble.**

2.7 Reservoir and Canal Flooding

2.7.1 There are no canals within the vicinity of Lime Down E2, therefore there is no associated risk.

2.7.2 The EA 'Flood Risk from Reservoirs' map shows that Lime Down E2 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 Gabriel's Well and potentially impact Lime Down E2. 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 E2 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 E2 from all sources of flooding is **Negligible to Low**.

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],** in which the FRA has informed.

2.11 Impact on Off-Site Flood Risk

2.11.1 The solar PV Panels and other electrical infrastructure, such as inverters, transformers, cabling and substations, which are 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 and no increase in flood risk elsewhere.

2.11.2 Associated Scheme, such as switch gears, inverters and conversion units, are insignificant in size. The various components dimensions can be found in detail in **ES Volume 1, Chapter 3: The Scheme**

[EN010168/APP/6.1]. Given the embedded mitigation detailed above, including locating infrastructure outside of any areas considered to be at risk, there should be no increase in flood risk elsewhere.

2.11.3 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 E2 is for a ground mounted Solar PV Panels and associated Scheme and access roads.

Flood Risk

3.1.2 Lime Down E2 is situated largely within Flood Zone 1 with the exception of Fields E20 – E27 which are located in Flood Zones 2 and 3. The extent of Flood Zone 3 is considered to be associated with Gabriel's Well (which flows in a north-easterly direction). All areas of proposed Scheme located within Flood Zones 2 / 3 have been included in floodplain storage compensation calculations and found the impact on flood depths to be negligible.

3.1.3 The majority of Lime Down E2 is at Very Low risk of surface water flooding. However, there are some small areas of Low to High risk, particularly in areas associated with the presence of Gabriel's Well which flows in a north-easterly direction.

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 will be mounted on raised frames and therefore raised above surrounding ground level allowing flood water to flow freely underneath. Therefore, there will be no loss of floodplain volume as a result of the Scheme. The various components dimensions can be found in detail in Chapter 3: Scheme Description.

3.2 Recommendations

3.2.1 Embedded Mitigation is detailed in **ES Volume 3, 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

Rodbourne Bk – Source to Conf R 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	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Invertebrates	Moderate	Moderate	Moderate	Good	2015	
Macrophytes and Phytobenthos Combined	Moderate	Moderate	Moderate	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Macrophytes sub element	Moderate	Moderate	Moderate			
Physio-Chemical Quality Elements	High	High	High	Good	2027 - Low Confidence	Disproportionately expensive: Disproportionate burdens
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	High	High	High	Good	2015	
Phosphate	High	High	High	Good	2015	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	Supports Good	Supports Good	Supports Good		2015	
Specific Pollutants				N/A	2015	
Copper						
Triclosan						
Zinc						
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						
Di(2-ethylhexyl)phthalate (Priority hazardous)						
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
Tributyltin Compounds						
Priority substances	Good	Good	N/A	Good	2015	
Cypermethrin (Priority)	Good	Good		Good	2015	
Fluoranthene	Good	Good		Good	2015	
Lead and Its Compounds						
Nickel and Its Compounds						
Other Pollutants	N/A	N/A	N/A	N/A	2015	Did not require assessment

Sutton Benger Bk – Source to Conf R 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	2021	Disproportionately expensive: Disproportionate burdens
Biological Quality Elements	Good	Good	Good	Good	2021	Disproportionately expensive: Disproportionate burdens
Invertebrates	High	High	High	Good	2015	
Macrophytes and Phytobenthos Combined	Good	Good	Good	Good	2021	Disproportionately expensive: Disproportionate burdens
Macrophytes sub element	Good	Good	Good			
Physio-Chemical Quality Elements	High	High	High	Good	2015	
Acid Neutralising Capacity	N/A	N/A	High		2015	
Ammonia (Phys-Chem)	High	High	High	Good	2015	
Dissolved Oxygen	High	High	High	Good	2015	
Phosphate	High	High	High	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	
Hydrological Regime	Supports Good	Supports Good	Supports Good	Supports Good	2021	Disproportionately expensive: Disproportionate burdens
Morphology	Supports Good	Supports Good	Supports Good			
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	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
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		Good	2015	
Fluoranthene	Good	Good		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 E2

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.

