



Flood Risk Assessment

IN RELATION TO

RESIDENTIAL EXTENSION AND RENOVATION

AT

HIGHER ELKER LODGE
WHALLEY ROAD
BILLINGTON
CLITHEROE
LANCASHIRE
BB7 9HY

ON BEHALF OF

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Flood Risk Assessment

Higher Elker Lodge, Whalley Road, Billington, Clitheroe, Lancashire, BB7 9HY

1. Introduction

- 1.1 This Flood Risk Assessment (FRA) for Higher Elker Lodge, Billington, Lancashire, has been undertaken as the proposed development is located in an area identified with surface water flood risk. The FRA is being carried out in accordance with the requirements of Ribble Valley Borough Council as Lead Local Flood Authority (LLFA) and Chapter 18 of the NPPF for new developments to take a risk-based approach in considering the current and future impacts of climate change, to avoid flood risk to people and property.

2. Site Overview

- 2.1 The proposed development comprises an extension to the existing residential development, Higher Elker Lodge, Whalley Road, Billington, Lancashire. The site coordinates are X: 371869, Y: 435434, the site location can be seen in **Figure 1** below and at **Appendix A**. The plan at **Appendix B** shows the proposed site plan.

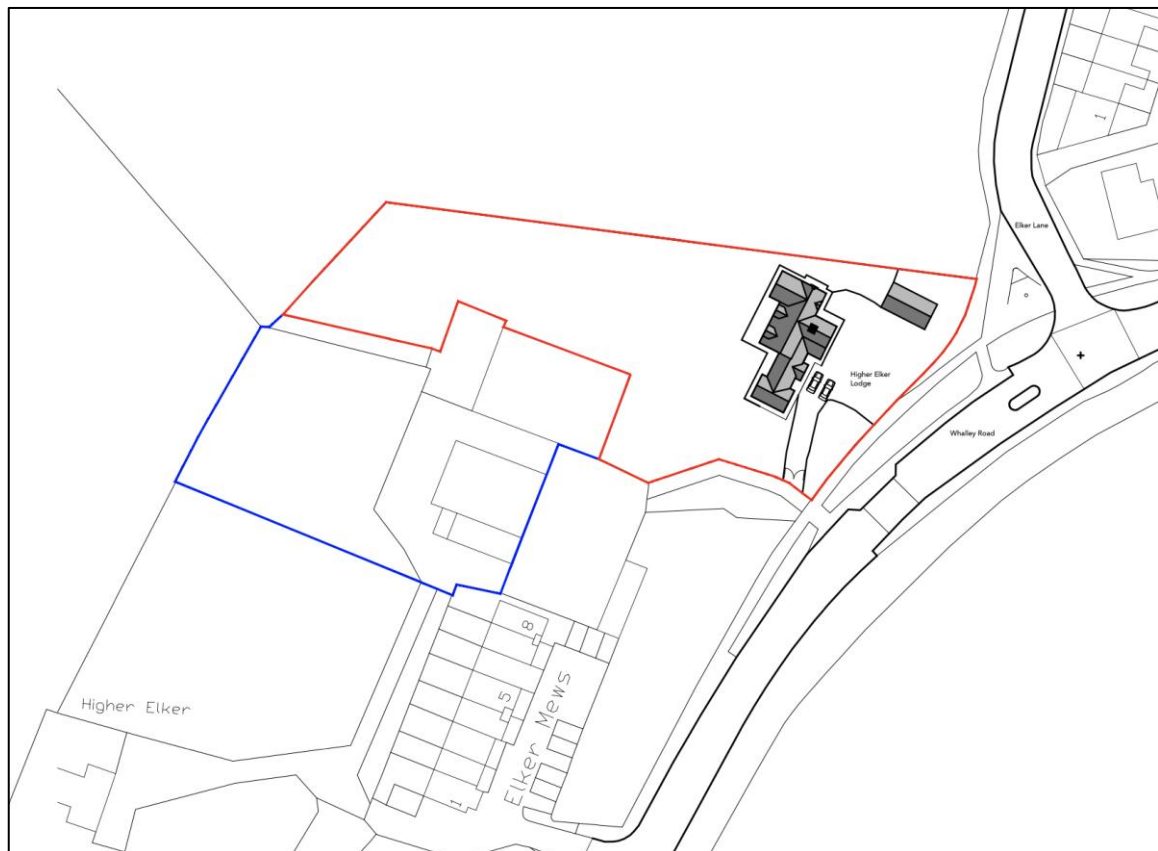


Figure 1: Site Location (Google 2026)

3. Topography

- 3.1 LiDAR data has been consulted to assess site topography. Although this can't wholly be relied upon, LiDAR provides a very good indication of levels and gradients across the site (**Figure 2**). This shows the site has a peak elevation of 66.00m AOD along the southern site boundary, and lowest elevation of 64.50m AOD along the northern boundary, with a fall of approximately 1 in 30 from south to north. Access to the site is proposed from Whalley Road which has an elevation of 66.00m AOD.

