

Hammonds Mill Farm Estate Hassocks West Sussex BN6 9NB

Class Q Barn Conversions Prior Approval Application (transitional provisions)

Flood Risk Assessment and Drainage Strategy (UPDATED)

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CONTENTS

SUMMARY

1. Background
2. Site and Surrounding Land Description
3. Current Flood Risks
4. Peak Herrings Stream Flows
5. Surface Water and Foul Drainage Strategies
6. Surface Water Runoff Quality
7. Proposed Foul Water Drainage
8. Exceedance Events
9. Residual Flood Risk

APPENDICES

- A Site Location and Context Plans
- B Environment Agency Flood Risk Classifications and Flood Maps for Planning
- C Former Water Mill Water Infrastructure Plan
- D Topographical Survey 2025

SUMMARY

1. A new application for Prior Approval for conversion of four agricultural buildings (barns) to form four dwellings, under Class Q, (transitional provisions) has been submitted to Mid Sussex District Council.
2. Prior Approval was given, with conditions, for the same proposals in March 2022, but that has lapsed before all the reports and supporting submissions to discharge conditions have been finalised.
3. Although the proposals in the new application are the same as those given Prior Approval in 2022, the Flood Risk Assessment from that time has needed to be updated to reflect more recent changes in EA published flood mapping, particular surface water flooding and include a drainage strategy, as requested by the MSDC Flood Risk and Drainage Team when making comments on the 2025 application, as a statutory consultee.
4. The application site comprises the barns, the farmyard and the private access road, as agreed with MSDC, a site area of 0.48 hectares, being part of the Hammonds Mill Farm Estate (93 acres) which lies between Hassocks and Burgess Hill and includes the Herrings Stream, a designated 'main river', which runs through the southern part of the estate.
5. Although the application site, at its closest point is 48 metres north of the Herrings Stream, on higher ground and the site area is less than 1 hectare, where a flood risk assessment is not usually required, the EA and MSDC have requested an updated FRA that addresses climate change allowance, takes account of the most recent flood mapping and includes a drainage strategy, at the application stage.

6. The basic conclusion of this updated assessment remains that the proposed development (conversion of barns to four dwellings) is 'appropriate', when reviewed under NPPF and EA guidance and requirements, the application site being in Flood Risk Zone 1, at VERY LOW risk of fluvial flooding, LOW to VERY LOW risk of surface water flooding, VERY LOW risk of groundwater flooding and VERY LOW risk of flooding from infrastructure failure.
7. The land surrounding the application site however does have some special water features associated with the site of the former water mill (Hammonds Mill, demolished in 1974), including the surviving mill race and overflow stream, the millpond and tail race (infilled in 2001/2002) and a new lake (formed in 2001/2002) which also acts as a 'balancing lagoon' during periods of exceptionally high rainfall intensity.
8. A topographical survey of the application site and surrounding land, including the Herrings Stream and water source infrastructure associated with the former water mill use, has been undertaken by Offington Land Surveyors and has been used to inform the FRA and drainage strategy.
9. The potential impact of these water features, although beyond the application site, has been included in the FRA, the conclusion being that there is a VERY LOW flood risk arising from these water features, as a result of the works carried out in 2001/2002.
10. The main update to EA mapping since the 2022 FRA is identification of anticipated surface water flood risk areas. This mapping shows a low surface water flood risk around the bottom of the banking which was cut into existing ground levels to form a level land platform for Barns 1/2 when they were built in the mid 20C. Although there is no visible evidence or historic record of lying surface water or flooding on site at this location and a very extensive area of new woodland was planted on the land immediately to the north of the banking in the 1980s, the FRA investigates this surface water flood risk in detail, going on to conclude that the risk of surface water flooding can be considered to be VERY LOW, even after adding the upper end climate change allowance, with the inclusion of a

an existing land drainage and surface water drainage review and upgrade, that can be submitted for approval prior to commencement of the conversion works. The new development (barn conversions) therefore remains 'appropriate' as defined by NPPF and EA guidance criteria.

11. An initial surface water and foul drainage strategy for the development has evolved and is included in this report. There is capacity in the existing surface water disposal system which discharges into the overflow stream and the Herrings Stream to accept increased flows arising from adding the climate change allowance. The total new foul drainage flow rate from the new dwellings, using Klargest BioDisc treatment plants, comfortably comes within the range where a permit for effluent discharge into the Herrings Stream can be anticipated, including the two existing dwellings around the farmyard, the Grade II listed Hammonds Mill Farmhouse (former mill house) and Dairy Cottage.

1. Background

- 1.1 In March 2022, MSDC issued a Prior Approvals Given decision for proposals to convert two existing sets of adjoining barns to form 4 houses, within the existing footprints of the barns, under Class Q.
- 1.2 The current proposals are for the same scheme, under a new application, because the March 2022 decision has lapsed before all the pre start conditions could be discharged and the proposals reached implemented (work started on the barns)
- 1.3 MSDC have agreed the extent of the Class Q application site, as the 2022 submission, to be the footprint of the barns, access to the barns and access from the public highway. This is shown as the red line boundary on the Location Plan. The full extent of the Hammonds Mill Farm estate, for context, is shown bounded by the blue line on the Location Plan.
- 1.4 Although the Class Q application site (within the redline), at 0.48 hectares lies entirely within Flood Zone 1, where a full, flood risk assessment is not usually required to be submitted with a Class Q application, the Environment Agency originally asked that the impact of future climate change on flood levels associated with the Herring Stream, a designated main river, was assessed in the 2022 submission.
- 1.5 Following consultation on the accepted 2022 Flood Risk Assessment which was included with the 2025 application, the MSDC Flood Risk and Drainage Team have requested that an updated flood risk assessment should include recently published surface water risk maps and assessments and be expanded to include an outline drainage strategy appropriate to a planning application stage submission.

- 1.6 In the vicinity of the application site are two dwellings, the grade II listed Hammonds Mill Farm House (former mill house) and Dairy Cottage, the former water mill site, the infilled former mill pond, the overflow stream, the mill race, the Herrings Stream and the lake formed in 2001/2002. There is also adjoining pasture land and woodland, all part of the Hammonds Mill Farm estate which extends to 93 acres.
- 1.7 A full topographical survey, of all those areas and the application site has been undertaken by Offington Land Surveys (initially to inform pre start condition reports on the 2022 approval). Levels and other information from this survey have been used to inform the updated Flood Risk Assessment and Outline Drainage Strategy.
- 1.8 EA flood risk summaries for Hammonds Mill Farmhouse and Dairy Cottage, include and show the application barn conversion site and the surrounding land on the published EA Flood and Surface Water Maps. Hammonds Mill House, Dairy Cottage and the barn locations are classified as at VERY LOW flood risk category, currently and between 2040 and 2060.
- 1.9 Land close to the Herrings Stream, overflow stream, mill race and the lake are in flood risk zones 2 and 3 and at higher risk of flooding, now and in the future, as would be expected in this part of Mid Sussex, but are not within the application site.
- 1.10 This flood risk assessment and outline drainage strategy has been prepared to support the 'application stage' of the Class Q Prior Approval submission. Further, more detailed information will be brought forward for approval, to discharge pre start conditions that are likely to be linked to a Class Q Prior Approval is Given decision.

2. Site and Surrounding Land Description

Site areas, development, flood risk summaries

2.1	Site area:	Application site 0.48 ha. Hammonds Mill Farm Estate 37.5 ha (93 acres)
	Development:	Conversion of existing former farm barns to form four dwellings.
	Flood Zone:	Application site, Zone 1. Estate land close to Herrings Stream, Zones 2/3.(EA flood maps)
	Surface Water Flood Risk:	Application site VERY LOW to LOW. (EA flood summaries)
	Drainage Authority:	Southern Water (no public foul or surface water drains within 800 metres)
	Lead Local Flood Authority:	West Sussex County Council
	Local Flood Risk and Drainage Team:	Mid Sussex District Council

Location and Description

- 2.2 The application site is accessed from London Road, between Hassocks and Burgess Hill, via a long private road, which runs close to and parallel with the existing mill race, past the lake (formed in 2002/2002, to the former farm yard, at the centre of the farm estate, around which the application site barns are located, near Hammonds Mill Farm House (former mill house), former water mill site, stables, Dairy Cottage and infilled mill pond.
- 2.2 Hammonds Mill Farm House and Dairy Cottage are detached, occupied residences. The two adjoining barns to the north of the farm yard are referred to as Barns 1/2, while the two barns to the south west of the farm yard are referred to as Barns 3/4. Hammonds Mill Farm House is to the south east of the farmyard and Dairy Cottage to the west, between Barns 1/2 and Barns 3/4.

The infilled mill pond is to the east of the farmyard, the overflow stream to the south. There is a culvert under the farmyard that connects the former sluice at last end of the infilled mill pond to a head wall at the start of the overflow stream, which runs to the Herrings Stream further to the south.

The former tail race from the former water mill site has been infilled and runs parallel to the overflow stream separated by the track which leads to the private bridge over the Herrings Stream to the south.

Topography

- 2.3 The application site and the adjoining land fall, broadly north/south towards the Herrings Stream which is towards the southern end of the estate land, but lies within the estate. The access road and mill race run broadly east/west, relatively level to the farmyard and buildings at the centre of the farm estate.

North of the mill race, infilled mill pond and the farmyard the land rises to the north where an extensive area woodland was planted in the 1980s under the Forestry Commission Woodland Grant Scheme, on former arable land, stretching to the northern boundary of the farm estate at Clayton Priory land.

Barns 1/2 were built in the mid 20C on a formed level ground platform, set at the higher end of farmyard which slopes north to south. The northern end of the barns have a 3 metre wide level access to the north elevation before grassed banking slopes up between 1.8m and 2.5m to the higher ground to the north, east and west.