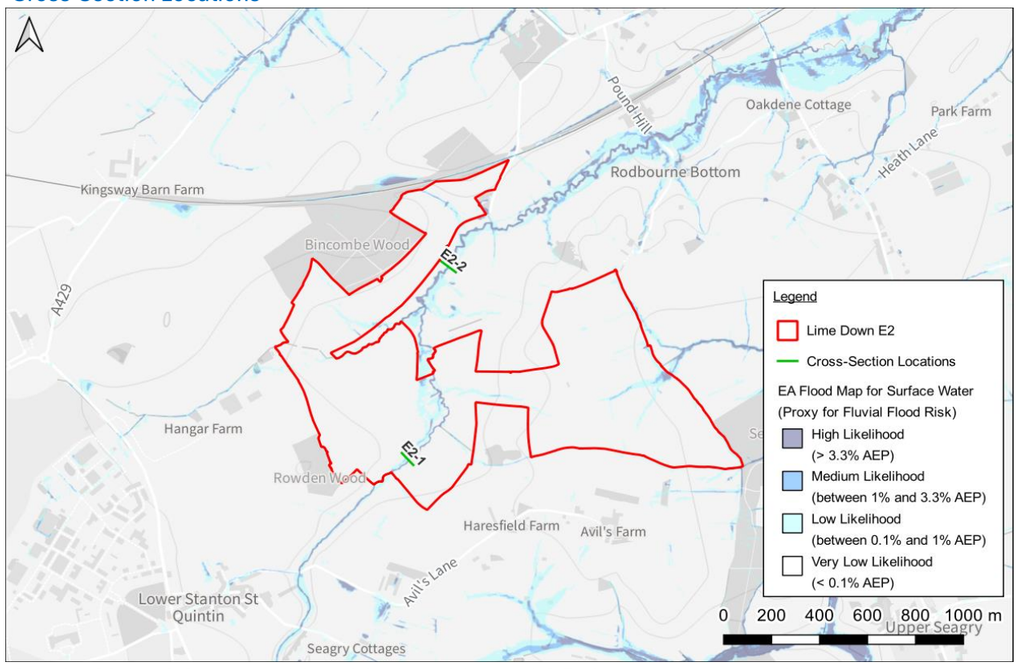
In the absence of detailed flood extent data covering the site, the extents of the EA surface water flood map (0.1% AEP event, present day) have been compared to underlying LiDAR data to provide an estimate of water levels. The surface water flood map has been used as a proxy for fluvial flooding given 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)
E2-1	0.1% AEP EA FMfSW water level	73.90	9.0	15.3	74.03 (+129mm)
E2-2	0.1% AEP EA FMfSW water level	71.45	12.1	20.6	71.60 (+151mm)

Tabulated Cross-Section Properties // E2-1

(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
E2-1	0.000	73.245	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0149
E2-1	0.000	73.266	0.021	0.144	0.450	0.003	0.004	0.329	0.334	0.0149
E2-1	0.003	73.287	0.042	0.228	0.505	0.014	0.026	0.658	0.668	0.0149
E2-1	0.009	73.307	0.062	0.299	0.541	0.031	0.076	0.988	1.002	0.0149
E2-1	0.020	73.328	0.083	0.362	0.567	0.055	0.163	1.317	1.335	0.0149
E2-1	0.036	73.349	0.104	0.421	0.589	0.086	0.295	1.646	1.669	0.0149
E2-1	0.064	73.372	0.127	0.513	0.618	0.125	0.527	1.787	1.818	0.0149
E2-1	0.100	73.395	0.150	0.592	0.640	0.168	0.819	1.928	1.966	0.0149
E2-1	0.143	73.419	0.174	0.663	0.657	0.215	1.169	2.069	2.115	0.0149
E2-1	0.193	73.442	0.197	0.728	0.672	0.264	1.580	2.209	2.263	0.0149
E2-1	0.250	73.465	0.220	0.788	0.685	0.317	2.053	2.350	2.412	0.0149
E2-1	0.315	73.488	0.243	0.844	0.696	0.374	2.588	2.491	2.560	0.0149
E2-1	0.389	73.511	0.266	0.897	0.707	0.433	3.188	2.632	2.709	0.0149
E2-1	0.470	73.535	0.290	0.948	0.716	0.496	3.854	2.773	2.857	0.0149
E2-1	0.559	73.558	0.313	0.996	0.724	0.562	4.589	2.914	3.006	0.0149
E2-1	0.657	73.581	0.336	1.042	0.732	0.631	5.394	3.055	3.154	0.0149
E2-1	0.775	73.606	0.361	1.077	0.818	0.720	6.361	4.076	4.185	0.0149
E2-1	0.914	73.631	0.386	1.095	0.864	0.835	7.500	5.098	5.216	0.0149
E2-1	1.080	73.656	0.411	1.108	0.887	0.975	8.864	6.119	6.248	0.0149
E2-1	1.117	73.661	0.416	1.110	0.891	1.006	9.165	6.353	6.483	0.0149
E2-1	1.148	73.665	0.420	1.112	0.908	1.032	9.415	6.762	6.894	0.0149
E2-1	1.305	73.684	0.439	1.103	0.976	1.183	10.706	9.085	9.224	0.0149
E2-1	1.499	73.703	0.458	1.088	1.000	1.378	12.298	11.407	11.554	0.0149
E2-1	1.500	73.705	0.460	1.070	1.039	1.402	12.309	12.957	13.105	0.0149
E2-1	1.563	73.710	0.465	1.065	1.035	1.468	12.827	13.596	13.745	0.0149
E2-1	1.577	73.711	0.466	1.064	1.033	1.482	12.934	13.713	13.863	0.0149
E2-1	1.603	73.713	0.468	1.062	1.032	1.510	13.151	13.994	14.145	0.0149
E2-1	1.980	73.738	0.493	1.035	1.020	1.912	16.243	18.228	18.389	0.0149
E2-1	1.990	73.739	0.494	1.031	1.013	1.931	16.327	18.304	18.465	0.0149
E2-1	2.050	73.742	0.497	1.033	1.005	1.986	16.821	18.459	18.621	0.0149
E2-1	2.434	73.760	0.515	1.046	0.965	2.327	19.973	19.436	19.604	0.0149
E2-1	2.962	73.781	0.536	1.067	0.987	2.775	24.298	23.269	23.444	0.0149
E2-1	2.989	73.782	0.537	1.068	0.990	2.799	24.522	23.583	23.758	0.0149
E2-1	3.164	73.788	0.543	1.074	1.001	2.945	25.956	25.075	25.251	0.0149
E2-1	3.196	73.789	0.544	1.076	0.999	2.970	26.217	25.099	25.275	0.0149
E2-1	4.078	73.814	0.569	1.132	0.962	3.603	33.457	25.527	25.706	0.0149
E2-1	5.104	73.839	0.594	1.202	0.949	4.246	41.871	25.955	26.137	0.0149
E2-1	6.262	73.864	0.619	1.278	0.947	4.900	51.375	26.383	26.568	0.0149
E2-1	7.548	73.889	0.644	1.356	0.950	5.565	61.922	26.811	26.999	0.0149
E2-1	8.955	73.914	0.669	1.435	0.957	6.241	73.471	27.239	27.431	0.0149