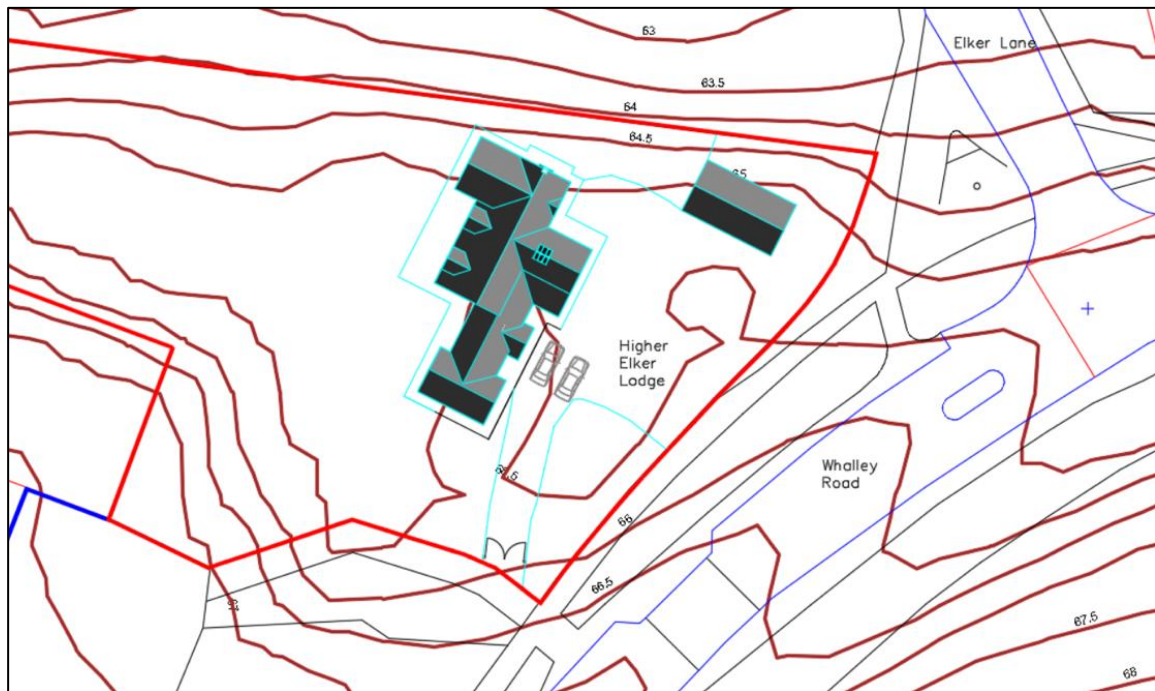


Figure 2: Extract of EA LiDAR Contours

4. Site Ground Conditions

- 4.1 Publicly available data from the British Geological Survey (BGS) mapping services has been used to obtain details of the underlying bedrock. **Figure 3** on the following page shows an extract from BGS geology viewer indicating the site is underlain by Bowland Shale Formation-Mudstone, sedimentary rocks are marine in origin. As shown in **Figure 4**, BGS records the superficial deposits as Till, Devensian-Diamicton, sedimentary deposits that are glacial in origin. Additionally, to further investigate the ground conditions, LandIS has been consulted, as shown in **Figure 5**. This shows the site has upper soils that are seasonally wet loamy and with impeded drainage.