- 2.4 Main levels from the topographical survey are:

Private road level at London Road entrance:	30.32
Mill race bed close to London Road entrance	28.55
Herrings Stream bed at entry under London Road	27.22

Private road level at farmyard:	28.44
Top of bank at north of Barns 1/2:	31.80 - 30.96
Barns1/2 floor levels:	29.55 {FFL of dwellings 29.80}
Infilled mill pond level:	28.90 (estimated highest water level)
Dairy Cottage floor level:	29.15
Farmyard levels, north:	28.90
south:	26.91
Hammonds Mill House floor level:	28.10
Barns 3/4 floor levels:	27.05 (FFL of new dwellings 27.30)
Overflow stream bed level at culvert:	25.35
Bridge level over Herrings Stream:	26.42
Herrings Stream bed level at bridge:	24.63 (water level at 12 apr 2025_ 24.92 [290mm deep])

- 2.5 Proposed floor levels for the barn conversions are 250mm above existing barn floor levels, giving new FFLs to dwellings in Barns 1/2 of 29.80m and Barns 3/4 of 27.30m. There is a comfortable height to barn eaves line and under Class Q rules, new raised and insulated floors are allowed to be formed as part of practical conversion works.

The Zone 2/3 mapping flood level, related to Herrings Stream, anticipates a flood water level of 26.40m, which means the the proposed FFL for the houses within Barns 3/4, which are closest to the Herrings Stream, is 900mm above the 1 in 100 year, stream flood level, and at a FFL that can comfortably deal with the 40% climate change uplift criteria, without risk of flooding to the new dwellings proposed within the footprint of Barns 3/4.

Geology

- 2.6 Based on the ground appraisal carried out in 2022 at the nearby, former Mill Nursery site (now Hammonds Mill Place), underlying bedrock is likely to be Weald Clay with higher river terrace clay deposits than expected.

Hydrogeology

- 2.7 Defra's Map has been reviewed and the site does not lie within any groundwater Source Protection Zones (SPV)

Infiltration

- 2.8 Based on the ground appraisal at the former Mill Nursery site, ground water levels around the application site may be relatively high and are likely preclude the use of infiltration media when designing surface drainage systems.

Hydrology

- 2.9 The Herrings Stream to the south the application site lies within the Hammonds Mill Farm Estate and is a designated 'main river', where the maintenance responsibilities mainly fall to the Environment Agency.
- 2.10 Adjoining the application site is the site of the former water mill, which was demolished in 1974, a water mill having been recorded at this location for over three hundred years. The surviving mill race, which is sourced at weirs and former sluices at Herrings Stream on the other side of London Road, on the New Close estate, and via the culvert under London Road, runs parallel to the private access road to the farmyard location, still exists for most of its route.

The end section of the mill race, where it fed the mill pond itself, was infilled in 2001/2002, with an overflow weir and large dia below ground drain laid below the infilled mill pond, to the former sluice position at the western end, connected to the culvert that runs under the farmyard to the surviving overflow stream. These alterations were undertaken in association with the formation of the new lake, which also acts as a balancing lagoon, located in a natural basin in the falling ground between the access road and the Herrings Stream.

A large pond survives close to the infilled end of the mill race, but this is not the former mill pond and shows on historic maps as a separate pond.

The overflow stream which returns to the Herrings Stream also survives with a headwall at the southern end of the farmyard from where a culvert passes under the farmyard to the former sluice position at the western end of infilled mill pond where there is a connection with the drain under the infilled mill pond.

The lake is fed via a weir and a culvert from the mill race further east, set at a level that results in virtually all the flow in the mill race discarding into the lake, leaving very low water flow in the underground pipe and culvert under the farmyard that connects with the overflow stream.

The tail race from the former mill site to the Herrings Stream has been infilled along almost all its length and in the stable yard.

The Herrings Stream flows westwards from the private bridge where it forms the southern boundary of the estate. Further west it passes the former Ruckford Mill eventually joining the River Adur.

Observed Flooding

- 2.11 Over the last four years, since the current owners acquired Hammonds Mill Farm Estate, there has been no visible flooding at the Class Q application site, being Barns 1/2, Barns 3/4, the farmyard and private access road to London Road.
- 2.12 However, as the EA flood mapping anticipates some flooding has been experienced beyond the application site.

River

- 2.13 Yearly flooding of the banks of the Herrings Stream has been experienced on those stretches relatively near the lake and the private bridge south of the Barns 3/4. However the floodwater height has been more than 1.5 metres below the existing floor levels in Barns 3/4 and at a distance of 32 metres from Barns 3/4.

Surface Water

- 2.14 Although the latest EA surface water mapping shows a low to very low risk of surface water flooding around the bottom of the banking close to the northern end of Barns 1/2, no surface water flooding, or ground lying water has been observed at this location and the previous owners (back to 1992) do not recall any historic surface water flooding.
- 2.15 As Barns 1/2 were built on the levelled area, in the mid 20C, it is considered likely that a land drainage system was installed the bottom of the banking, connected to the culvert under the farmyard which discharges into the overflow stream that runs south to Herrings Stream. Also, on Hammonds Mill Estate land immediately north of Barns 1/2, an extensive area woodland was planted during the mid 1980s, on former arable and pasture, under a Forestry Commission scheme.

Under Class Q rules, surface water drainage beyond the application site can be upgraded. Further investigations to determine the extent and condition of land drainage close to Barns 1/2 will be undertaken and any proposals for upgrading will be submitted for approval, to discharge any pre start drainage conditions that may be included with a Prior Approval decision.

It is feasible that the previous installation of land drainage at the bottom of the banking and the extensive planting of woodland has mitigated the risk surface water flooding at this location. EA and local surface water flood mapping in rural areas, to a large extent, is contour based and ground banking contours show up clearly, but in themselves are not always a firm indicator of associated flood risk, where on site investigations can better determine local conditions.

- 2.16 EA surface water flood risk mapping also shows the farmyard, which falls relatively steeply away from Barns1/2 may be susceptible to low surface water risk, based on contour mapping, but no surface water flooding has been experienced in the farmyard or its surroundings, there are existing road and yard gullies and the farmyard falls towards the overflow stream and Herrings Stream, a route surface water would flow naturally in an exceedance event
- 2.17 The two other locations shown at low risk risk of surface water flooding, a ditch in the higher ground to the north and around the large pond at the end of the mill race are sufficiently distant from the barns and have capacity to locally hold surface water after a period of high intensity rainfall, without any impact on the application site or its immediate surroundings.

Existing Drainage

- 2.18 Rainwater downpipes from the barns appear to discharge via the culvert below the farmyard to the overflow stream. This will require further investigation and submission/approval of drainage details to discharge likely conditions associated with a Prior Approval decision.

- 2.19 There appears to be land drainage installed at the bottom of the banks at the northern elevation of Barns 1/2, as referenced previously, which may also discharge to the culvert and overflow stream, via silt traps. As 2.18, this will require investigation for the discharge of conditions stage.
- 2.20 Hammonds Mill Farm House and Dairy Cottage have foul drainage systems that discharge to septic tanks. An Environment Agency permit exists for effluent discharge into the Herrings Stream. The Barns do not appear to have functional foul drainage systems but as Barns 1/2 were purpose built, covered, cattle barns erected in the mid 20C and there are several farmyard gratings, it's possible they will have been linked to a holding tank with pumped extract and controlled discharge to the stream (historic permits are referred to in conveyances).
- 2.21 Enquiries to the drainage authority confirm there are no public sewers within 800m of the application site.

3. Current Flood Risks

Flooding from Rivers and Sea

- 3.1 The EA Flood Map for Planning shows that the application site is located within Flood Zone 1. Barns 3/4 are located 35 metres from the Flood Zones 2 and 3 associated with Herrings Stream to the south and 5 metres, at south east corner, from the Flood Zones 2 and 3 associated with the former mill overflow stream.
- 3.2 Flood Zone 1 has a less than 1 in 1000 year annual probability of flooding from rivers (and sea).

- 3.3 Residential development is considered appropriate in Flood Zone 1 and therefore conversion of Barns 1/2 and Barns 3/4 is appropriate.
- 3.4 Although the south east corner of Barns 3/4 is close to Flood Zones 2 and 3, this is associated with a short length of the former overflow stream from the former mill pond that no longer acts as a material overflow stream (the mill race which fed the mill pond, has, since the formation of the lake in 2002, fed into the lake, which has an out stream to the Herrings Stream).

The proposed FFL in the new dwellings (250mm above the barn floor level) will be 900mm above the Flood Map water level anticipated at the former overflow stream. Residential conversion of Barns 3/4 is, therefore, still appropriate.

Surface Water Flooding

- 3.5 The application site is mainly in the 'very low' surface water risk category (less than 1 in 1000 year AEP). There is one area at the northern end outside Barns 1/2 of 'low' surface water risk (between the 1 in 100 year and 1 in 1000 year AEP), referred to previously, where the barns were built in the mid 20C on a level ground platform which had been formed by cutting into the higher ground level at the north.
- 3.6 There appears to be a land drain system at the bottom of the banking which likely connects via silt traps to the surface water culvert that runs under the farmyard to the headwall outlet at the overflow stream. There are no historic reports, or recent or current experience of surface water flooding on the level 2.5m wide margins between the bottom of the banking and Barns 1/2.
- 3.7 Further investigations will be carried out prior to commencement of conversion works (which will include forming a new, insulated ground floor slab with a FFL 250mm above the existing floor level in the barns) to check the extent and functionality of the land drain

system and if necessary undertake remedial work or replacement with a new land drain system. Any risk of local surface water flooding to new dwellings within the footprint of Barns 1/2 can therefore be relatively easily mitigated and therefore the residential conversion is appropriate.

- 3.8 There are no proposals to introduce any new non permeable surfaces outside the converted barns or at access ways to them. The existing access road will be retained and the farmyard hardstanding which provides more than comfortable access to the barns.

Groundwater Flooding

- 3.9 BGS mapping has identified that the application site and the surrounding land is underlain by Weald Clay which typically has a low susceptibility to ground water flooding. The MDSC Strategic Flood Risk Assessment identifies that within the district council area, land at risk of groundwater flooding covers only 0.049% of the district area.
- 3.10 The application site and the surrounding land can be considered to be at a very low risk flooding from groundwater.

