Green Hill Solar Farm
EN010170

Environmental Statement
Appendix 10.10: Flood Risk Assessment and Drainage Strategy Annex I: Green Hill G

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Appendix 10.10: Annex I - Flood Risk Assessment and Drainage Strategy – Green Hill G

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Site: Green Hill G

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1. Site Details

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

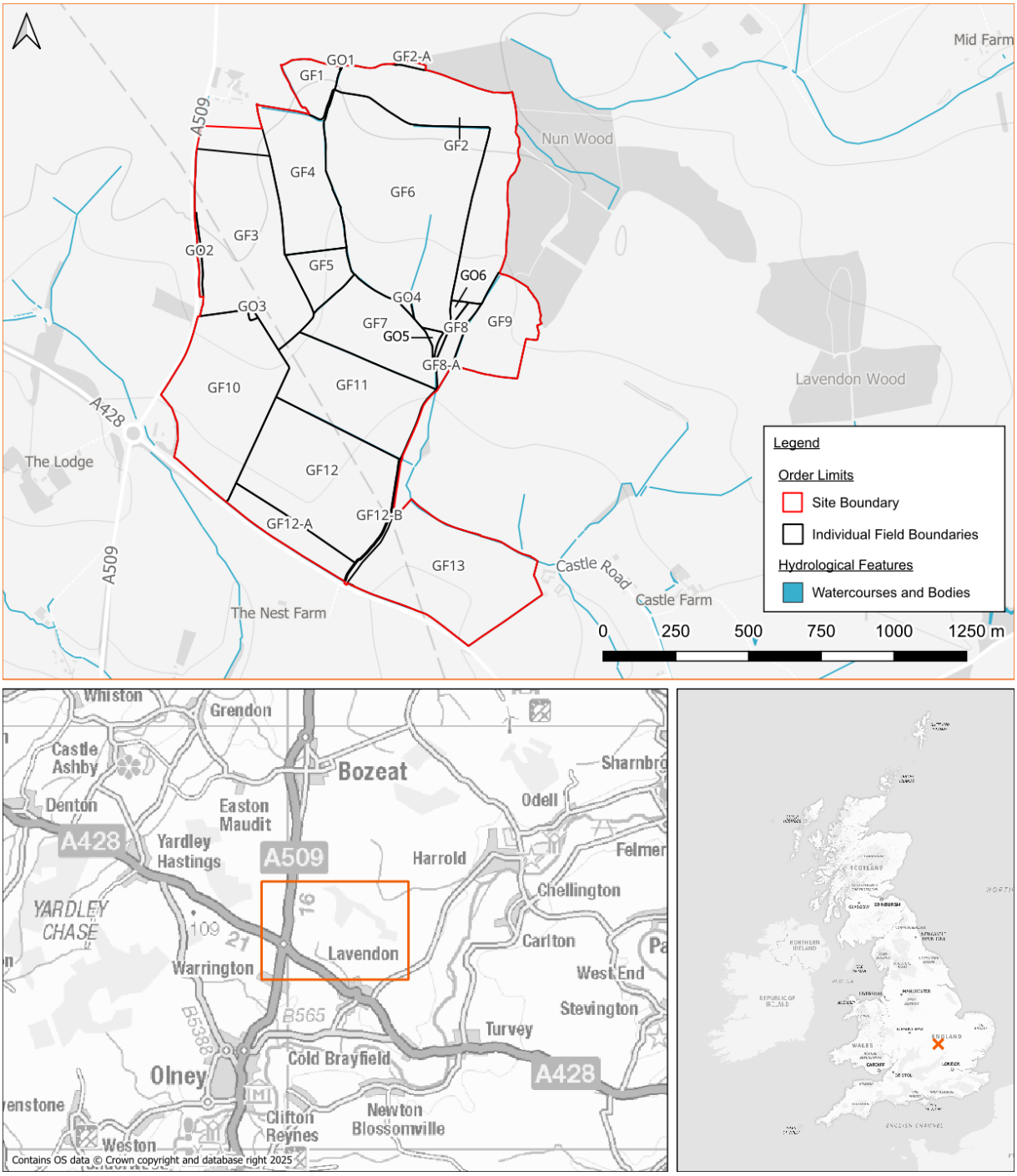

Figure 1: Site Location Plan

1.1 Site Location

1.1.1 Green Hill G is situated northwest of Lavendon in the City of Milton Keynes. The Site is also situated north

adjacent to the A428 and the A509 to the east of the Site. The National Grid Reference for Green Hill G is approximately 490380, 256120 in the north (GF1) to 490230, 254580 in the south (GF12-A), and 490070, 255450 in the west (GF3) to 491200, 255220 in the east (GF9).

1.2 Existing Site Conditions

1.2.1 Online mapping (including Google Maps / Google Streetview imagery, accessed 08/08/2024)[i] shows that Greenhill G comprises agricultural / arable fields; However, there is a petrol station on the boarder of the southwest of the Site. Access and egress to the Site can be provided via the A428 to the south of the Site or alternatively the A509 to the west of the Site.