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
E2-1	10.029	73.932	0.687	1.489	0.963	6.734	82.282	27.615	27.809	0.0149
E2-1	11.164	73.950	0.705	1.543	0.969	7.235	91.591	27.992	28.188	0.0149
E2-1	12.358	73.968	0.723	1.596	0.976	7.742	101.388	28.369	28.567	0.0149
E2-1	13.773	73.988	0.743	1.659	0.990	8.301	112.995	28.982	29.181	0.0149
E2-1	15.259	74.007	0.762	1.720	1.003	8.873	125.189	29.595	29.796	0.0149
E2-1	16.994	74.029	0.784	1.783	1.016	9.532	139.422	30.376	30.578	0.0149
E2-1	18.822	74.051	0.806	1.844	1.028	10.209	154.417	31.157	31.360	0.0149
E2-1	20.203	74.067	0.822	1.884	1.053	10.721	165.753	32.837	33.040	0.0149
E2-1	21.096	74.077	0.832	1.908	1.074	11.057	173.074	34.404	34.608	0.0149
E2-1	21.371	74.080	0.835	1.915	1.075	11.161	175.333	34.532	34.736	0.0149
E2-1	23.052	74.099	0.854	1.949	1.080	11.827	189.124	35.607	35.812	0.0149
E2-1	24.821	74.118	0.873	1.984	1.084	12.513	203.637	36.682	36.888	0.0149
E2-1	24.917	74.119	0.874	1.985	1.086	12.551	204.427	36.866	37.071	0.0149
E2-1	25.206	74.122	0.877	1.991	1.095	12.662	206.791	37.607	37.813	0.0149
E2-1	26.529	74.135	0.890	2.014	1.131	13.171	217.647	40.726	40.933	0.0149
E2-1	27.973	74.149	0.904	2.034	1.143	13.755	229.497	42.617	42.825	0.0149
E2-1	29.454	74.163	0.918	2.055	1.139	14.334	241.647	43.220	43.429	0.0149
E2-1	31.014	74.176	0.931	2.078	1.137	14.922	254.442	43.823	44.032	0.0149
E2-1	32.634	74.191	0.946	2.094	1.134	15.587	267.731	44.823	45.032	0.0149
E2-1	33.401	74.198	0.953	2.100	1.135	15.903	274.029	45.557	45.767	0.0149
E2-1	33.512	74.199	0.954	2.101	1.138	15.948	274.939	45.891	46.101	0.0149
E2-1	34.187	74.205	0.960	2.106	1.163	16.232	280.475	48.561	48.771	0.0149
E2-1	35.609	74.215	0.970	2.129	1.182	16.727	292.141	50.562	50.773	0.0149
E2-1	39.322	74.240	0.995	2.183	1.184	18.009	322.600	51.976	52.188	0.0149
E2-1	42.032	74.257	1.012	2.224	1.186	18.900	344.842	52.752	52.965	0.0149
E2-1	44.913	74.275	1.030	2.265	1.190	19.832	368.474	53.754	53.967	0.0149
E2-1	47.902	74.292	1.047	2.305	1.195	20.781	392.995	54.756	54.970	0.0149
E2-1	48.601	74.296	1.051	2.314	1.214	21.004	398.727	56.707	56.921	0.0149
E2-1	49.633	74.303	1.058	2.319	1.213	21.403	407.193	57.464	57.678	0.0149
E2-1	50.500	74.308	1.063	2.328	1.219	21.693	414.307	58.387	58.601	0.0149
E2-1	52.146	74.317	1.072	2.346	1.226	22.224	427.818	59.531	59.746	0.0149
E2-1	55.875	74.337	1.091	2.388	1.226	23.394	458.406	60.450	60.665	0.0149
E2-1	59.753	74.356	1.111	2.431	1.226	24.581	490.224	61.368	61.584	0.0149
E2-1	63.235	74.373	1.128	2.467	1.228	25.632	518.793	62.298	62.514	0.0149
E2-1	66.831	74.390	1.145	2.503	1.230	26.699	548.294	63.227	63.445	0.0149
E2-1	67.262	74.392	1.147	2.507	1.244	26.827	551.825	64.834	65.052	0.0149
E2-1	67.592	74.394	1.149	2.507	1.243	26.957	554.535	65.027	65.244	0.0149
E2-1	71.811	74.413	1.168	2.546	1.249	28.208	589.150	66.602	66.821	0.0149
E2-1	76.597	74.434	1.188	2.589	1.247	29.581	628.413	67.323	67.543	0.0149
E2-1	81.557	74.454	1.209	2.634	1.246	30.968	669.104	68.044	68.265	0.0149
E2-1	87.619	74.478	1.233	2.687	1.246	32.610	718.837	68.755	68.978	0.0149
E2-1	93.912	74.502	1.257	2.741	1.246	34.268	770.473	69.467	69.691	0.0149
E2-1	100.440	74.526	1.281	2.794	1.247	35.944	824.025	70.178	70.404	0.0149
E2-1	102.402	74.533	1.288	2.811	1.246	36.435	840.119	70.300	70.526	0.0149