Flooding from Infrastructure Failure

- 3.11 As the application site has no public surface water drainage it is not at risk of flooding from public infrastructure failure.
- 3.12 Existing private surface drains and water courses appear to have been reasonably well maintained and will be investigated further/part replaced/upgraded, if necessary during the conversion works phase to minimise any future risk of flooding from infrastructure failure.

- 3.13 Any new drainage will be designed in line with guidance from Sewers for Adoption (but not to be adopted) and Building Regulations Approved Document Part H and BS EN 752 which will minimise any future risk of flooding from infrastructure failure.

Flooding from Artificial Sources

- 3.14 The EA Map shows that the application site and the surrounding land would not experience flooding from any reservoir failure.
- 3.15 The mill race (sourced from the Herrings Stream and weirs on the other side of London Road), which runs parallel to the private access road, had an overflow weir installed to provide the water source for the new lake (culverted below the private access road) which was formed in 2001/2002. The lake has an outlet stream and weir to Herrings Stream.
- 3.16 At the same time in 2001/2002, the mill race had a weir and overflow pipe installed at the mill pond end, when the mill pond was infilled. The underground overflow pipe connects to the former sluice at the west end of the former mill pond. The former sluice is connected to the original culvert which runs below the farmyard to its southern end where at a headwall connects the culvert to the overflow stream which runs south to join Herrings Stream at the west side of the private bridge.
- 3.17 During periods of high rainfall the overflow weir and culvert at the mill race, which feeds the lake, take all the excess flow in the mill race to the lake, while the weir (set at a higher level) and underground overflow pipe at the former mill pond end effectively take virtually no overflow water.
- 3.18 The alterations made to the mill race, infilling of the mill pond and formation of the lake in 2001/2002, have been designed well with the appropriate EA and LLFA consents and permits, preventing any risk of future flooding to the Hammonds Mill Farm Estate Barns, the

grade II Farmhouse (former mill house), former mill site, stables and Dairy Cottage, arising from the surviving water mill (Hammonds Mill) water infrastructure on the estate.

- 3.19 The lake was designed to act as an on site 'balancing lagoon' during periods very high rainfall and rising levels in the Herrings Stream and mill race.
- 3.20 Existing floor levels at Barns 1/2 are 550mm higher than the highest water level at the former mill pond (brick pond edge left in place after infilling) in any case, and therefore will have been unaffected by any local flooding around the mill pond before it was infilled.
- 3.21 The application site is therefore not at risk from any flooding from 'artificial' sources.

4. Future Flood Risk and Climate Change

- 4.1 The NPPF sets out how flood risk should be considered over the lifetime of a development which means an increase in flood risk due to climate change should be taken into account at the planning application stage. Both peak river flows and rainfall intensity should be assessed.

Peak Herrings Stream Flows

- 4.2 The Herrings Stream, a designated 'main river', forms part of the southern boundary edge of Hammonds Mill Farm Estate. The nearest buildings are Barns 3/4 which are located 48 m north of the Herrings Stream. The farmyard rises almost 2.2m from its southern end

to Barns 1/2 which are located 85 m from the Herrings Stream.

- 4.3 The proposed FFLs in the new dwelling conversions of Barns 3/4 will be 2.67m above the bed level of Herrings Stream at its nearest point and 900mm above the highest water level anticipated on the Flood Zone 3 map for the Herrings Stream and overflow stream.
- 4.4 Using the 40% 'upper end' climate change uplift, the Herrings stream flood water level can be anticipated to be 550 mm below the FFLs in the converted dwellings in Barns 3/4. Therefore the new dwellings proposed within Barns 3/4 are not considered to be at risk of flooding from climate change (rivers)
- 4.5 The proposed FFLs in the converted dwellings in Barns 1/2 will be 2.5m higher than the proposed FFLs in Barns 3/4 and therefore the new dwellings in Barns 1/2 are also clearly not at risk of flooding from climate change (rivers).

Peak Rainfall Intensity and Surface Water Flooding

- 4.6 With a peak rainfall intensity at the 40% 'upper end' climate change allowance an increased risk of surface water flooding at the northern end of Barns 1/2 needs to be considered, where a 'low' current surface water risk is mapped, but not experienced on site, as noted previously. The other areas of the application site are 'very low' flood risk and are anticipated to remain in that category.
- 4.7 As there are no proposed changes to the land within the application site or the surrounding Hammonds Mill Farm Estate, this should ensure that any existing overland flow routes and surface water pathways will remain in place and the movement of surface water will not be impeded, particularly across the farmyard.

- 4.8 Prior to the commencement of the conversion works, the existing land drain system at the bottom of the banking at the northern, north western and north eastern ends of Barns 1/2 will be investigated, to check current condition and discharge via silt traps to the culvert under the farmyard. Depending on the findings of the investigation, a replacement land drainage system may have to be installed, or have to be installed to include for the 'upper end' climate change allowance for increases in rainfall intensity.

Upgrading the land drainage system outside the northern end of Barns 1/2 would be relatively straightforward however and is not a reason to change the initial assessment that new development is 'appropriate' in this location, under the NPPF and EA guidance.

- 4.9 The connection to the culvert will also be investigated but its capacity to take an increased surface water flow from the climate change allowance will be comfortably met, as the culvert (where visible and accessible at the headwall connection to the overflow stream) was originally sized to take the mill pond overflow from the sluice, which it no longer does, since the mill race which previously fed the mill pond, has, since 2001/2002, flowed via the new weir and culvert under the private access road, into the lake, as its principal water source.

Summary of Flood Risk including Climate Change Allowance

4.10	Fluvial	Very Low	Flood Zone 1 (application site)
		Low to Very Low	Flood Zones 2/3 (surrounding estate) Barns 3/4 dwelling conversions sufficiently distant and FFLs at comfortable height above highest flood level
	Tidal	Very Low	Tidal Flood Zone 1, reasonably far inland.

Surface Water	Low to Very Low	Local land drainage at banking around Barns 1/2 to be upgraded, if necessary after further investigation and for climate change allowance. Remaining part of application site and surrounding land in very low flood risk category.
Groundwater	Very Low	Underlying ground not susceptible.
Infrastructure Failure	Very Low	No public drainage infrastructure on application site or surrounding land. Private drainage well maintained, new drainage to be to 2025 design standards.
Reservoirs	Very Low	Application site and surrounding land well beyond any maximum extent of flooding.
Former Water Mill Infrastructure	Very Low	Formation of new lake (also a balancing lagoon) and associated alterations to mill race to discharge into lake, infilling of mill pond and tail race, restoration of overflow stream in 2002, removed flood risk at millpond and mill race.
Climate Change	Low to Very Low	Increased Herrings Stream flows, increased mill race flows and increased rainfall intensities are not anticipated to cause any river flooding, or surface water flooding or ingress to converted dwellings because of relevant distances, proposed FFLs and improved land drainage at banking change of level (Barns 1/2)

5. Surface Water and Foul Drainage Strategies

- 5.1 As a proposal to convert existing barns to dwellings under Class Q provisions with minimal alteration to the basic structure, building forms and roof pitches, the extent of built area, hardstandings and green areas will not change.
- 5.2 The barns have existing rainwater disposal via eaves gutters and downpipes which are connected via surface water drainage pipework and manholes to a main culvert which runs below the farmyard hardstanding to a head wall at the southern end of the farmyard where the culvert discharges into an overflow stream (formerly for the millpond/mill race) that runs south to join the Herrings Stream. Subject to further investigations, including CCTV survey of the culvert and main drain runs of the existing surface water drainage system, prior to commencement of the conversion works, the proposal is to use the existing surface water drainage system.
- 5.3 In the circumstances where part of the existing surface water drainage system is found to need to be replaced or upgraded, this should be achievable by an individual new drainage runs to an existing manhole and/or alterations at a manhole, or the addition of a new manhole on the existing system. Of particular importance, are properly working catch pits and silt traps and it is anticipated that replacement and additional modern silt traps may need to be installed..
- 5.4 It is considered unlikely that an extensive new surface water drainage system will have to be installed, nor that the existing final discharge via the overflow stream to the Herrings Stream cannot continue to be used.
- 5.5 This approach is sustainable and in effect mirrors the four pillars of the SuDs approach to surface water drainage that the EA and the NPPF requires 'new' developments to use, wherever feasible.
- 5.6 No soakaways are proposed, or needed. Underlying Weald Clay, does not usually provide acceptable infiltration.

Surface Water Drainage Hierarchy

- 5.7 Although the scheme is a conversion of existing barns to dwellings, the NPPF requirement that opportunities to reduce overall flood risk should be sought through sustainable development and careful drainage design on new developments, is likely to be also applied to Class Q conversions of existing buildings.
- 5.8 The alterations to the mill race, infilling the millpond and forming the new lake, also acting as a 'balancing lagoon', in 2002, can be said to have anticipated the NPPF requirements, for Hammonds Mill Farm Estate and foresaw the surface water drainage hierarchy in the NPPF.
- 5.9 The proposals described in 5.1 to 5.6 for any alterations or upgrades to the existing surface water drainage are also consistent with the NPPF surface water drainage hierarchy.
- 5.10 It is not anticipated at this stage that any form flow restriction will be required at the culvert exit at the southern end of the farmyard where it discharges into the overflow stream, as flow rates from the roofs, farmyard hardstanding and land drains (via silt traps) will comfortably discharge into the overflow stream, which has a good bank depth and width as it heads towards the Herrings Stream.

6. Surface Water Runoff Quality

- 6.1 The NPPF states that development should not have a detrimental impact on the environment, including the water environment and the CIRIA SuDS manual gives guidance on the treatment of surface water run off.