1.3 Topography

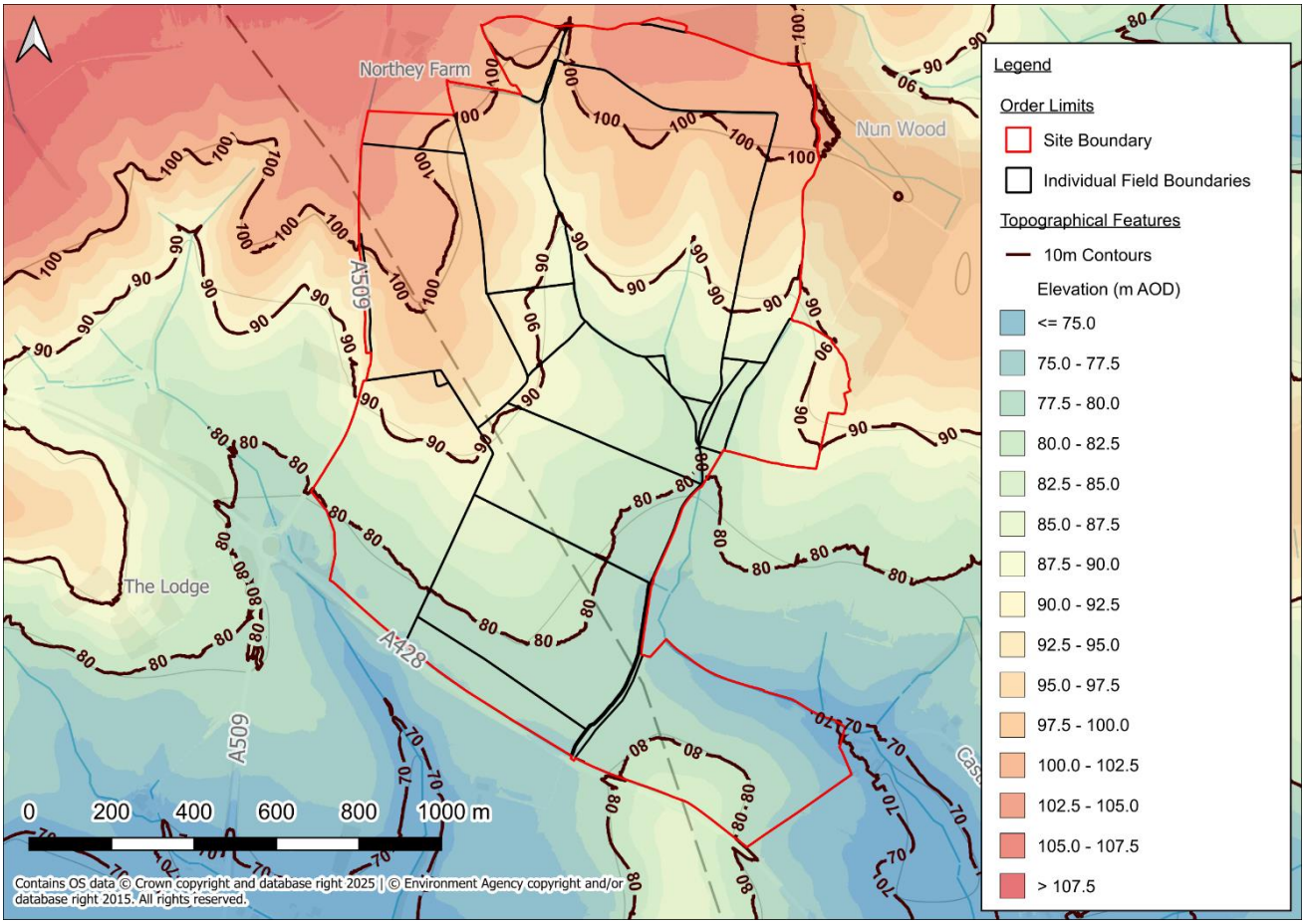

Figure 2: LiDAR Plan

1.3.1 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 the Site slopes from approximately 103m AOD in the northwest to approximately 69m AOD in the southeast (Figure 2).

1.4 Hydrology

1.4.1 The nearest watercourse is the River Great Ouse which is located approximately 1.8 km south of the Site

at its closest point. The River Great Ouse flows in a North-easterly direction. Other watercourses in the area include several unnamed land drains located in the near vicinity of the Site.

1.4.2 Main Rivers fall under the responsibility of the EA, which holds permissive powers to manage flood risk. The EA is not responsible for routine maintenance, which remains the responsibility of riparian landowners unless otherwise undertaken by the EA.

1.5 Water Framework Directive Status

1.5.1 Green Hill G is located within the Nene Catchment, specifically the Ouse (Newport Pagnell to Rocton)[ii]. The Ouse (Newport Pagnell to Rocton) 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).

1.5.2 A summary of the Water Body Classification for the catchment is included as Annex A.

1.6 Geology

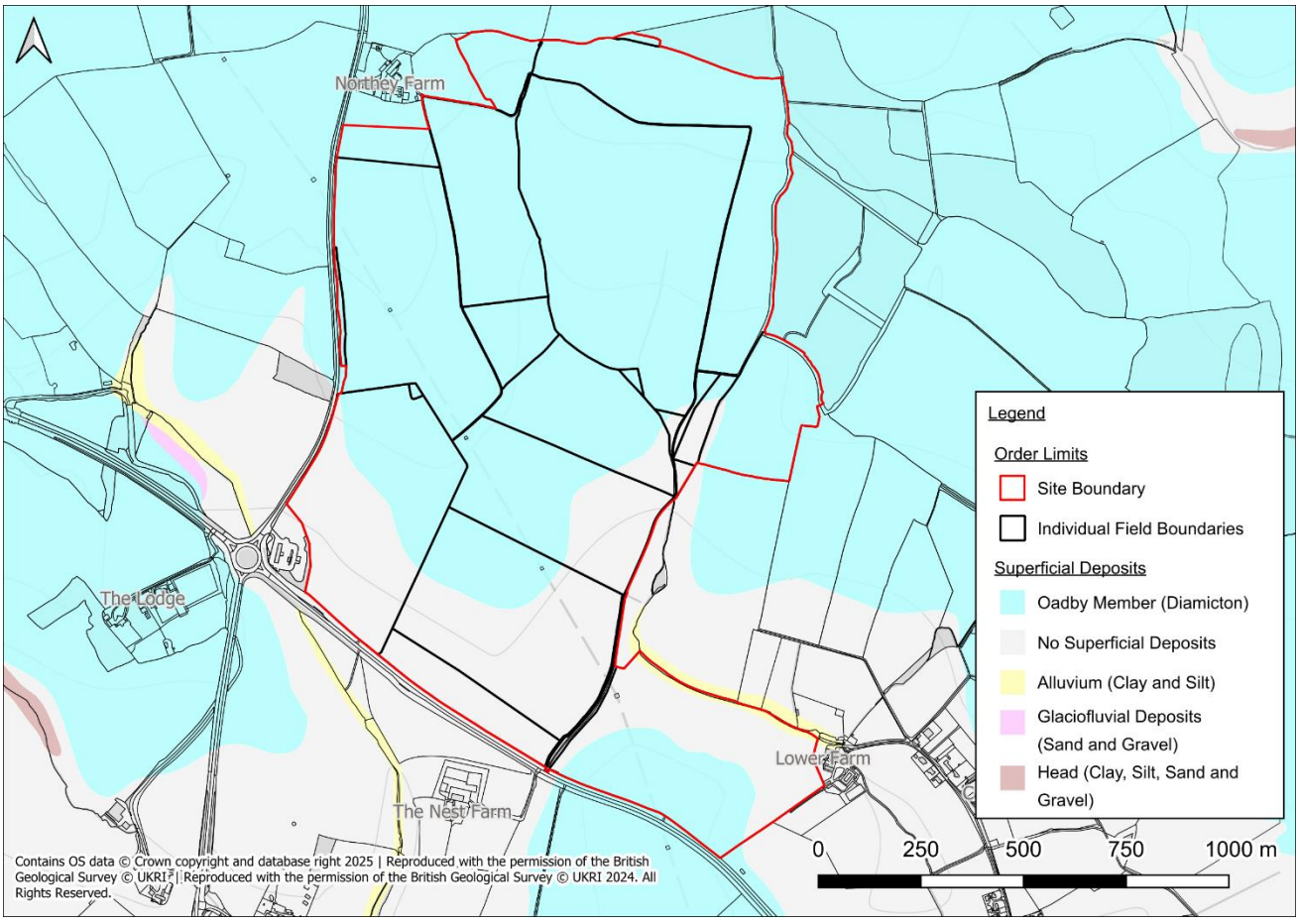

Figure 3: Superficial Deposits

1.6.1 Reference to the British Geological Survey (BGS) online mapping[iii] (1:50,000 scale) indicates that the Site is underlain by superficial deposits of Oadby Member generally comprising Diamicton (Figure 3). The superficial deposits are identified as being underlain by Cornbrash Formation consisting of Limestone (Figure 4).