Tabulated Cross-Section Properties // E2-2

(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
E2-2	0.000	70.518	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0147
E2-2	0.003	70.544	0.026	0.167	0.468	0.018	0.024	1.355	1.359	0.0147
E2-2	0.021	70.574	0.056	0.339	0.557	0.063	0.175	1.666	1.676	0.0147
E2-2	0.054	70.604	0.086	0.457	0.600	0.117	0.442	1.977	1.994	0.0147
E2-2	0.100	70.633	0.116	0.553	0.629	0.181	0.825	2.288	2.311	0.0147
E2-2	0.161	70.663	0.145	0.637	0.651	0.253	1.333	2.598	2.628	0.0147
E2-2	0.239	70.693	0.175	0.712	0.669	0.336	1.972	2.909	2.946	0.0147
E2-2	0.333	70.723	0.205	0.780	0.684	0.427	2.753	3.220	3.263	0.0147
E2-2	0.443	70.752	0.234	0.843	0.697	0.525	3.655	3.522	3.571	0.0147
E2-2	0.570	70.781	0.263	0.903	0.709	0.631	4.706	3.823	3.878	0.0147
E2-2	0.716	70.810	0.292	0.959	0.720	0.747	5.914	4.124	4.186	0.0147
E2-2	0.883	70.839	0.321	1.014	0.730	0.871	7.287	4.425	4.493	0.0147
E2-2	1.070	70.868	0.350	1.066	0.739	1.003	8.833	4.727	4.801	0.0147
E2-2	1.279	70.897	0.379	1.117	0.747	1.145	10.558	5.028	5.108	0.0147
E2-2	1.325	70.903	0.385	1.128	0.749	1.175	10.940	5.088	5.170	0.0147
E2-2	1.574	70.932	0.414	1.187	0.758	1.326	12.996	5.317	5.407	0.0147
E2-2	1.845	70.961	0.443	1.243	0.767	1.485	15.237	5.546	5.644	0.0147
E2-2	2.140	70.990	0.472	1.297	0.775	1.649	17.669	5.775	5.880	0.0147
E2-2	2.458	71.019	0.501	1.350	0.783	1.821	20.294	6.005	6.117	0.0147
E2-2	2.800	71.049	0.531	1.401	0.790	1.999	23.117	6.234	6.354	0.0147
E2-2	3.166	71.078	0.560	1.450	0.796	2.184	26.142	6.463	6.591	0.0147
E2-2	3.557	71.107	0.589	1.498	0.803	2.375	29.374	6.692	6.827	0.0147
E2-2	3.974	71.136	0.618	1.544	0.809	2.573	32.816	6.921	7.064	0.0147
E2-2	4.417	71.165	0.647	1.590	0.814	2.778	36.473	7.150	7.301	0.0147
E2-2	4.885	71.195	0.677	1.630	0.819	2.997	40.334	7.429	7.587	0.0147
E2-2	5.382	71.225	0.707	1.669	0.824	3.224	44.443	7.709	7.874	0.0147
E2-2	5.911	71.255	0.737	1.709	0.829	3.459	48.807	7.988	8.160	0.0147
E2-2	6.471	71.285	0.767	1.747	0.834	3.703	53.430	8.267	8.447	0.0147
E2-2	7.063	71.315	0.797	1.786	0.838	3.955	58.320	8.547	8.733	0.0147
E2-2	7.648	71.341	0.823	1.828	0.854	4.183	63.148	8.963	9.153	0.0147
E2-2	8.259	71.367	0.849	1.868	0.869	4.422	68.197	9.380	9.573	0.0147
E2-2	8.800	71.386	0.868	1.907	0.933	4.614	72.665	10.832	11.027	0.0147
E2-2	8.917	71.390	0.872	1.915	0.941	4.657	73.632	11.029	11.224	0.0147
E2-2	8.976	71.392	0.874	1.918	1.011	4.681	74.119	12.757	12.952	0.0147
E2-2	9.127	71.397	0.879	1.921	1.096	4.751	75.361	15.178	15.374	0.0147
E2-2	9.127	71.397	0.879	1.921	1.096	4.751	75.361	15.178	15.374	0.0147
E2-2	9.806	71.418	0.900	1.922	1.163	5.103	80.967	18.347	18.544	0.0147
E2-2	9.909	71.421	0.903	1.921	1.172	5.159	81.817	18.839	19.036	0.0147
E2-2	9.978	71.423	0.905	1.920	1.175	5.197	82.394	19.083	19.281	0.0147
E2-2	10.049	71.425	0.907	1.920	1.178	5.235	82.978	19.351	19.549	0.0147
E2-2	10.085	71.426	0.908	1.919	1.230	5.255	83.272	21.175	21.373	0.0147
E2-2	10.157	71.428	0.910	1.917	1.257	5.299	83.865	22.341	22.540	0.0147
E2-2	10.691	71.442	0.924	1.897	1.294	5.635	88.275	25.700	25.900	0.0147
E2-2	10.772	71.444	0.926	1.894	1.297	5.687	88.943	26.145	26.345	0.0147
E2-2	10.802	71.445	0.927	1.891	1.293	5.713	89.190	26.227	26.428	0.0147
E2-2	12.075	71.473	0.955	1.863	1.251	6.482	99.707	28.695	28.899	0.0147
E2-2	12.319	71.478	0.960	1.859	1.249	6.627	101.723	29.353	29.557	0.0147
E2-2	12.975	71.491	0.973	1.848	1.250	7.023	107.137	31.520	31.725	0.0147
E2-2	13.247	71.496	0.978	1.845	1.245	7.182	109.385	32.121	32.328	0.0147