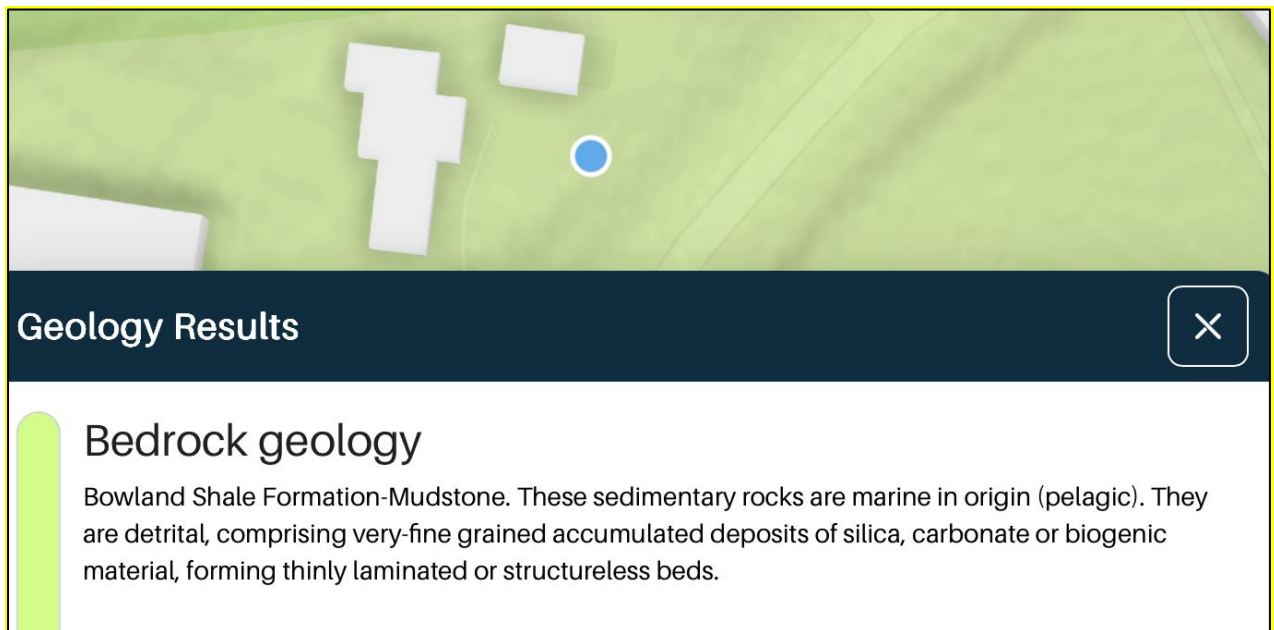


Figure 3: Extract of bedrock geology (BGS 2026)