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

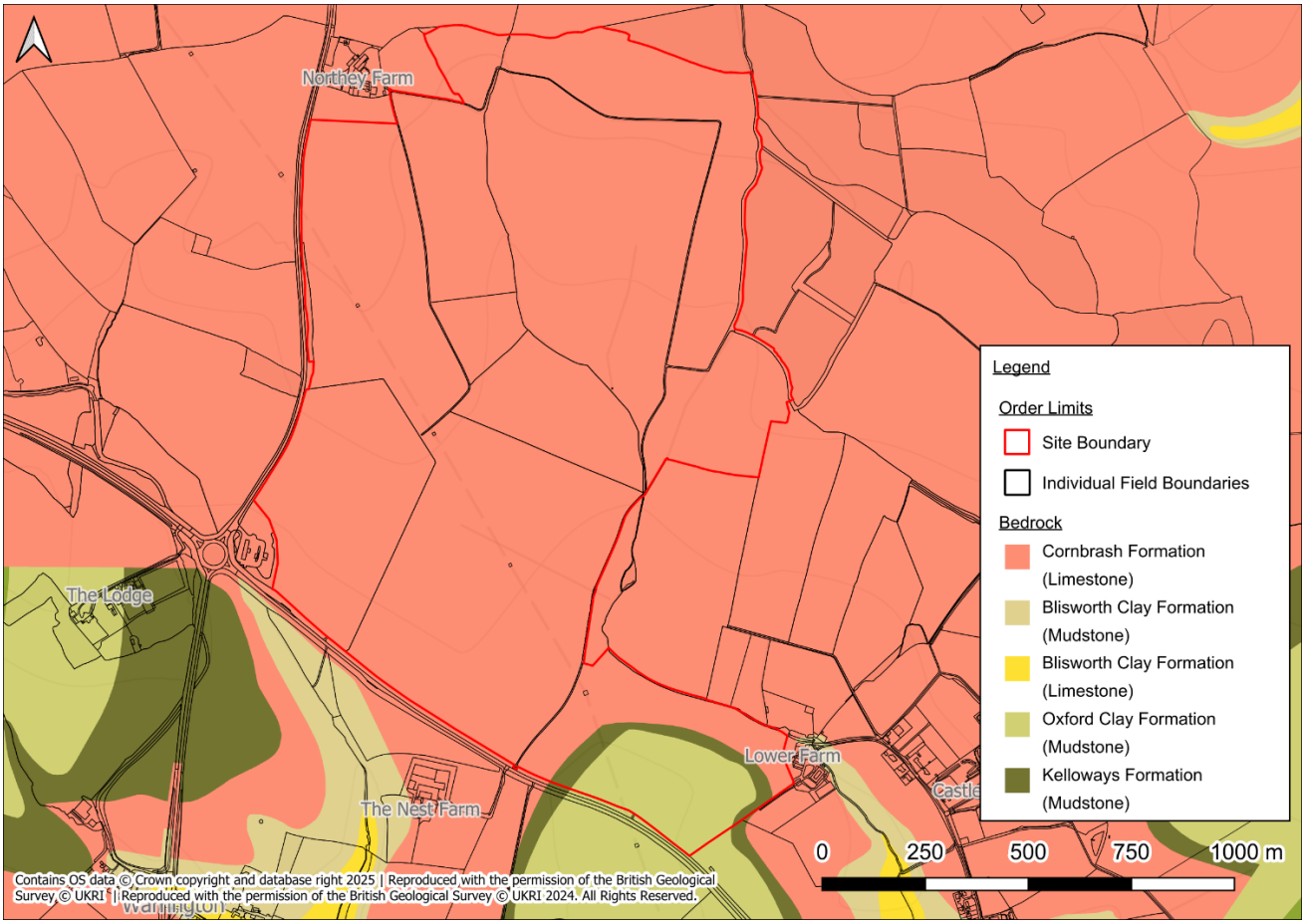

Figure 4: Bedrock Deposits

1.6.3 The closest historical BGS borehole record (BGS Ref: SP95SW29) is located approximately 165m east of GF13 (the Site) (NGR 491259, 253962). The borehole record indicates that the following geology was encountered:

- Topsoil to 0.3m below ground level (bgl);
- Bedded sandy and shelly limestone from 0.3m to 0.55m bgl;
- Light brown clayey, silty, sandy limestone from 0.55m to 1.25m bgl;
- Medium dense clayey sand with limestone gravel from 1.25m to 1.70m bgl; and
- Dark greyish-brown sandy, shelly limestone from 1.70m to 2.10m bgl.

1.6.4 No water strikes have been recorded in this borehole.

1.6.5 BGS borehole (Ref: SP95SW29) is located to the east of parcel GF13. Due to the size of the Site the BGS borehole is unlikely to be representative for other fields across the Site.

1.7 Hydrogeology

1.7.1 According to the EA's Aquifer Designation data, obtained from MAGIC Map's online mapping[iv] [accessed 08/08/2024], the Oadby Member is classified as a Secondary Undifferentiated Aquifer.

1.7.2 The underlying Cornbrash Formation is described as a Secondary A and B Aquifer.

1.7.3 The EA's 'Source Protection Zones' data, obtained from MAGIC Map's online mapping [accessed 14/08/2024], indicates that the Site is not located within a Groundwater Source Protection Zone.

1.8 Proposed Site Conditions

1.8.1 The Scheme at Green Hill G comprises a ground-mounted solar photovoltaic plant, associated electrical infrastructure, and an access road. An Outline Landscape and Ecological Management Plan (OLEMP) [EN010170/APP/GH7.4] has been developed to support the DCO application, and confirms that the majority of the Site will be used for solar panels, supporting infrastructure, and internal access. Peripheral areas will accommodate landscaped buffers, in line with the embedded mitigation set out in the ES.

1.8.2 A substation is proposed to the south-east of Field GF3.

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 Green Hill G.

2.2 Fluvial Flood Risk

2.2.1 The nearest Main River is the River Great Ouse which is located approximately 1.8 km south of Green Hill G at its closest point. The River Great Ouse flows in a northeasterly direction. Other watercourses in the area include various unnamed land drains within the boundary or the near vicinity of Green Hill G.