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
E2-2	14.225	71.513	0.995	1.836	1.233	7.746	117.458	34.237	34.445	0.0147
E2-2	15.243	71.529	1.011	1.835	1.213	8.305	125.861	35.582	35.792	0.0147
E2-2	15.805	71.538	1.020	1.831	1.218	8.633	130.507	37.471	37.681	0.0147
E2-2	16.218	71.544	1.026	1.831	1.208	8.859	133.913	37.819	38.030	0.0147
E2-2	16.660	71.550	1.032	1.833	1.199	9.087	137.561	38.158	38.369	0.0147
E2-2	16.907	71.554	1.036	1.829	1.208	9.242	139.601	39.515	39.726	0.0147
E2-2	19.420	71.585	1.067	1.850	1.174	10.498	160.350	41.471	41.683	0.0147
E2-2	20.824	71.601	1.083	1.864	1.163	11.171	171.944	42.638	42.851	0.0147
E2-2	21.634	71.610	1.092	1.872	1.158	11.558	178.639	43.421	43.634	0.0147
E2-2	24.131	71.636	1.118	1.898	1.147	12.714	199.252	45.540	45.753	0.0147
E2-2	24.320	71.638	1.120	1.899	1.146	12.806	200.815	45.779	45.992	0.0147
E2-2	25.628	71.652	1.134	1.904	1.149	13.463	211.614	48.091	48.304	0.0147
E2-2	25.730	71.653	1.135	1.904	1.148	13.511	212.458	48.195	48.409	0.0147
E2-2	26.730	71.662	1.144	1.916	1.144	13.947	220.710	48.745	48.959	0.0147
E2-2	28.692	71.679	1.161	1.939	1.152	14.797	236.917	51.278	51.494	0.0147
E2-2	30.512	71.694	1.176	1.959	1.152	15.579	251.940	52.895	53.111	0.0147
E2-2	30.512	71.694	1.176	1.959	1.152	15.579	251.940	52.895	53.111	0.0147
E2-2	32.007	71.708	1.190	1.959	1.158	16.341	264.286	56.083	56.301	0.0147
E2-2	32.007	71.708	1.190	1.959	1.158	16.341	264.286	56.083	56.301	0.0147
E2-2	33.156	71.717	1.199	1.968	1.158	16.852	273.775	57.282	57.500	0.0147
E2-2	33.933	71.723	1.205	1.973	1.168	17.201	280.193	59.148	59.366	0.0147
E2-2	34.870	71.730	1.212	1.979	1.168	17.619	287.928	60.250	60.469	0.0147
E2-2	35.784	71.738	1.220	1.976	1.170	18.109	295.477	62.314	62.534	0.0147
E2-2	36.585	71.745	1.227	1.972	1.172	18.552	302.088	64.280	64.501	0.0147
E2-2	37.705	71.752	1.234	1.984	1.168	19.003	311.336	64.575	64.796	0.0147
E2-2	38.505	71.757	1.239	1.992	1.165	19.327	317.942	64.869	65.089	0.0147
E2-2	42.338	71.780	1.262	2.032	1.154	20.831	349.589	65.910	66.131	0.0147
E2-2	47.730	71.810	1.292	2.091	1.145	22.826	394.117	67.136	67.357	0.0147
E2-2	47.917	71.811	1.293	2.093	1.156	22.894	395.658	68.480	68.702	0.0147
E2-2	51.434	71.828	1.311	2.134	1.154	24.098	424.699	69.096	69.318	0.0147
E2-2	55.097	71.846	1.328	2.177	1.153	25.313	454.945	69.712	69.934	0.0147
E2-2	60.356	71.870	1.352	2.236	1.151	26.991	498.364	70.135	70.357	0.0147
E2-2	65.875	71.894	1.376	2.297	1.150	28.679	543.937	70.557	70.780	0.0147
E2-2	71.653	71.918	1.400	2.359	1.151	30.377	591.646	70.980	71.204	0.0147
E2-2	77.597	71.942	1.424	2.420	1.153	32.062	640.729	71.402	71.627	0.0147
E2-2	83.783	71.965	1.447	2.482	1.156	33.757	691.810	71.825	72.050	0.0147
E2-2	90.209	71.989	1.471	2.544	1.159	35.462	744.865	72.247	72.473	0.0147
E2-2	94.338	72.004	1.486	2.581	1.168	36.555	778.962	73.515	73.741	0.0147
E2-2	98.913	72.020	1.502	2.621	1.173	37.737	816.741	74.149	74.375	0.0147
E2-2	103.599	72.036	1.518	2.661	1.178	38.928	855.429	74.782	75.008	0.0147
E2-2	109.164	72.055	1.537	2.708	1.182	40.318	901.385	75.416	75.643	0.0147
E2-2	114.876	72.073	1.555	2.754	1.187	41.718	948.550	76.050	76.277	0.0147
E2-2	120.523	72.091	1.573	2.796	1.196	43.099	995.178	77.317	77.544	0.0147
E2-2	127.322	72.112	1.594	2.846	1.204	44.736	1051.312	78.585	78.812	0.0147