- 6.2 The requirement for roof water run off is the removal of solids and sediments which can be achieved using catch pits or silt traps, as proposed in section 5, to upgrade the existing surface water drainage system.
- 6.3 As it is not proposed to form any new access roads, parking areas or hardstandings, instead retaining the existing concrete farmyard and locating parking with existing barn footprint, principally to meet the Class Q conversion rules, there is little opportunity to introduce new permeable surfaces or replace existing hardstandings with permeable surfaces.
- 6.4 The CIRIA SuDS Manual, however, tabulates pollution hazard levels for different land use classifications. Property driveways and residential parking areas are classified as a Low Pollution Level. Permeable paving, however, exceeds the highest pollution hazard index figures for property driveways and residential parking (even though Low) and therefore it is proposed to replace some of the concrete surfaces within the barns, where they will be used for access and parking, with permeable paving, which is possible within the Class Q rules for barn conversions.
- 6.5 The small grassed area in centre of the farmyard has some scope to be enlarged without impacting on vehicle movements and it is proposed to increase the extent of this grassed area.
- 6.6 Existing permeable farm tracks that lead from the farmyard to the private bridge over the Herrings Stream, to the fields to the west and to the sand menage to the east of Barns 1/2 are to be retained as permeable tracks.

7. Proposed Foul Water Drainage System

- 7.1 Foul flow rates for the proposed dwellings will be 3000 litres/day/dwelling for the smaller dwellings and 4000 litres/day for the large dwelling. The calculated peak flow rate for the new dwellings will be 0.15 l/sec.

- 7.2 Hammonds Mill Farmhouse and Dairy Cottage have septic tanks that discharge to the Herrings Stream, under permit.
- 7.3 As there are no public sewers within 800m, the rules for small sewage discharges (SSDs) allow sewage effluent to discharge to surface water. This is proposed approach as the discharge will be below the 15,000 and 20,00 litres per day criteria where standard rules permits can be anticipated to be granted.
- 7.4 The foul drainage strategy for the barn conversions will be to use Klargester Bio Disc sewage treatment plants and either to use the existing effluent discharge to the Herrings Stream, or a new connection with an application under 'standard rules' for a permit, in either case.
- 7.5 Klargester BioDisc sewage treatment plants have specific maintenance and inspection requirements. These will be issued to the owners, or occupants of the converted dwellings to ensure that the treatment plants can be responsibly owned and maintained in perpetuity.
- 7.6 The use of a grey water recycling system is under review, to work in tandem with the Klargester treatment plants, although this can be challenging as these type of treatment plants require a reasonable flow of grey waste water.
- 7.7 Although it is now several years since the main farming use, it is considered likely that the effluent discharges from the site resulting from the previous use of the larger Barns 1/2 as covered cattle barns would have been higher than that which will result from the four converted dwellings.

8. Exceedance Events

- 8.1 Exceedance events are taken as greater than the design rainfall event (greater than 1 in 100 year rainfall event plus 40% climate change allowance)
- 8.2 In this event it is necessary to check whether, if flooding would occur, that can be contained on site and does not ingress into any dwelling, or cause an impact to neighbouring properties or sites.
- 8.3 The application site and surrounding land is in a rural area and the site slopes down towards the Herrings Stream. There is one property between the the location of the banking to Barns1/2 and this designated 'main river, Hammonds Mill Farmhouse.
- 8.4 In an exceedance event, surface water from the banking should be contained by the proposed upgraded land drainage system at bottom of the banking. Surface water from the farmyard, which falls to the south, would flow directly to the overflow stream and the Herrings Stream, over the grass farm track and grass pasture.
- 8.5 In the event that the upgraded land drainage system at the bottom of the banking to Barns 1/2 became overwhelmed, surface water would flow down the 2.5m wide margin areas between Barns 1/2 and the bottom of the banks to the farmyard where it would flow down to the Herrings Stream and its river flood area.
- 8.6 As the FFL of the converted barns will be 250mm above the existing barn floor level, which is 150mm above the external ground level at the bottom of the banking, the exceedance event should not cause any ingress to the converted dwellings. particularly if the external ground at the bottom of the banking is given a fall towards the farmyard as part of the conversion works.

8.7 There will be no water ingress, or other detrimental impact to Hammonds Mill House as the external ground level and hardstanding there fall towards the farmyard, which itself falls at a good gradient towards the farm track, overflow stream and Herrings Stream.

9. Residual Flood Risk

9.1 There will always be a small residual risk of flooding due to blockage or failure of on site private drains.

9.2 Regular maintenance of the site drainage infrastructure therefore needs to be undertaken by the estate management or owners of the new, converted dwellings.

9.3 A Drainage and Maintenance Manual will be prepared and provide to the Hammonds Mill Farm Estate management and new owners.

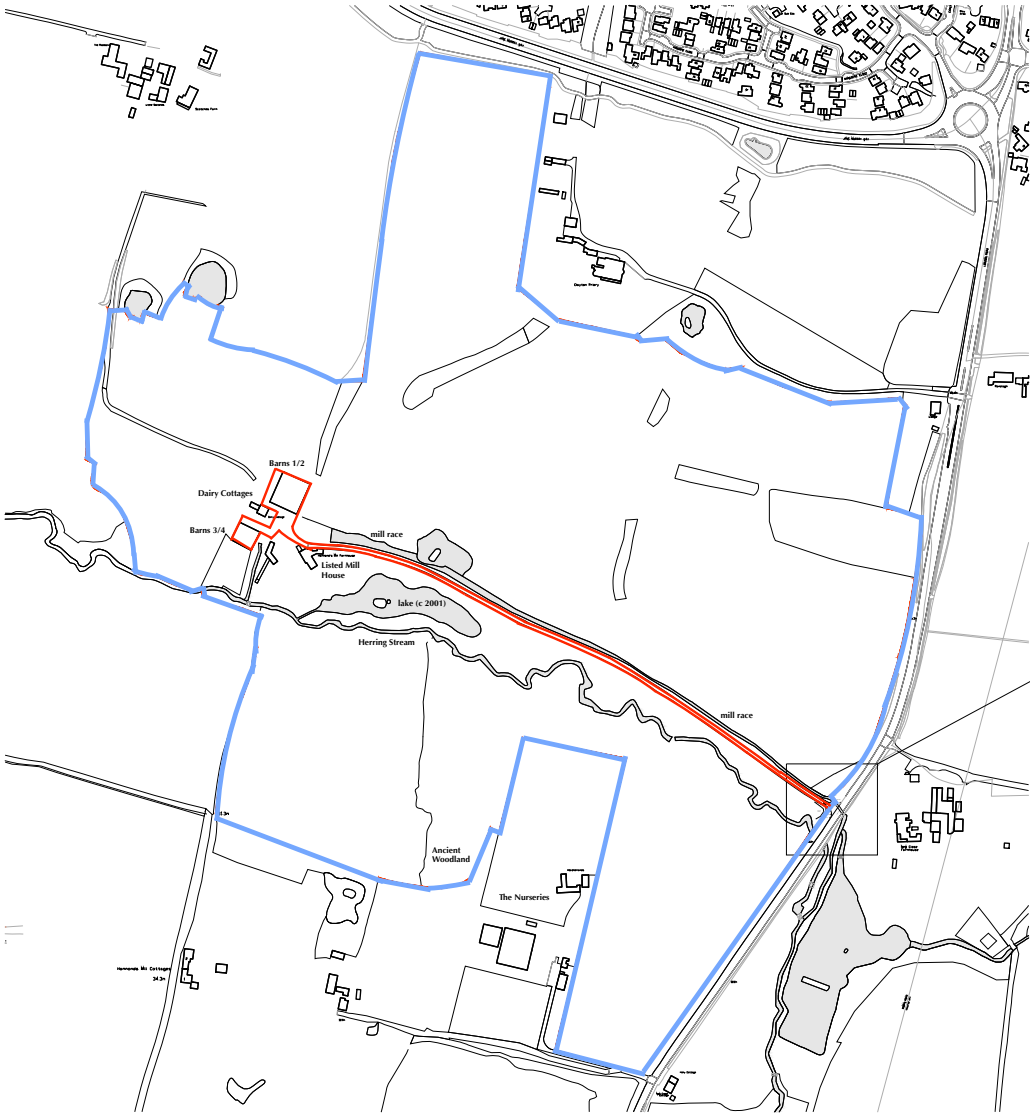
APPENDIX A

Site Location and Context Plans



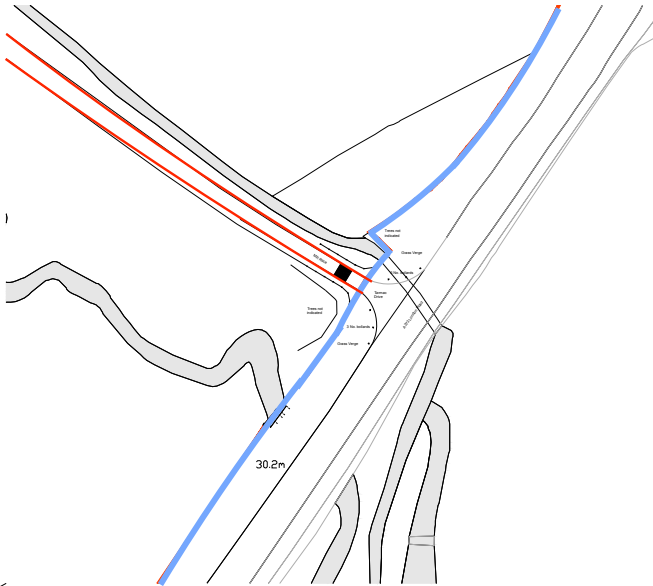
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rev	date	comment				

AS EXISTING
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Site Location Plan

0 50 100 150 200
scale in metres 1:2500



Block Plan

0 10 20 30 40
scale in metres 1:500



Planning Application Site Area
0.48 hectares



Hammonds Mill Farm Estate land
(in same ownership)

scale/original sheet size
As noted @ A1

APPENDIX B

Environment Agency Flood Risk Classification and Flood Maps for Planning

Beta This is a new service. Help us improve it and [give your feedback](#).