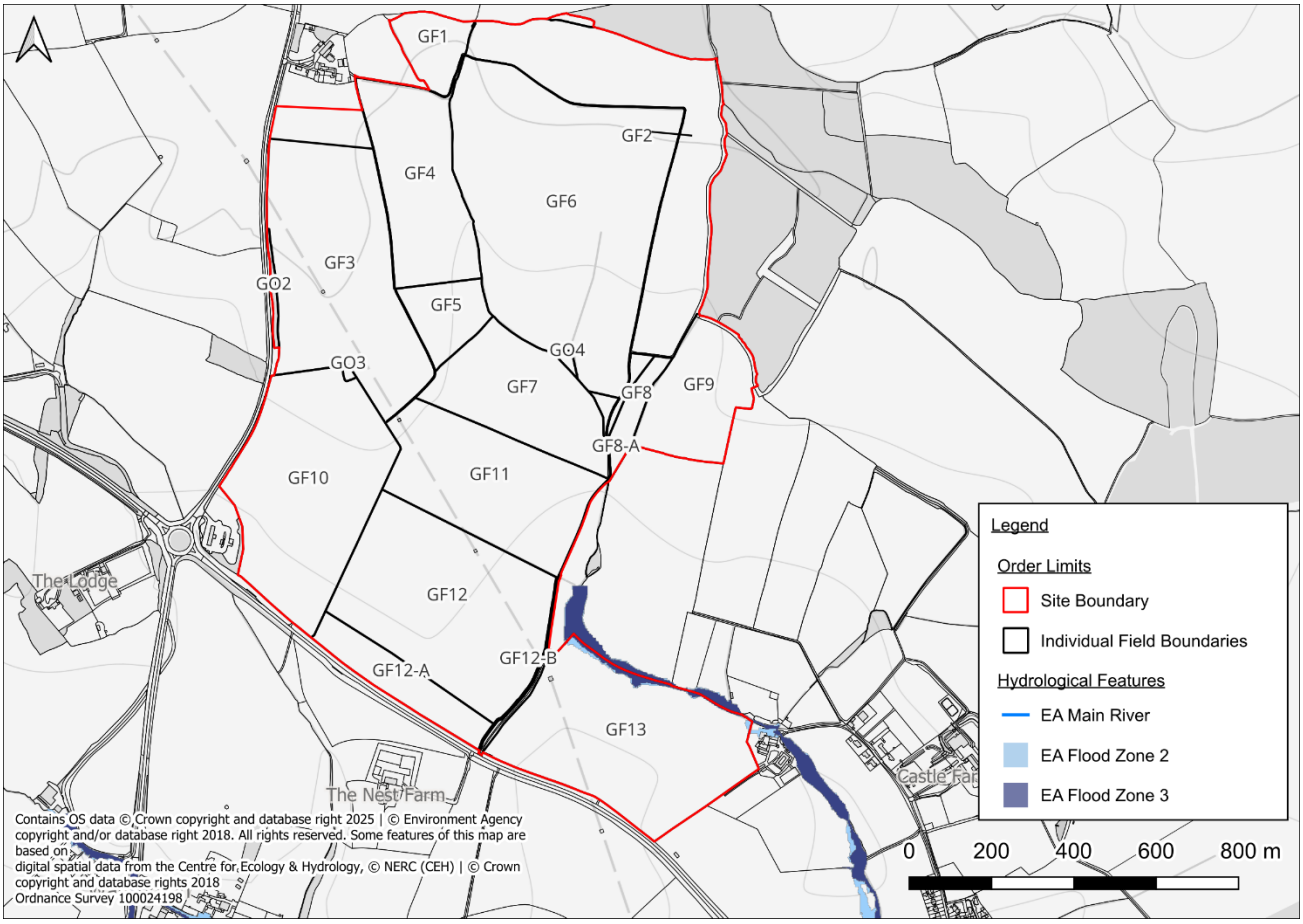

Figure 5: EA's Flood Map for Planning

2.2.2 Various land drainage ditches are located within and along the boundary of Green Hill G. Flows within the ditches are expected to flow generally in a southernly direction based on local topography. All of the land drains are classified as ordinary watercourses. These fall under the regulatory remit of the LLFA, which has permissive powers to manage flood risk but is not responsible for routine maintenance. Maintenance responsibilities lie with the riparian landowners. By contrast, Main Rivers fall under the responsibility of the EA.

2.2.3 Fluvial flooding could occur if the land drains overtopped their banks during or following an extreme rainfall event. According to the EA's Flood Map for Planning[v] (updated March 2025), Green Hill G is largely situated in Flood Zone 1 (has less than a 1 in 1,000 annual probability of river or sea flooding), with the

exception of a small section of Field GF13 where the flood extents encroach the northern boundary, where Flood Zone extents are shown to encroach into the proposed panelled areas (Figure 5). However, these extents remain outside of any areas of proposed development in Green Hill G.

2.2.4 Green Hill G is situated at a minimum elevation of approximately 69 m AOD, the River Great Ouse is situated at approximately 41.5m AOD at its closest point and is therefore 34m below Green Hill G. Any out of channel flooding from the River Great Ouse is unlikely to flow towards Green Hill G.

2.2.5 The EA 'Historical Flood Map' indicates that Green Hill G has no recorded history of flooding either on the Site or in the immediate vicinity. However, this does not necessarily mean that the Site has never flooded, only that there is no documented record of such events.

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

2.2.7 Green Hill G is also not located within a Flood Warning Area.

2.2.8 The Manning's open channel flow formula has been used to demonstrate and quantify potential fluvial flood risk to the Site during a 1% AEP +58%CC fluvial event. Cross sections of existing watercourses and the wider floodplain have been extracted from EA LiDAR data (flown Q1 2020) and used to inform the calculations. More detail on these calculations is provided in Annex B. The flood levels estimated by the calculations suggest that the flood extent is low and that flood extents on Site would be similar to or smaller than the EA surface water flood extents, which can be used as a conservative proxy for fluvial flood risk where appropriate. Surface water flooding is assessed in Section 2.4 below.

2.2.9 Green Hill G is therefore considered to be at **Low** risk of fluvial flooding, the proposed solar panels will be raised above surrounding ground levels with associated power infrastructure appropriately located out of the flood zone and waterproofed.

2.3 Surface Water Flood Risk

2.3.1 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.

2.3.2 The NaFRA mapping provides an updated view of surface water flooding across the Sites, however it should be noted that at the time of writing, the NaFRA mapping only delivers climate change insight up to the year 2060.

2.3.3 The previous EA Risk of Flooding from Surface Water (RoFSW) mapping indicates that Green Hill G is largely at a at Very Low risk of surface water flooding (less than 0.1% annual probability of flooding). The risk increases to Low (between a 1% and 0.1% annual probability), Medium (between a 3.3% and 1% annual probability) and High risk (greater than 3.3% annual probability) of flooding associated with the watercourses that run through Green Hill G.