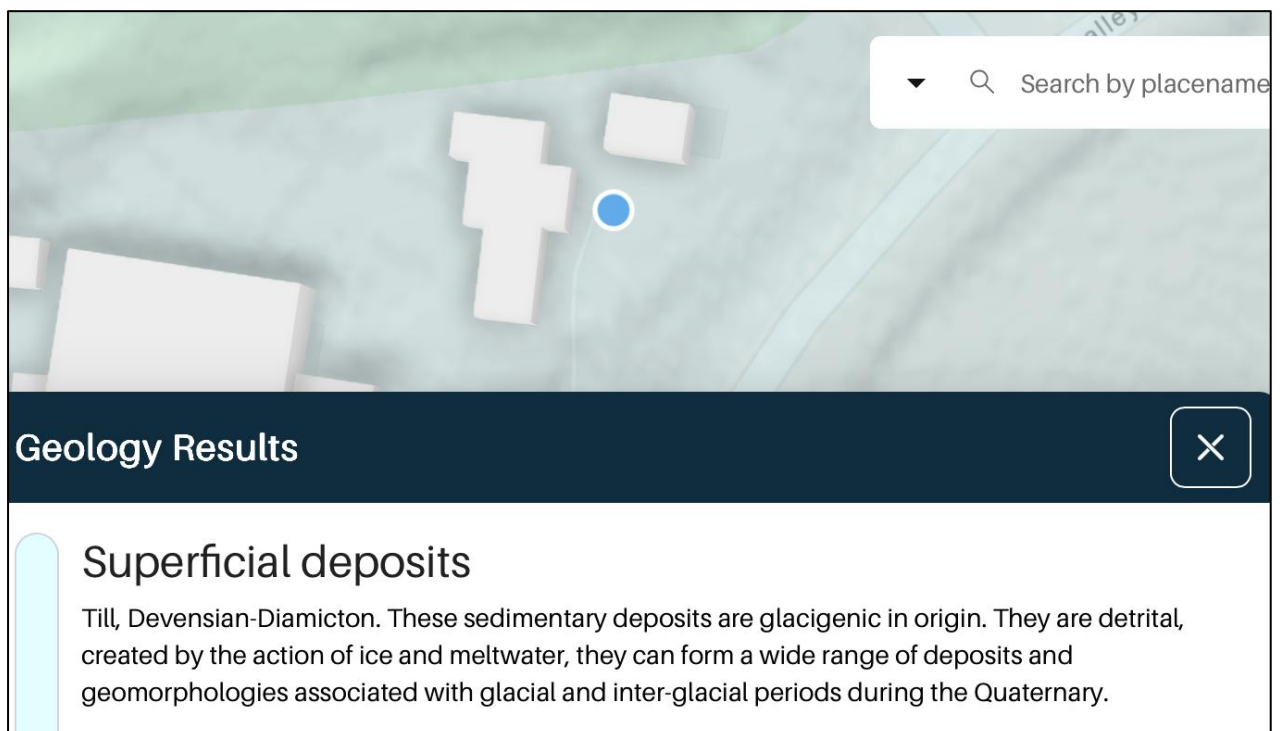


Figure 4: Extract of Superficial Deposits (BGS 2026)

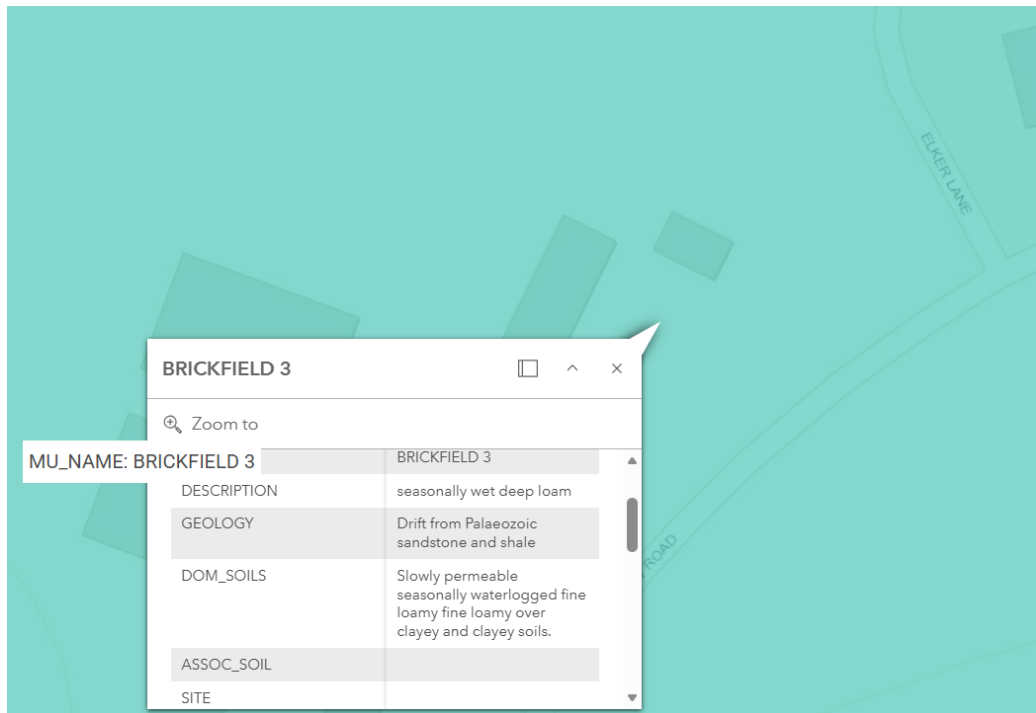


Figure 5: Extract of LandIS Geology Viewer (2026)

- 4.2 There are no boreholes recorded within the site curtilage or surrounding area within a 1.0km radius of the site. As such, boreholes outside this search area have not been assessed as they're unlikely to provide representative data to the site.
- 4.3 Further to the above ground conditions assessment, Defra's 'Magic Map' has been consulted to assess any potential designations. This shows the site is not within a source protection zone and appears to be in a Secondary undifferentiated bedrock and superficial aquifer designation. Further, Magic Maps records the site as being Medium – Low risk of Groundwater Vulnerability.

5. Site Flood Risk

- 5.1 Flood risk comes from several sources including coastal, fluvial (rivers and watercourses), reservoirs (breaches or capacity related), pluvial (surface water ‘overland’ flows), groundwater and from drains and sewers. Table 1 below provides a summary of flood sources and their anticipated risk to the site. A qualitative approach has been taken in assessing the site flood risk, and the following sections provide greater detail and justification for the selected risk level.

Flood Risk Type	Potential Risk (high, medium, low or none)	Reason
Fluvial	Low	Site is within Flood Zone 1.
Surface Water	Low	Surface water flood depths above 150mm outside the development area.
Groundwater	Low	Geology indicates low risk of groundwater flooding.
Reservoirs	None	Site not within recorded reservoir extents.
Sewers & Highway Drains	Low	Adjacent highway has positive drainage.
Culverts	Low	No culverts identified in vicinity of the site.
Access	Low	All approaches to the site are free of flood risk.