[Back to select an address](#)

Flood risk summary

Your selected location: Hammonds Mill Farmhouse, London Road, Hassocks, BN6 9NB

This information tells you the flood risk of the land around a building, not the building itself.

[How we assess an area's flood risk](#)

[Flood risk and climate change](#)

Surface water

[More about your surface water flood risk](#)

Yearly chance of flooding

Very low Low Medium High

Yearly chance of flooding between 2040 and 2060

Very low Low Medium High

What surface water is

Surface water flooding is sometimes known as flash flooding. It happens when rainwater cannot drain away through normal drainage systems.

[Why surface water flooding is a problem](#)

Rivers and the sea

[More about your rivers and sea flood risk](#)

Yearly chance of flooding

Very low Low Medium High

Yearly chance of flooding between 2036 and 2069

Very low Low Medium High

What makes rivers and sea flooding more likely

Low-lying areas that are close to rivers or the sea are more likely to flood when water levels rise.

This information takes into account any flood defences.

[Why flood defences cannot completely prevent flooding](#)

Other flood risks

[More about groundwater and reservoirs](#)

Groundwater

Flooding from groundwater is unlikely in this area.

Reservoirs

Flooding from reservoirs is unlikely in this area.

Beta This is a new service. Help us improve it and [give your feedback](#).

[Back to summary](#)

Contents

- **Surface water**
- [Rivers and the sea](#)
- [Groundwater and reservoirs](#)

Surface water: understand your flood risk

Your selected location: Hammonds Mill Farmhouse, London Road, Hassocks, BN6 9NB

This information tells you the flood risk of the land around a building, not the building itself.

How likely a surface water flood is

The yearly chance of surface water flooding is:

Very low staying at **Very low** between 2040 to 2060

► [What the flood risk ratings mean](#)

[View a surface water map](#) to see where any flood water might spread to.

How deep any flood water could be

Even a small amount of water can cause serious damage so it's a good idea to know how deep any flooding could be.

You cannot completely protect your property from flooding, but there's a lot you can do to reduce:

- the amount of flood water that gets in
- the damage from flood water
- the cost and time of cleaning up after a flood

[See how deep any flood water could be at your selected location](#).

What to do next

Read about how to [prepare yourself and your property for flooding](#).

You should check your flood risk regularly because the information may change.

If you need more details on surface water flood risk

Lead local flood authorities are responsible for managing flood risk from surface water. They may hold more detailed information.

Your lead local flood authority is **West Sussex County**.

→ **Next**
[Rivers and the sea](#)

Beta This is a new service. Help us improve it and [give your feedback](#).

[Back to summary](#)

Contents

- **Surface water**
- [Rivers and the sea](#)
- [Groundwater and reservoirs](#)

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→ **Next**
[Rivers and the sea](#)

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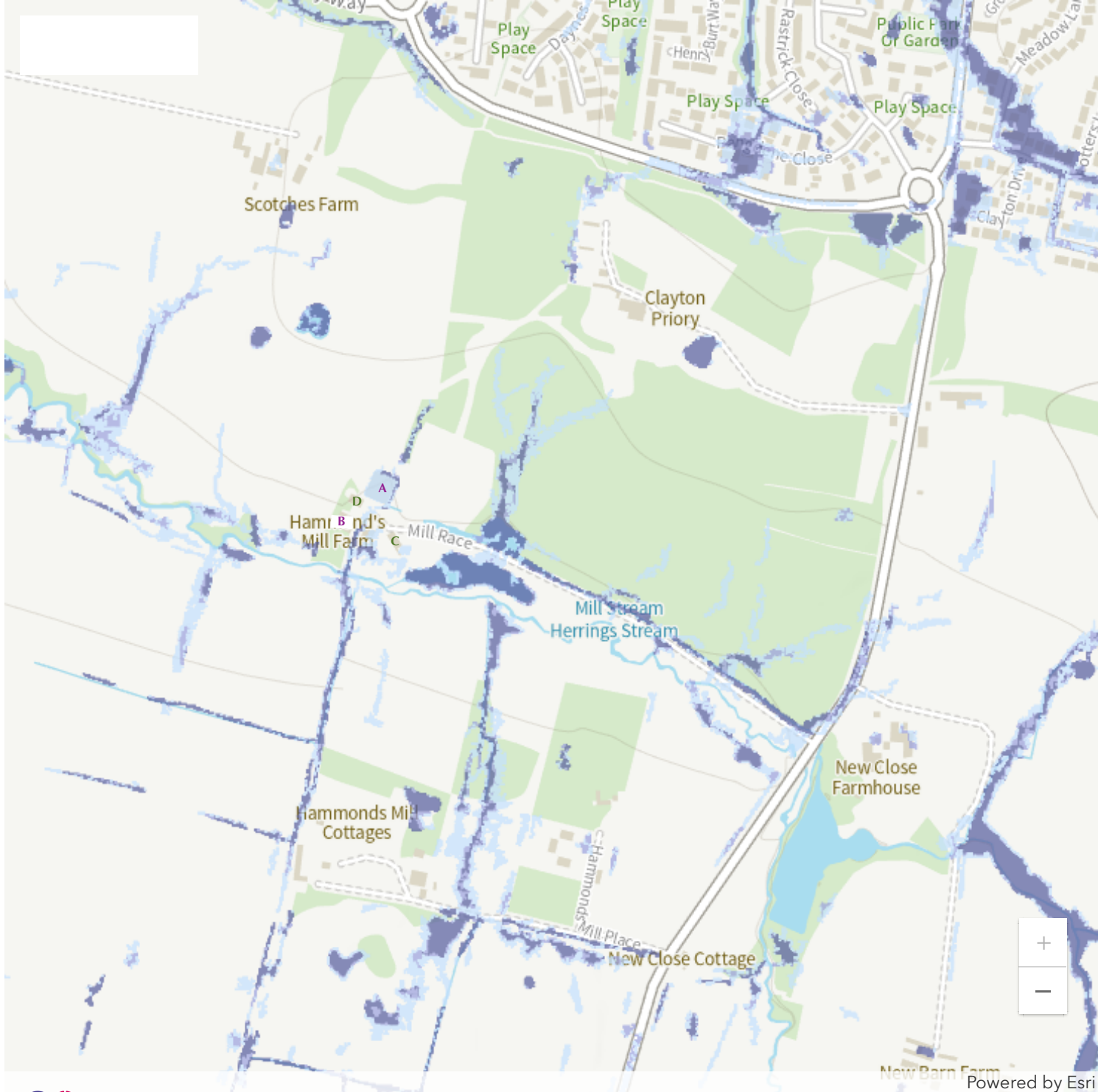


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Strategic Flood Risk Assessment



Prior Approval Class Q Application Site (agreed with MSDC)



Surface water map

 Flood area (extent)

 High chance

 Medium chance

 Low chance

Yearly chance of flooding between 2040 and 2060

 Flood area (extent)

Map details

☒ Show flooding

Hammonds Mill Farm Hassocks

Application Site

A Barns 1/2

B Barns 3/4

Existing Dwellings

C Hammonds Mill Farmhouse

D Dairy Cottage

← Exit map

Surface water

Reservoirs

Rivers and sea map

Extent

- High chance
More than 3.3% chance each year
- Medium chance
Between 1% and 3.3% chance each year
- Low chance
Between 0.1% and 1% chance each year
- Very low chance
Less than 0.1% chance each year

Depth

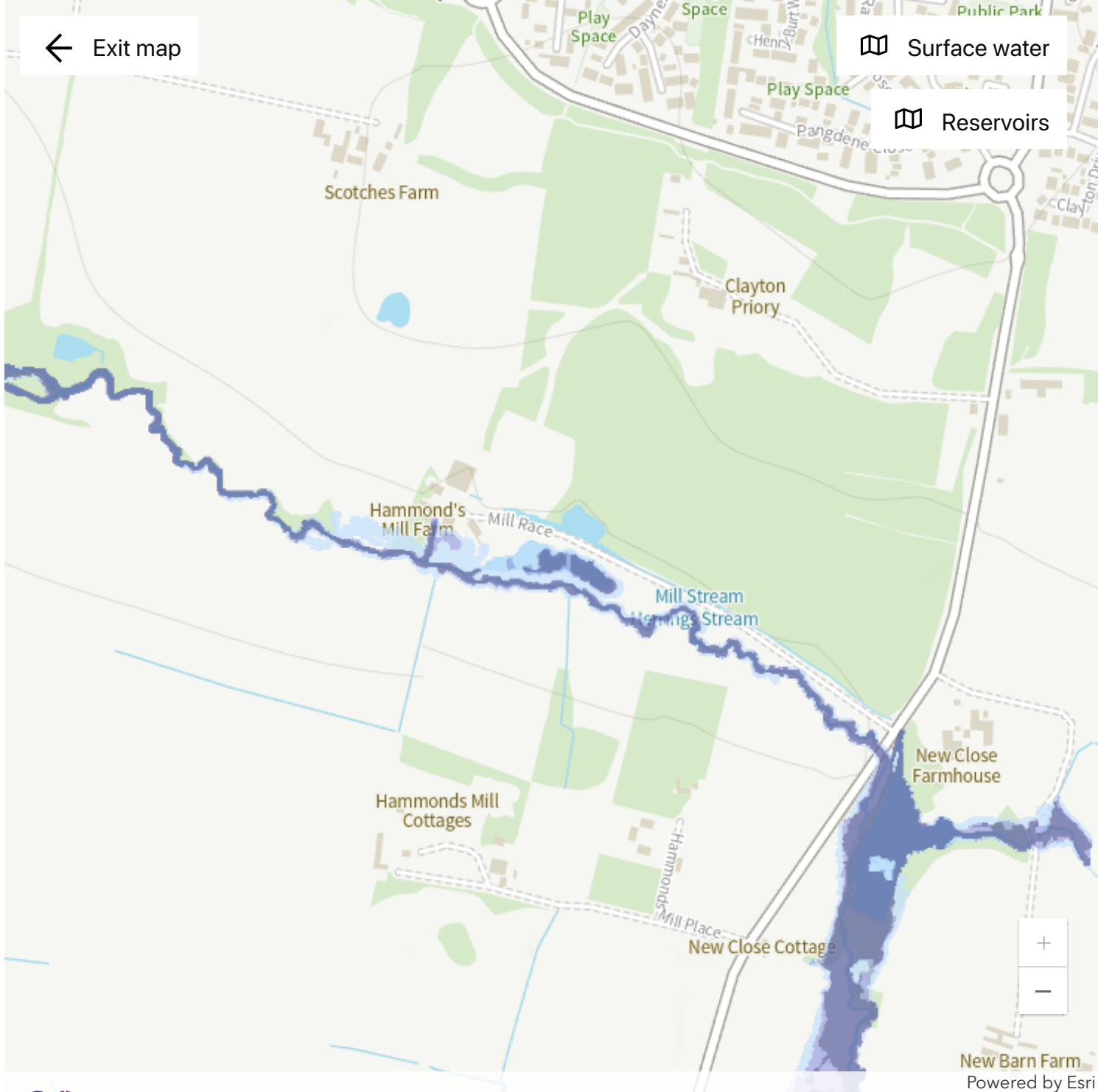
Yearly chance of flooding
between 2036 and 2069