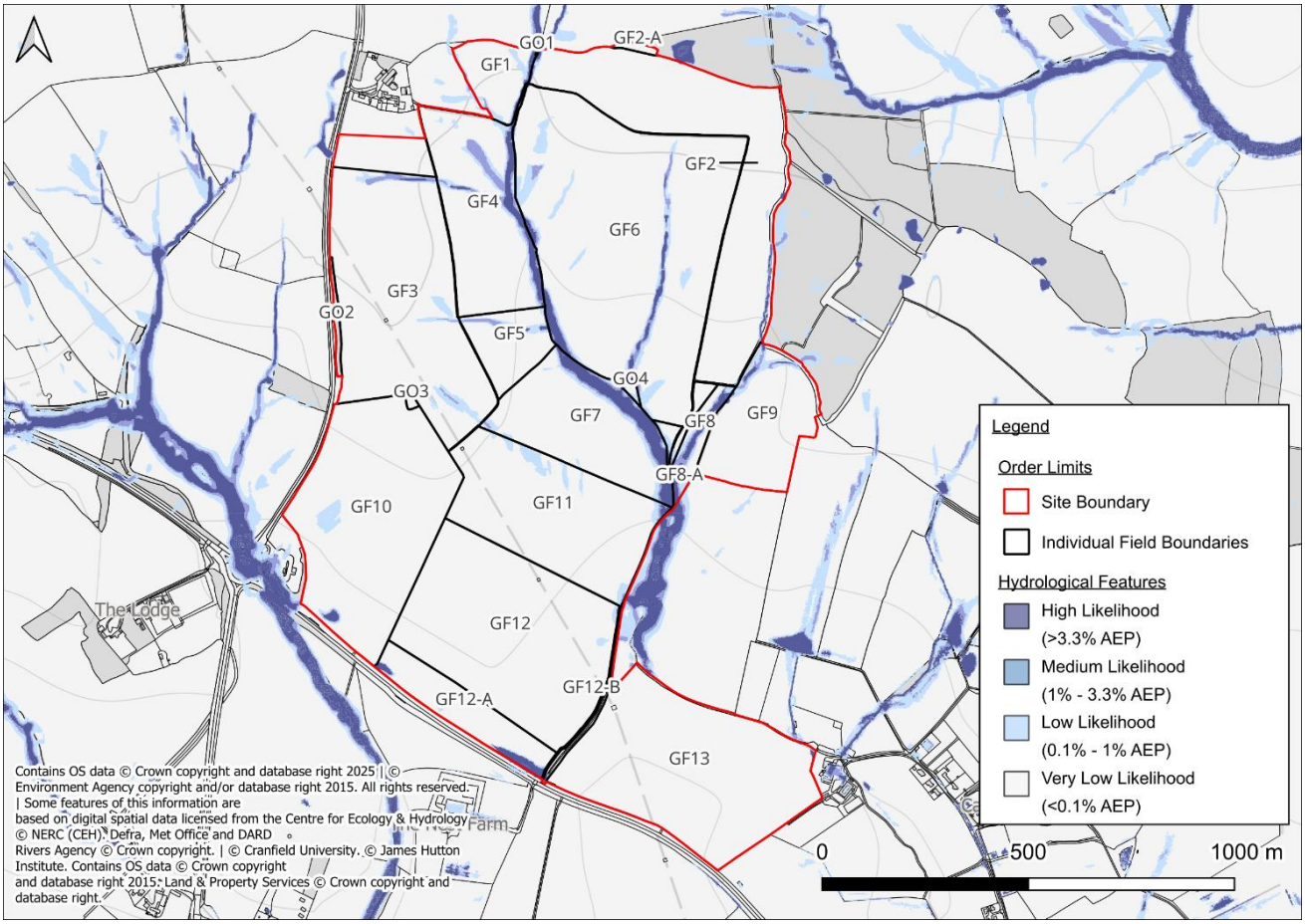

Figure 6: EA's Long-Term Flood Risk Map (Flood Risk from Surface Water)

2.3.4 It should be noted that the EA 'Flood Risk from Surface Water' map covering the Site is produced at a low resolution, which may not accurately represent Green Hill G's actual risk of surface water flooding.

2.3.5 There are no significant flow routes aside from those associated with the watercourse channel paths in the area that could direct surface water flooding toward Green Hill G.

2.3.6 The updated NaFRA mapping (Figure 6) has been assessed and indicates that Green Hill G surface water extents have reduced. As described in the fluvial section above, the surface water flooding extents largely correspond with the land drainage ditches which flow throughout Green Hill G.

2.3.7 The NaFRA surface water mapping indicates that the majority of Green Hill G has flood depths mainly below 0.3m, which is considered passable by vehicles and people. Only within the watercourses and the immediate areas surrounding them do depths exceed 0.3m, typically associated with topographic depressions.

2.3.8 There is no indication within relevant third party reports (listed in 'Sources of Information' on the Covering Report) to suggest that the Site has historically experienced surface water flooding.

2.3.9 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 at Green Hill G is considered to be **Low**. The proposed solar panels will be raised above surrounding ground levels and will be appropriately located out of the flood

zone and waterproofed thereby reducing the potential to be impacted in the event of surface water flooding.

2.3.10 The impact of the development on surface water risk is covered in Section 5.0 of the Covering Report to ensure that surface water risk is not exacerbated through appropriate SuDS measures.

2.4 Groundwater Flood Risk

2.4.1 A description of the geology at Green Hill G is included within section 1.0.

2.4.2 There is no information within relevant third party reports (listed 'Sources of Information' on the Covering Report) to suggest that Green Hill G has experienced historical groundwater flooding.

2.4.3 No buildings other than the supporting unstaffed infrastructure and no basement levels are identified on plans which may otherwise be at increased risk from groundwater seepage.

2.4.4 It can therefore be concluded that the risk of groundwater flooding is **Low**.

2.5 Sewer Flooding

2.5.1 No Site-specific incidents of sewer flooding have been identified from relevant third-party reports. On the basis of the Site's rural setting the presence of sewerage infrastructure is unlikely. Utility records have been checked and no sewers are identified within the Green Hill G. It can therefore be concluded that the risk of sewer flooding is Low.

2.6 Reservoir and Canal Flooding

2.6.1 There are no canals within the vicinity of Green Hill G, therefore there is negligible associated flood risk.

2.6.2 The EA 'Flood Risk from Reservoirs' map shows that Green Hill G is not at risk of flooding from reservoirs.

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

2.7 Residual Flood Risks

2.7.1 A residual risk is an exceedance event, such as the greater than 1 in 1000 year (<0.1% AEP) flood event that would overtop the River Great Ouse and potentially impact the Site. 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.

2.7.2 In the event of the defences failing or an exceedance event occurring, the residual risk to people working within the Site can be managed through the implementation of an appropriate Site management plan, which recognises the residual risks and details what action is to be taken by staff in the event of a flood to put occupants in a place of safety.

2.8 Summary of Flood Risk and Mitigation

2.8.1 It can be concluded that the risk to Green Hill B from all sources of flooding is **Negligible to Low**, however it would be prudent to include the below mitigation measures.

2.9 Embedded Mitigation

2.9.1 Embedded Mitigation is detailed in Section 3.2 of the covering report.

2.10 Impact on Off-Site Flood Risk

2.10.1 The solar panels will be mounted on frames and raised above ground level allowing flood water to flow freely underneath, and a 9 m buffer around watercourses maintained. Therefore, there will be no loss of floodplain volume as a result of the Scheme and no increase in flood risk elsewhere. It should also be noted that further modelling is being undertaken separate to the DCO submission, to assess the potential impacts on the village of Lavendon which is located south-east of the site. Given the above and the embedded mitigation detailed, it is not anticipated that flood risk will be increased in Lavendon.

2.10.2 The supporting infrastructure is insignificant in size and will not increase flood risk elsewhere.

2.10.3 Surface water management has been considered in Section 5.0 of the Covering Report.

3. Conclusions and Recommendations

3.1 Conclusions

3.1.1 The Scheme is for a ground mounted solar farm and associated infrastructure and access roads.

Flood Risk

3.1.2 Green Hill G is located within Flood Zone 1 on the Environment Agency (EA) 'Flood Map for Planning (Rivers and Sea)' – an area considered to have the lowest probability of fluvial and tidal flooding.

3.1.3 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.

3.1.4 The solar 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.

3.2 Recommendations

3.2.1 Embedded Mitigation is detailed in section 3.2 of the covering report.

Annex A - Ouse (Newport Pagnell to Rocton) Water Body Catchment Classification Summary

Classification Item	2019 Classification		2019 Classification	Cycle 3 Objectives		
	Cycle 2	Cycle 3	Cycle 3	Status	Year	Reasons
Ecological	Moderate	Moderate	Moderate	Moderate	2022	
Biological Quality Elements	Good	Good	Good	Good	2022	
Invertebrates	Good	High	Good	Good	2022	
Macrophytes and Phytobenthos Combined	N/A	N/A	High	High	2022	
Physio-Chemical Quality Elements	Moderate	Moderate	Poor	Poor	2022	
Acid Neutralising Capacity	N/A	N/A	Moderate	Moderate	2022	
Ammonia (Phys-Chem)	High	High	High	High	2022	
Dissolved Oxygen	High	High	High	High	2022	
Phosphate	Poor	Poor	Good	Good	2022	
Temperature	High	High	High	Good	2022	
pH	High	High	High	Good	2022	
Hydromorphological Supporting Elements	Supports Good	Supports Good	Supports Good	Supports Good	2022	
Supporting Elements (surface Water)	Moderate	Moderate	Moderate	Moderate	2022	
Mitigation Measures Assessment	Moderate or less	Moderate or less	Moderate or less	Moderate or less	2022	
Specific Pollutants	High	High	High	High	2022	
Iron	High	High	High	High	2022	
Maganese	High	High	High	High	2022	
Chemical	Good	Fail	Fail	N/A	2022	
Priority Hazardous Substances	Good	Fail	Fail	N/A	2022	
Benzo(a)pyrene	N/A	Good	Good	N/A	2022	
Dioxins and dioxin-like compounds	N/A	Good	Good	N/A	2022	
Heptachlor and cis-Heptachlor Epoxide	Good	Good	Good	N/A	2022	
Hexachlorobenzene	Good	Good	Good	N/A	2022	
Hexachlorobutadiene	Good	Good	Good	N/A	2022	
Mercury and Its Compounds	N/A	Good	Good	N/A	2022	
Perfluorooctane sulphonate (PFOS)	N/A	Good	Good	N/A	2022	
Polybrominated diphenyl ethers (PBDE)	N/A	N/A	Good	N/A	2022	
Priority substances	Good	Good	Fail	N/A	2022	
Cypermethrin (Priority)	N/A	Good	Good	N/A	2022	
Fluoranthene	N/A	Good	Good	N/A	2022	
Other Pollutants	N/A	N/A	N/A	N/A	2022	

Annex B - Manning’s Open Channel Flow Mapping

313532 Green Hill Solar Farm

Manning's Open Channel Flow Calculation - Option Area G

Methodology

Cross-sections of the channel and floodplain were extracted from Environment Agency (EA) LiDAR DTM data (flown Q1 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. Due to the nature of LiDAR, volume and conveyance of the main channels will likely be underestimated, providing a conservative assessment of fluvial flood risk.