Annex C - EA Product Data

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]

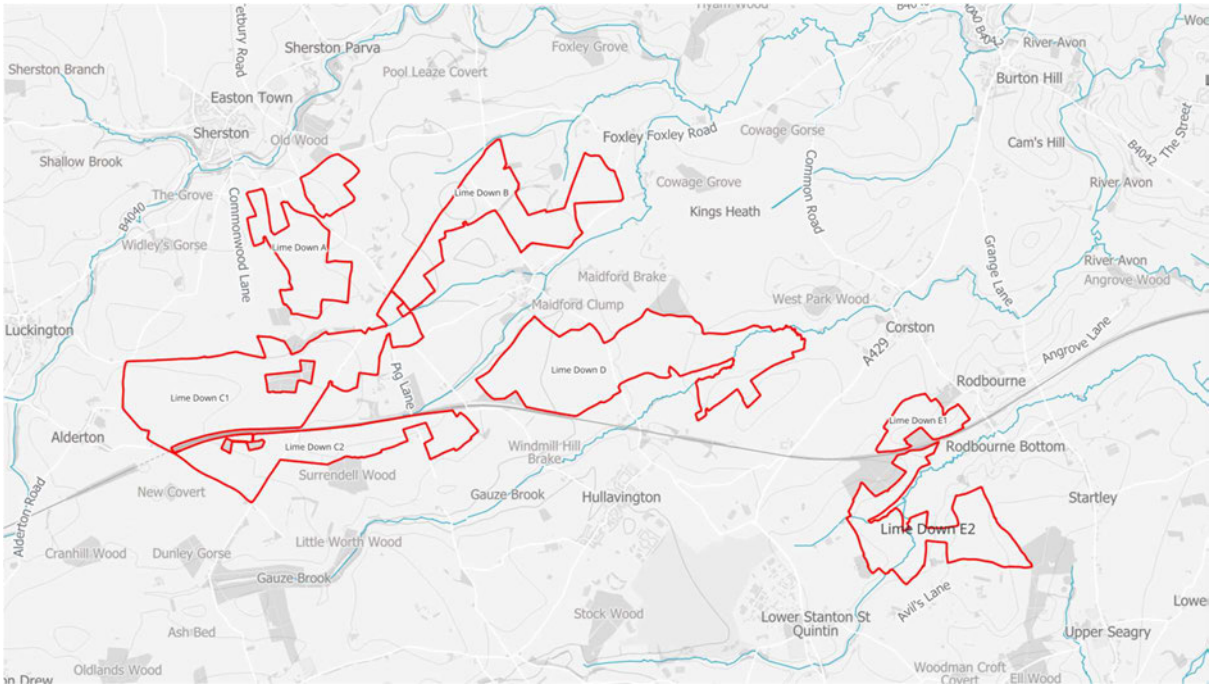
Environment Agency, Wessex Enquiries, Customer & Engagement Team