Extent

Depth

Map details

☒ Show flooding



← Exit map

Surface water

Reservoirs

Rivers and sea map

Extent

Depth

Yearly chance of flooding between 2036 and 2069

Extent

Depth

High chance

More than 3.3% chance each year

Medium chance

Between 1% and 3.3% chance each year

Low chance

Between 0.1% and 1% chance each year

Very low chance

Less than 0.1% chance each year

No data available

Map details

☒ Show flooding

To
20cm
(8in)

To
30cm
(1ft)

To
60cm
(2ft)

To
90cm
(3ft)

Esri

← Exit map

Surface water

Reservoirs

Rivers and sea map

Extent

Depth

Yearly chance of flooding between 2036 and 2069

Extent

High chance

More than 3.3% chance each year

Medium chance

Between 1% and 3.3% chance each year

Low chance

Between 0.1% and 1% chance each year

Very low chance

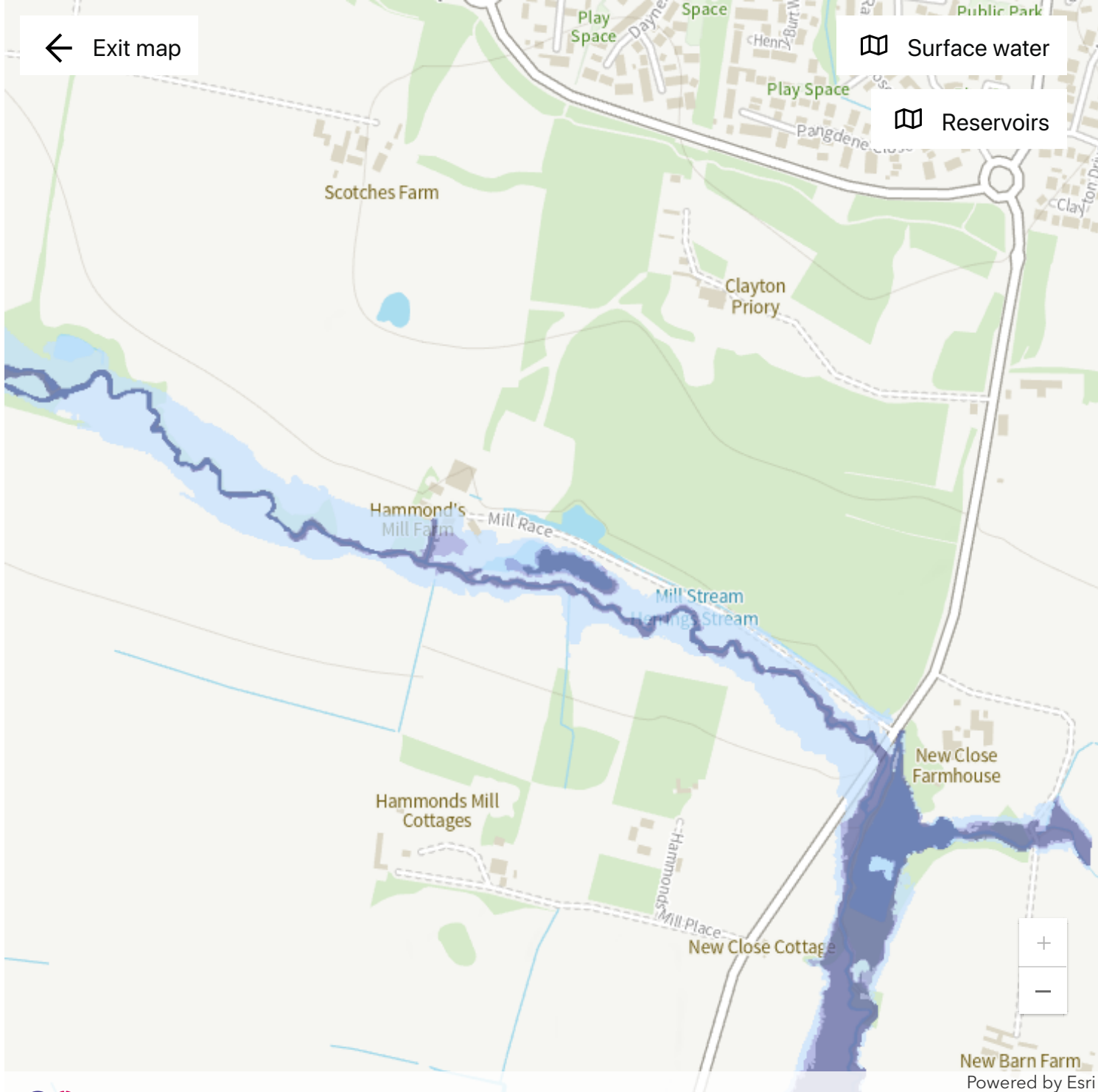
Less than 0.1% chance each year

No data available

Depth

Map details

☒ Show flooding



← Exit map

📖 Rivers and the sea

📖 Reservoirs

Surface water map

🕒 Extent



High chance

More than 3.3% chance each year



Medium chance

Between 1% and 3.3% chance each year



Low chance

Between 0.1% and 1% chance each year

○ Depth

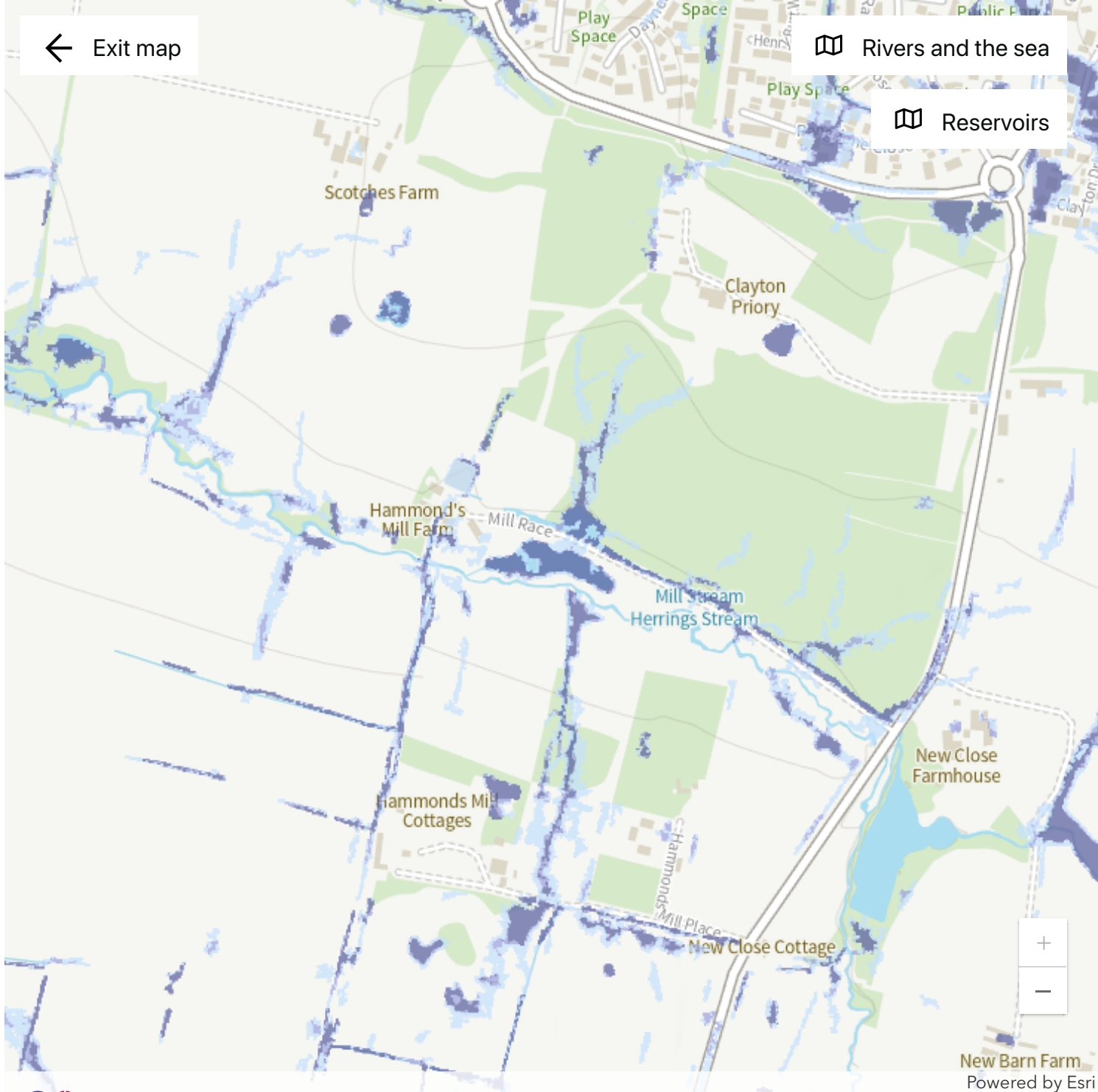
Yearly chance of flooding between 2040 and 2060