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 based on aerial imagery. The bed slope was set for each cross-section based on underlying LiDAR. Catchment descriptors for the catchments upstream of the outlet locations shown in Figure 1 were imported into ReFH2 and used to provide an estimate of flows within the channel during the 1% AEP +58%CC event. These flows were scaled by area as required.

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 water level for the calculated flow, rounding up where a direct match is not found. To provide additional confidence in the assessment, a second xlookup has been used to determine the estimated flood level should an additional 50% flow be applied.

Cross-sections have been located at suitable locations throughout 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 +58% uplift in flows (Upper and Bedford Ouse Catchment, 2080's higher allowance).

Cross-Section Locations

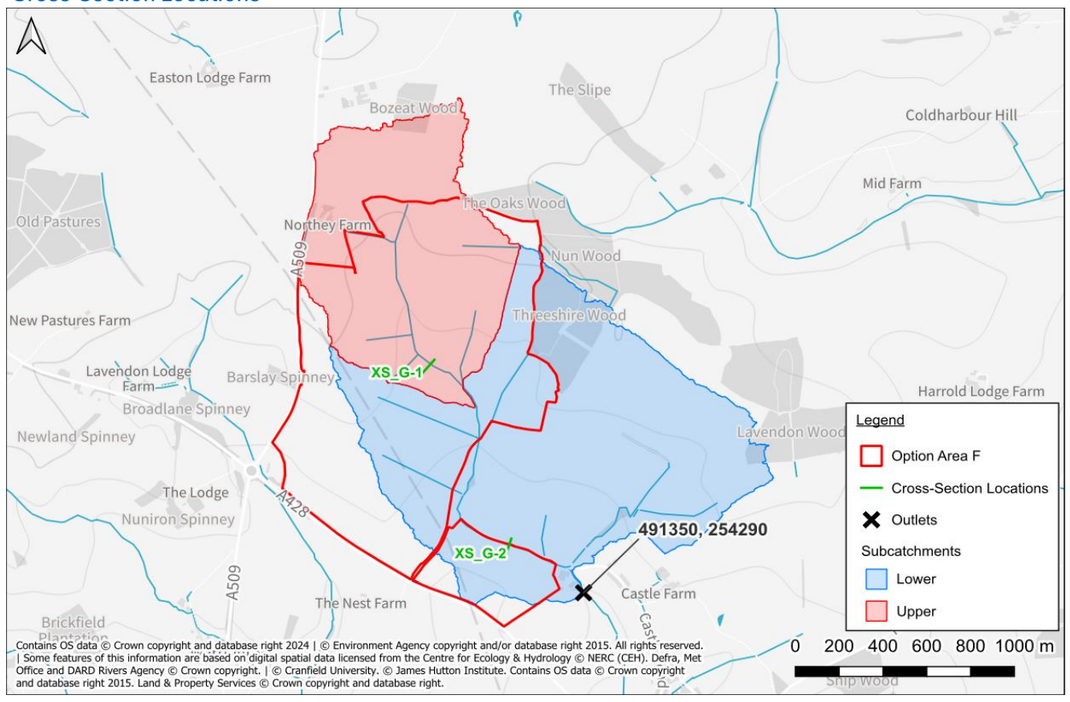

Figure 1: Cross-section locations

Calculated Flows and Levels

Cross-Section	ReFH2 Peak Flow - 1% AEP +58%CC (m^3/s)	Equivalent Flood Level (m AOD)	Sensitivity Flow - ReFH2 +50% (m^3/s)	Equivalent Flood Level (m AOD)
G-1	1.62	84.63	2.43	84.65 (+19mm)
G-2	4.56	72.82	6.84	72.92 (+106mm)

Tabulated Cross-Section Properties | G-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
G-1	0.000	84.326	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0155
G-1	0.001	84.349	0.023	0.157	0.470	0.007	0.009	0.650	0.652	0.0155
G-1	0.007	84.371	0.045	0.249	0.527	0.029	0.059	1.300	1.303	0.0155
G-1	0.022	84.394	0.068	0.326	0.564	0.066	0.174	1.950	1.955	0.0155
G-1	0.045	84.415	0.089	0.408	0.597	0.111	0.365	2.331	2.339	0.0155
G-1	0.079	84.436	0.110	0.478	0.621	0.164	0.631	2.712	2.722	0.0155
G-1	0.122	84.457	0.131	0.541	0.640	0.225	0.979	3.093	3.106	0.0155
G-1	0.176	84.478	0.152	0.598	0.656	0.294	1.413	3.474	3.489	0.0155
G-1	0.202	84.488	0.162	0.612	0.660	0.330	1.624	3.771	3.787	0.0155
G-1	0.232	84.498	0.172	0.619	0.737	0.375	1.867	5.216	5.232	0.0155
G-1	0.258	84.505	0.179	0.613	0.841	0.421	2.072	7.782	7.800	0.0155
G-1	0.370	84.526	0.200	0.611	0.784	0.605	2.971	9.780	9.799	0.0155
G-1	0.465	84.539	0.213	0.628	0.770	0.740	3.734	10.913	10.934	0.0155
G-1	0.499	84.543	0.217	0.636	0.769	0.784	4.006	11.248	11.270	0.0155
G-1	0.506	84.544	0.218	0.637	0.771	0.795	4.068	11.436	11.458	0.0155
G-1	0.592	84.553	0.227	0.653	0.800	0.907	4.760	13.342	13.365	0.0155
G-1	0.880	84.575	0.249	0.717	0.821	1.227	7.073	15.794	15.820	0.0155
G-1	1.159	84.592	0.266	0.772	0.817	1.502	9.317	16.484	16.511	0.0155
G-1	1.548	84.611	0.285	0.848	0.827	1.826	12.440	17.048	17.078	0.0155
G-1	1.993	84.631	0.305	0.922	0.841	2.161	16.014	17.613	17.645	0.0155
G-1	2.492	84.650	0.324	0.994	0.855	2.507	20.025	18.178	18.211	0.0155
G-1	3.003	84.668	0.342	1.058	0.868	2.839	24.131	18.735	18.770	0.0155
G-1	3.560	84.686	0.360	1.119	0.880	3.181	28.611	19.292	19.330	0.0155
G-1	4.164	84.704	0.378	1.178	0.892	3.534	33.461	19.850	19.888	0.0155
G-1	4.774	84.721	0.395	1.232	0.902	3.876	38.361	20.400	20.441	0.0155
G-1	5.425	84.738	0.412	1.283	0.912	4.227	43.595	20.951	20.994	0.0155
G-1	6.118	84.755	0.429	1.334	0.922	4.588	49.165	21.502	21.546	0.0155
G-1	6.476	84.764	0.438	1.354	0.926	4.784	52.037	21.960	22.005	0.0155
G-1	7.395	84.785	0.459	1.404	0.957	5.266	59.426	23.991	24.037	0.0155
G-1	7.650	84.790	0.464	1.420	0.964	5.387	61.471	24.345	24.390	0.0155
G-1	8.225	84.801	0.475	1.452	0.992	5.663	66.097	25.901	25.946	0.0155
G-1	9.281	84.820	0.494	1.505	1.005	6.165	74.581	26.934	26.981	0.0155
G-1	10.409	84.839	0.513	1.557	1.016	6.687	83.647	27.968	28.016	0.0155
G-1	10.457	84.840	0.514	1.557	1.039	6.715	84.027	29.334	29.382	0.0155
G-1	11.481	84.856	0.530	1.597	1.041	7.190	92.256	29.960	30.008	0.0155
G-1	12.937	84.878	0.552	1.649	1.044	7.843	103.959	30.831	30.881	0.0155
G-1	14.495	84.899	0.573	1.702	1.049	8.516	116.477	31.703	31.753	0.0155
G-1	15.100	84.907	0.581	1.721	1.069	8.775	121.344	33.202	33.253	0.0155
G-1	15.332	84.910	0.584	1.727	1.076	8.876	123.202	33.778	33.829	0.0155
G-1	16.278	84.922	0.596	1.751	1.100	9.294	130.808	35.959	36.011	0.0155
G-1	16.665	84.938	0.612	1.691	1.042	9.857	133.919	36.718	36.771	0.0155
G-1	18.052	84.953	0.627	1.730	1.047	10.432	145.059	37.477	37.531	0.0155