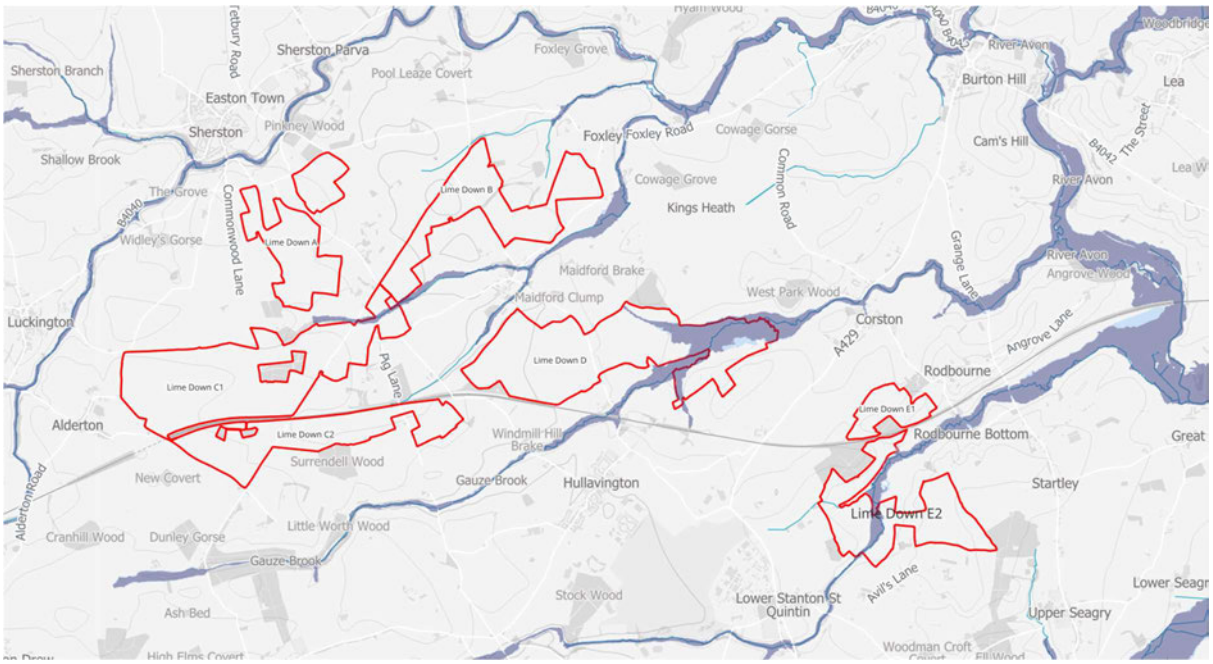
03708 506 506.- Wessex Enquiries

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], BSc (Hons) MSc GradCIWEM

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

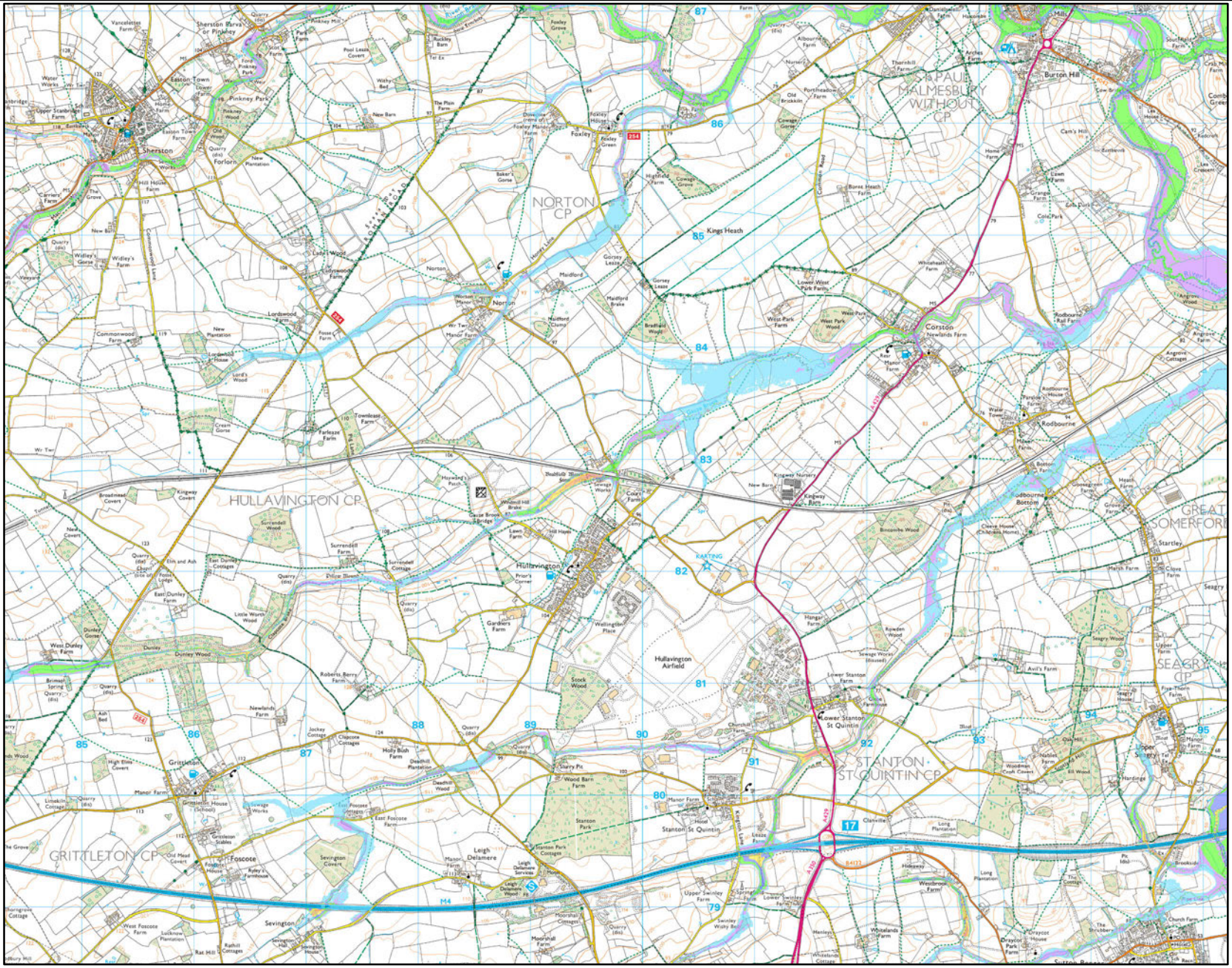
Metres

- 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.

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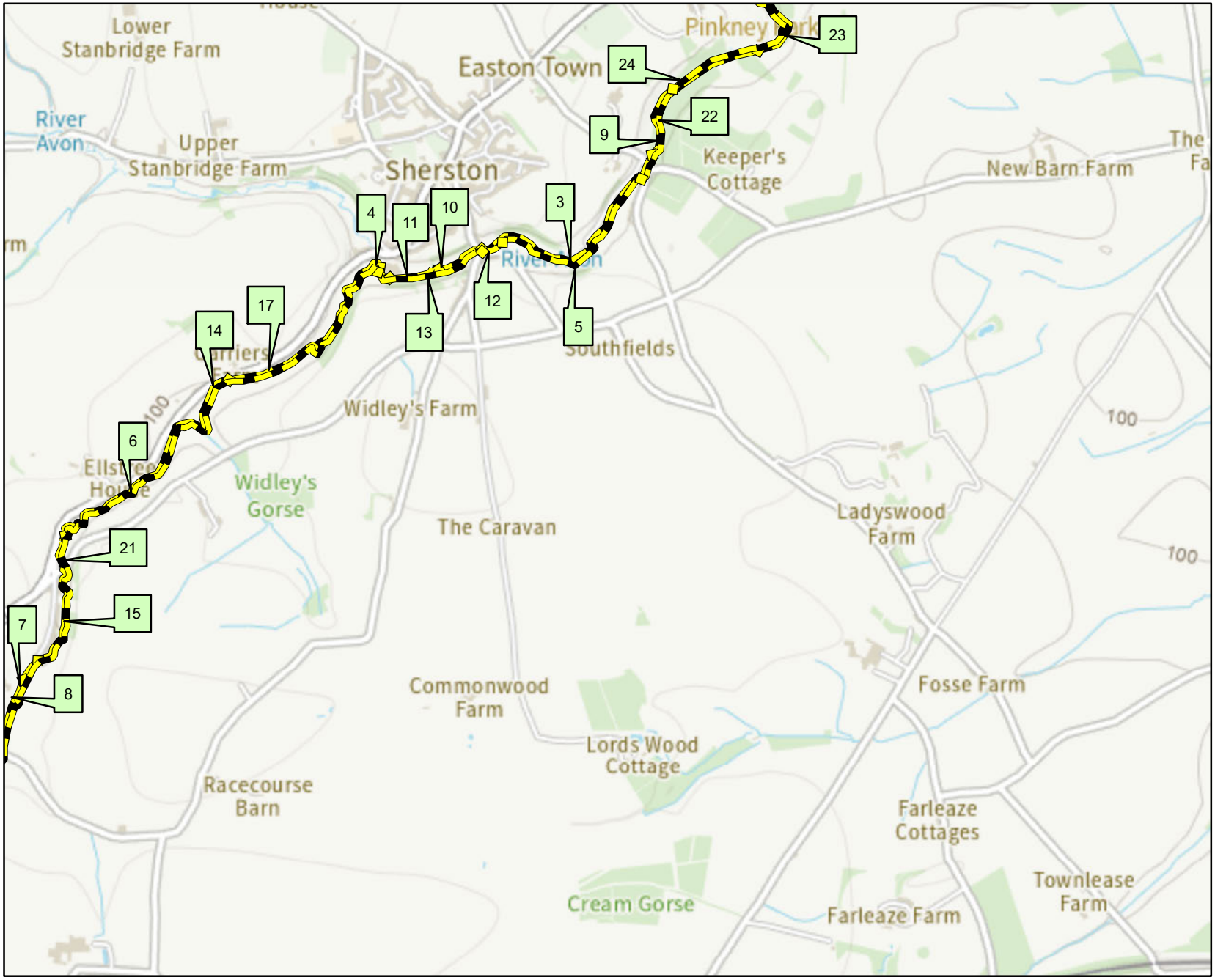
Current Flood Defences centered on NGR ST 85982 84814 Created 22/10/2024 Ref: 381197-WX



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.

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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

[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://check-long-term-flood-risk.service.gov.uk/postcode
[vii] https://wiltscouncil.maps.arcgis.com/apps/webappviewer/index.html?id=28c00215d87b468a9a0cd79c63d3d270
[viii] https://www.landis.org.uk/soilscapes/