○ Extent

○ Depth

Map details

☒ Show flooding



← Exit map

 Rivers and the sea

 Reservoirs

Surface water map

 Extent

 Depth

Yearly chance of flooding between 2040 and 2060

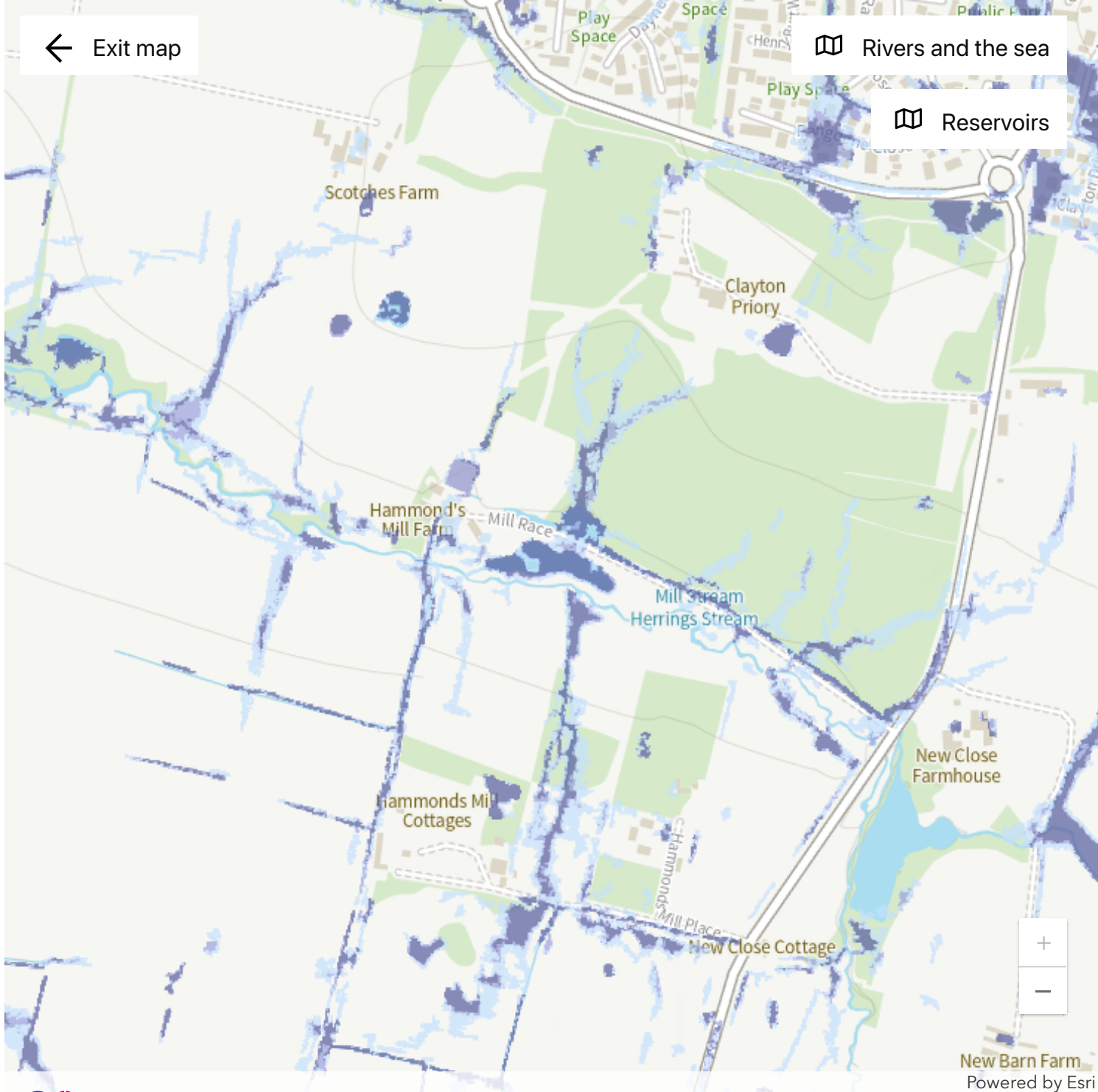
☒ Extent

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

☐ Depth

Map details

☒ Show flooding



← Exit map

 Rivers and the sea

 Reservoirs

Surface water map

☐ Extent

☐ Depth

Yearly chance of flooding between 2040 and 2060

☐ Extent

☒ Depth

 High chance

More than 3.3% chance each year

 Medium chance

Between 1% and 3.3% chance each year

 Low chance

Between 0.1% and 1% chance each year

Map details

☒ Show flooding

☒ To
20cm
(8in)

☐ To
30cm
(1ft)

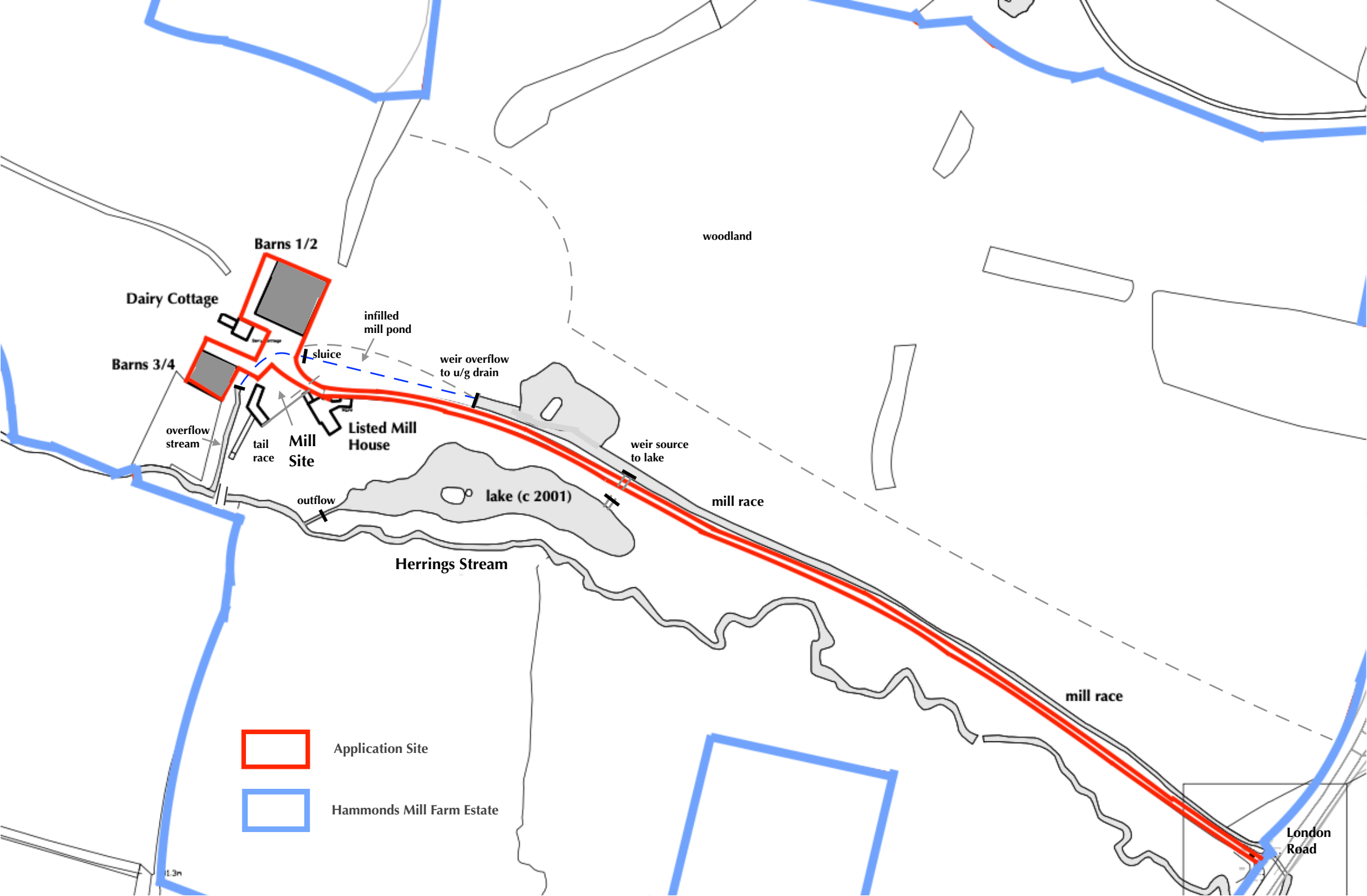
☐ To
60cm
(2ft)