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
G-1	18.143	84.954	0.628	1.733	1.066	10.471	145.795	38.905	38.959	0.0155
G-1	18.458	84.962	0.636	1.712	1.044	10.784	148.324	39.357	39.411	0.0155
G-1	20.036	84.979	0.653	1.751	1.050	11.441	161.003	40.331	40.386	0.0155
G-1	21.688	84.995	0.669	1.790	1.055	12.115	174.278	41.305	41.360	0.0155
G-1	23.082	85.011	0.685	1.805	1.058	12.790	185.484	43.084	43.139	0.0155
G-1	23.163	85.012	0.686	1.805	1.058	12.833	186.131	43.223	43.278	0.0155
G-1	24.093	85.023	0.697	1.809	1.058	13.316	193.607	44.630	44.686	0.0155
G-1	26.471	85.045	0.719	1.849	1.062	14.316	212.719	46.322	46.378	0.0155
G-1	27.994	85.058	0.732	1.876	1.065	14.924	224.953	47.199	47.256	0.0155
G-1	29.569	85.071	0.745	1.902	1.068	15.544	237.615	48.076	48.134	0.0155
G-1	30.677	85.080	0.754	1.920	1.070	15.979	246.517	48.722	48.780	0.0155
G-1	31.430	85.086	0.760	1.931	1.088	16.277	252.567	50.659	50.718	0.0155
G-1	32.586	85.095	0.769	1.946	1.101	16.742	261.854	52.554	52.613	0.0155
G-1	32.203	85.096	0.770	1.917	1.098	16.795	258.778	54.056	54.115	0.0155
G-1	32.496	85.098	0.772	1.922	1.101	16.904	261.130	54.411	54.470	0.0155
G-1	34.516	85.115	0.789	1.938	1.090	17.808	277.362	55.230	55.290	0.0155
G-1	37.104	85.131	0.805	1.981	1.094	18.726	298.162	56.049	56.109	0.0155
G-1	40.887	85.154	0.828	2.042	1.101	20.028	328.561	57.117	57.179	0.0155
G-1	42.838	85.167	0.841	2.065	1.103	20.748	344.237	58.081	58.143	0.0155
G-1	44.846	85.179	0.853	2.088	1.105	21.480	360.376	59.045	59.107	0.0155
G-1	46.562	85.189	0.863	2.109	1.107	22.073	374.168	59.685	59.748	0.0155
G-1	50.648	85.212	0.886	2.159	1.113	23.463	407.001	61.158	61.221	0.0155
G-1	54.013	85.229	0.904	2.201	1.117	24.541	434.043	62.056	62.120	0.0155
G-1	57.491	85.247	0.921	2.243	1.122	25.635	461.991	62.954	63.019	0.0155
G-1	60.021	85.260	0.934	2.268	1.127	26.461	482.320	64.049	64.114	0.0155
G-1	62.183	85.271	0.945	2.289	1.130	27.171	499.695	65.028	65.094	0.0155
G-1	65.294	85.286	0.960	2.319	1.135	28.154	524.688	66.099	66.164	0.0155
G-1	68.493	85.301	0.975	2.349	1.139	29.153	550.398	67.169	67.235	0.0155
G-1	69.579	85.306	0.980	2.359	1.140	29.490	559.124	67.525	67.591	0.0155
G-1	72.274	85.318	0.993	2.382	1.144	30.341	580.782	68.609	68.676	0.0155
G-1	75.038	85.331	1.005	2.405	1.147	31.205	602.995	69.694	69.760	0.0155
G-1	75.553	85.335	1.009	2.400	1.152	31.487	607.131	71.172	71.239	0.0155
G-1	77.183	85.342	1.016	2.413	1.154	31.987	620.226	71.716	71.784	0.0155
G-1	82.467	85.365	1.039	2.450	1.158	33.660	662.691	73.782	73.849	0.0155
G-1	84.193	85.372	1.046	2.463	1.159	34.178	676.560	74.216	74.283	0.0155
G-1	89.568	85.393	1.067	2.508	1.162	35.710	719.755	75.239	75.308	0.0155
G-1	95.122	85.413	1.087	2.553	1.166	37.263	764.381	76.262	76.332	0.0155
G-1	99.553	85.428	1.103	2.589	1.169	38.450	799.993	76.906	76.977	0.0155
G-1	104.088	85.444	1.118	2.625	1.172	39.647	836.436	77.551	77.622	0.0155
G-1	111.167	85.468	1.142	2.677	1.178	41.524	893.316	78.842	78.914	0.0155
G-1	118.422	85.490	1.164	2.737	1.184	43.265	951.620	79.486	79.559	0.0155
G-1	125.156	85.510	1.184	2.790	1.191	44.862	1005.734	80.159	80.232	0.0155
G-1	132.072	85.530	1.204	2.842	1.197	46.472	1061.305	80.833	80.906	0.0155

Tabulated Cross-Section Properties | G-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
G-2	0.000	72.043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0159
G-2	0.003	72.079	0.036	0.218	0.515	0.013	0.023	0.723	0.727	0.0159
G-2	0.018	72.116	0.073	0.346	0.578	0.053	0.144	1.445	1.455	0.0159
G-2	0.050	72.148	0.105	0.482	0.626	0.103	0.394	1.710	1.728	0.0159
G-2	0.096	72.180	0.137	0.591	0.658	0.162	0.760	1.975	2.001	0.0159
G-2	0.157	72.212	0.169	0.684	0.682	0.230	1.245	2.240	2.274	0.0159
G-2	0.234	72.244	0.201	0.767	0.701	0.306	1.858	2.505	2.547	0.0159
G-2	0.352	72.282	0.239	0.871	0.723	0.404	2.790	2.730	2.784	0.0159
G-2	0.493	72.319	0.276	0.965	0.741	0.511	3.909	2.955	3.022	0.0159
G-2	0.659	72.357	0.314	1.051	0.756	0.627	5.220	3.181	3.260	0.0159
G-2	0.849	72.395	0.352	1.131	0.769	0.751	6.730	3.406	3.497	0.0159
G-2	1.066	72.432	0.389	1.206	0.781	0.883	8.446	3.631	3.735	0.0159
G-2	1.309	72.470	0.427	1.278	0.792	1.024	10.376	3.857	3.973	0.0159
G-2	1.512	72.502	0.459	1.310	0.797	1.154	11.986	4.187	4.310	0.0159
G-2	1.741	72.535	0.492	1.345	0.802	1.294	13.801	4.518	4.648	0.0159
G-2	1.997	72.567	0.524	1.382	0.808	1.445	15.829	4.848	4.986	0.0159
G-2	2.281	72.599	0.556	1.419	0.813	1.607	18.081	5.179	5.324	0.0159
G-2	2.446	72.616	0.573	1.441	0.817	1.697	19.383	5.341	5.492	0.0159
G-2	2.727	72.647	0.604	1.461	0.820	1.867	21.614	5.766	5.924	0.0159
G-2	3.041	72.677	0.634	1.483	0.823	2.050	24.107	6.191	6.356	0.0159
G-2	3.390	72.708	0.665	1.509	0.827	2.247	26.872	6.616	6.789	0.0159
G-2	3.870	72.744	0.701	1.551	0.833	2.495	30.670	7.053	7.236	0.0159
G-2	4.397	72.781	0.738	1.594	0.838	2.759	34.852	7.491	7.683	0.0159
G-2	4.975	72.817	0.774	1.637	0.844	3.039	39.432	7.928	8.129	0.0159
G-2	5.626	72.852	0.809	1.692	0.851	3.325	44.593	8.252	8.463	0.0159
G-2	6.324	72.888	0.845	1.746	0.858	3.622	50.124	8.575	8.797	0.0159
G-2	7.070	72.923	0.880	1.798	0.864	3.931	56.036	8.899	9.130	0.0159
G-2	7.114	72.925	0.882	1.801	0.923	3.950	56.384	10.171	10.403	0.0159
G-2	7.315	72.934	0.891	1.807	0.973	4.048	57.979	11.503	11.737	0.0159
G-2	7.693	72.950	0.907	1.813	1.012	4.244	60.974	12.981	13.220	0.0159
G-2	7.943	72.960	0.917	1.815	1.028	4.377	62.956	13.783	14.025	0.0159
G-2	8.259	72.972	0.929	1.816	1.035	4.547	65.460	14.472	14.718	0.0159
G-2	8.670	72.985	0.942	1.829	1.050	4.741	68.723	15.324	15.574	0.0159
G-2	9.848	73.019	0.976	1.861	1.067	5.291	78.055	17.044	17.304	0.0159
G-2	10.759	73.043	1.000	1.882	1.081	5.717	85.278	18.497	18.764	0.0159
G-2	11.198	73.054	1.011	1.889	1.109	5.929	88.757	20.059	20.329	0.0159
G-2	11.198	73.054	1.011	1.889	1.109	5.929	88.757	20.059	20.329	0.0159
G-2	11.321	73.057	1.014	1.890	1.111	5.990	89.734	20.288	20.559	0.0159
G-2	12.977	73.092	1.049	1.929	1.111	6.728	102.852	21.905	22.177	0.0159
G-2	14.007	73.112	1.069	1.952	1.112	7.176	111.023	22.859	23.132	0.0159
G-2	14.880	73.128	1.085	1.972	1.113	7.548	117.940	23.600	23.874	0.0159
G-2	16.260	73.152	1.109	2.004	1.112	8.113	128.881	24.475	24.751	0.0159
G-2	17.733	73.175	1.132	2.039	1.111	8.698	140.552	25.350	25.626	0.0159
G-2	18.055	73.180	1.137	2.046	1.112	8.825	143.104	25.588	25.864	0.0159
G-2	19.154	73.198	1.155	2.060	1.123	9.300	151.817	27.138	27.415	0.0159
G-2	20.271	73.214	1.171	2.081	1.126	9.741	160.671	27.967	28.245	0.0159
G-2	22.294	73.241	1.198	2.121	1.125	10.510	176.701	29.020	29.299	0.0159
G-2	24.189	73.264	1.221	2.159	1.125	11.201	191.721	29.819	30.099	0.0159

Annex C - City of Milton Keynes Council LLFA Response

Thank you for your enquiry. Please see our response below.

Flooding History

As LLFA we hold records on reported surface water, groundwater flooding and structural flood defences. Our records include the following information relevant to the proposed Site:

Lavendon - December 2020 Section 19 Report, found at - Flood investigations | Milton Keynes City Council (milton-keynes.gov.uk).

Please be aware that there may be additional flooding incidents that are not on our records. We would recommend that our Strategic Flood Risk Assessment (SFRA) is also reviewed to determine localised flood risk from other sources.

Internal Drainage Board/Watercourse

The Bedford Group of Drainage Boards (IDBs) operate within Milton Keynes Borough and their drainage districts can be found here - Boards Drainage District - The Bedford Group of Drainage Boards (idbs.org.uk).

The IDBs can be contacted directly to discuss any requirements they may have at contact@idbs.org.uk.

Details on the maintenance and management of watercourses in Milton Keynes can be found here - Watercourse management and consenting | Milton Keynes City Council (milton-keynes.gov.uk).

Planning Requirements

Unfortunately, the LLFA are not in a position to offer pre-application planning advice directly.

Reviews of surface water strategies or flood risk assessments should be requested via MKCC formal pre-application advice service, where a planning officer will provide their opinion and guidance on the likely outcome of your application. This can be made via email to dcadmin@Milton-keynes.gov.uk by submitting a location plan and as much information as you are able (the more information you can provide the more accurate the advice will be). The fee for pre-application for this Site would be based on the attached fee schedule with additional charges should you wish a meeting with officers (depending on the category selected and who you would like to attend). It is important to specify if you wish the LLFA to comment. Further information regarding pre-applications can be found on our website Pre-application advice | Milton Keynes Council (milton-keynes.gov.uk).

However, we have published free detailed guidance on the preparation of surface water drainage strategies (see below). This provides information on the level of detail we require depending on the type of planning application as well as common matters we may be asked. The document should be used by all developers and their consultants who wish to submit an application in Milton Keynes - Surface Water Drainage Guidance for Developers December 2022.

Further information regarding flood risk management across Milton Keynes can be found on our Flood and Water Management webpage - Flood and water management | Milton Keynes City Council (milton-keynes.gov.uk).

I trust this answers your enquiry.

Kind regards,

[redacted]

Flood and Water Management Officer I Flood and Water Management Team, Lead Local Flood Authority

To speak with me:

T: Call via [redacted]

Team: [redacted]

Milton Keynes City Council| Civic | 1 Saxon Gate East | Milton Keynes | MK9 3EJ

www.milton-keynes.gov.uk

[i] Google Maps
[ii] England | Catchment Data Explorer
[iii] GeoIndex (onshore) - British Geological Survey
[iv] MAGIC
[v] Get flood risk information for planning in England - Flood map for planning - GOV.UK
[vi] Where do you want to check? - Check your long term flood risk - GOV.UK