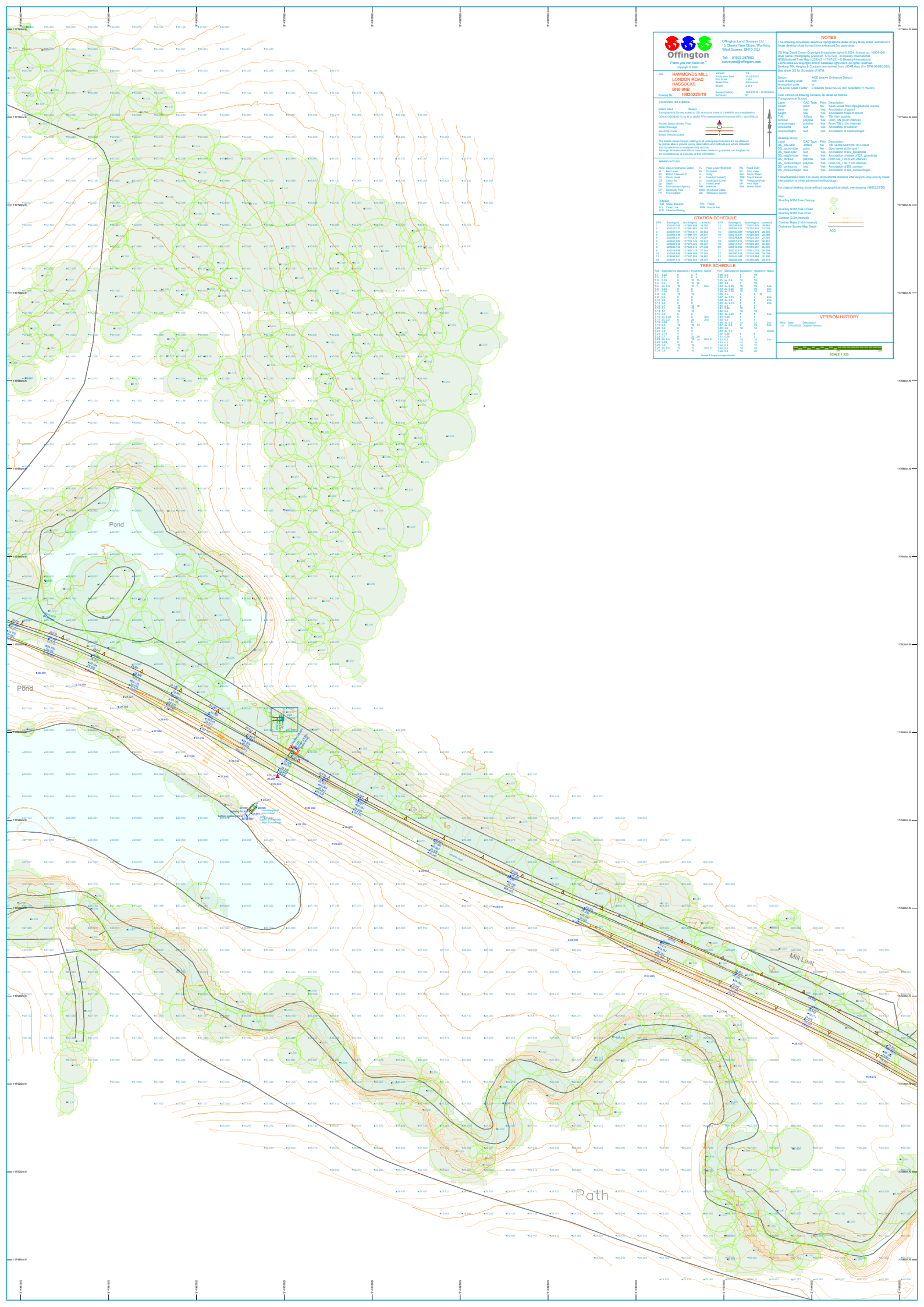
☐ To
90cm
(3ft)

 m
Esri

APPENDIX C

Former Water Mill Water Infrastructure Plan







Offington
Plans you can build on

Offington Land Services Ltd
12 Cherry Tree Close, Buntingford
West Sussex, BN13 3GJ
Tel: 01903 297955
buntingford@offington.com

**Hammonds Mill
LONDON ROAD
HASSECKS
BN6 9NB
BN60229TB**

Station: T2
Plan Scale: 1:250
Sheet: 1 of 1
Revision: 1
Drawn: [Name]
Checked: [Name]
Approved: [Name]

NOTES
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STATION SCHEDULE

Station	Height	Station	Height
1	100.00	10	100.00
2	100.00	11	100.00
3	100.00	12	100.00
4	100.00	13	100.00
5	100.00	14	100.00
6	100.00	15	100.00
7	100.00	16	100.00
8	100.00	17	100.00
9	100.00	18	100.00
10	100.00	19	100.00
11	100.00	20	100.00

TREE SCHEDULE

Tree ID	Species	Height	Notes
1	Oak	10m	
2	Oak	10m	
3	Oak	10m	
4	Oak	10m	
5	Oak	10m	
6	Oak	10m	
7	Oak	10m	
8	Oak	10m	
9	Oak	10m	
10	Oak	10m	
11	Oak	10m	
12	Oak	10m	
13	Oak	10m	
14	Oak	10m	
15	Oak	10m	
16	Oak	10m	
17	Oak	10m	
18	Oak	10m	
19	Oak	10m	
20	Oak	10m	

VERSION HISTORY

Rev	Date	Description
1	2020-01-01	Initial Issue

DESKTOP STUDY TREE SCHEDULE									
Ref	Stationing	Tree ID	Species	Height (m)	DBH (cm)	Condition	Notes	Ref	Stationing
1	100+00	T10001	Acacia	10	15	Good		101	100+00
2	100+05	T10002	Acacia	12	18	Good		102	100+05
3	100+10	T10003	Acacia	11	16	Good		103	100+10
4	100+15	T10004	Acacia	13	20	Good		104	100+15
5	100+20	T10005	Acacia	14	22	Good		105	100+20
6	100+25	T10006	Acacia	15	24	Good		106	100+25
7	100+30	T10007	Acacia	16	26	Good		107	100+30
8	100+35	T10008	Acacia	17	28	Good		108	100+35
9	100+40	T10009	Acacia	18	30	Good		109	100+40
10	100+45	T10010	Acacia	19	32	Good		110	100+45
11	100+50	T10011	Acacia	20	34	Good		111	100+50
12	100+55	T10012	Acacia	21	36	Good		112	100+55
13	100+60	T10013	Acacia	22	38	Good		113	100+60
14	100+65	T10014	Acacia	23	40	Good		114	100+65
15	100+70	T10015	Acacia	24	42	Good		115	100+70
16	100+75	T10016	Acacia	25	44	Good		116	100+75
17	100+80	T10017	Acacia	26	46	Good		117	100+80
18	100+85	T10018	Acacia	27	48	Good		118	100+85
19	100+90	T10019	Acacia	28	50	Good		119	100+90
20	100+95	T10020	Acacia	29	52	Good		120	100+95
21	101+00	T10021	Acacia	30	54	Good		121	101+00
22	101+05	T10022	Acacia	31	56	Good		122	101+05
23	101+10	T10023	Acacia	32	58	Good		123	101+10
24	101+15	T10024	Acacia	33	60	Good		124	101+15
25	101+20	T10025	Acacia	34	62	Good		125	101+20
26	101+25	T10026	Acacia	35	64	Good		126	101+25
27	101+30	T10027	Acacia	36	66	Good		127	101+30
28	101+35	T10028	Acacia	37	68	Good		128	101+35
29	101+40	T10029	Acacia	38	70	Good		129	101+40
30	101+45	T10030	Acacia	39	72	Good		130	101+45
31	101+50	T10031	Acacia	40	74	Good		131	101+50
32	101+55	T10032	Acacia	41	76	Good		132	101+55
33	101+60	T10033	Acacia	42	78	Good		133	101+60
34	101+65	T10034	Acacia	43	80	Good		134	101+65
35	101+70	T10035	Acacia	44	82	Good		135	101+70
36	101+75	T10036	Acacia	45	84	Good		136	101+75
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85	104+20	T10085	Acacia	94	182	Good		185	104+20
86	104+25	T10086	Acacia	95	184	Good		186	104+25
87	104+30	T10087	Acacia	96	186	Good		187	104+30
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97	104+80	T10097	Acacia	106	206	Good		197	104+80
98	104+85	T10098	Acacia	107	208	Good		198	104+85
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107	105+30	T10107	Acacia	116	226	Good		207	105+30
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109	105+40	T10109	Acacia	118	230	Good		209	105+40
110	105+45	T10110	Acacia	119	232	Good		210	105+45
111	105+50	T10111	Acacia	120	234	Good		211	105+50
112	105+55	T10112	Acacia	121	236	Good		212	105+55
113	105+60	T10113	Acacia	122	238	Good		213	105+60
114	105+65	T10114	Acacia	123	240	Good		214	105+65
115	105+70	T10115	Acacia	124	242	Good		215	105+70
116	105+75	T10116	Acacia	125	244	Good		216	105+75
117	105+80	T10117	Acacia	126	246	Good		217	105+80
118	105+85	T10118	Acacia	127	248	Good		218	105+85
119	105+90	T10119	Acacia	128	250	Good		219	105+90
120	105+95	T10120	Acacia	129	252	Good		220	105+95
121	106+00	T10121	Acacia	130	254	Good		221	106+00
122	106+05	T10122	Acacia	131	256	Good		222	106+05
123	106+10	T10123	Acacia	132	258	Good		223	106+10
124	106+15	T10124	Acacia	133	260	Good		224	106+15
125	106+20	T10125	Acacia	134	262	Good		225	106+20
126	106+25	T10126	Acacia	135	264	Good		226	106+25
127	106+30	T10127	Acacia	136	266	Good		227	106+30
128	106+35	T10128	Acacia	137	268	Good		228	106+35
129	106+40	T10129	Acacia	138	270	Good		229	106+40
130	106+45	T10130	Acacia	139	272	Good		230	106+45
131	106+50	T10131	Acacia	140	274	Good		231	106+50
132	106+55	T10132	Acacia	141	276	Good		232	106+55
133	106+60	T10133	Acacia	142	278	Good		233	106+60
134	106+65	T10134	Acacia	143	280	Good		234	106+65
135	106+70	T10135	Acacia	144	282	Good		235	106+70
136	106+75	T10136	Acacia	145	284	Good		236	106+75
137	106+80	T10137	Acacia	146	286	Good		237	106+80
138	106+85	T10138	Acacia	147	288	Good		238	106+85
139	106+90	T10139	Acacia	148	290	Good		239	106+90
140	106+95	T10140	Acacia	149	292	Good		240	106+95
141	107+00	T10141	Acacia	150	294	Good		241	107+00
142	107+05	T10142	Acacia	151	296	Good		242	107+05
143	107+10	T10143	Acacia	152	298	Good		243	107+10
144	107+15	T10144	Acacia	153	300	Good		244	107+15
145	107+20	T10145	Acacia	154	302	Good		245	107+20
146	107+25	T10146	Acacia	155	304	Good		246	107+25
147	107+3								