Table 1: Summary of Flood Risk

6. Fluvial

- 6.1 The proposed extension to the existing residential development is classed as more vulnerable infrastructure within the National Planning Policy Framework (NPPF). With reference to the Flood Risk Vulnerability Classification – Table 3, the NPPF guidance on flood risk deems more vulnerable infrastructure in Flood Zone 1 as appropriate development.
- 6.2 The EA flood map for planning – Fluvial flood extents for the 1:1000 AEP with climate change indicates the proposed development is located within Flood Zone 1, as shown in **Figure 6** below. The site is predominantly located outside areas identified as being at risk of fluvial flooding. Flood Zones 2 and 3 are present in the wider vicinity of the site, primarily associated with the watercourse/low-lying land to the south-east and to the north.

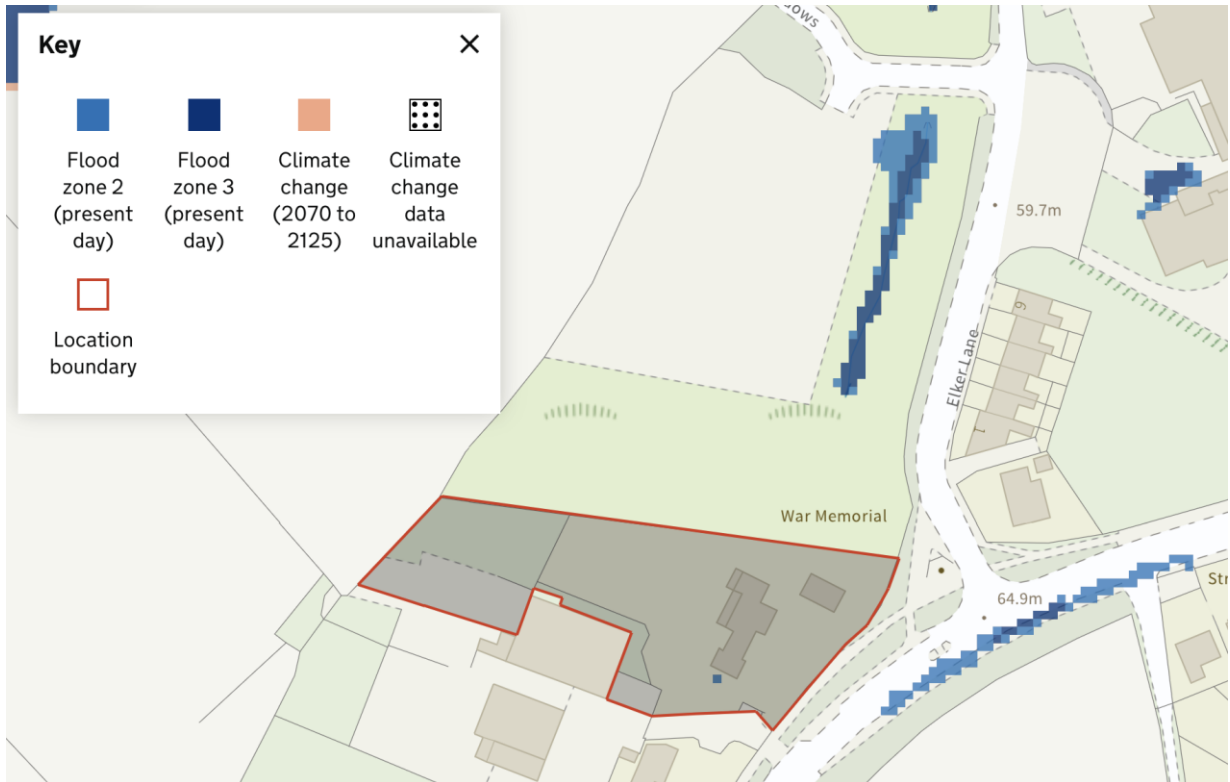


Figure 6: EA Flood Map for Planning – Fluvial flood extents for the 1:1000 AEP Event
Climate change period 2070 to 2125 (Crown Copyright 2026)

- 6.3 There is a small, isolated area of Flood Zone 2 identified in the southern portion of the site, as shown in **Figure 7** below. However, having reviewed the site levels in the vicinity of the flood risk identified, we believe this may be an anomaly in the flood mapping, as this area is generally flat.

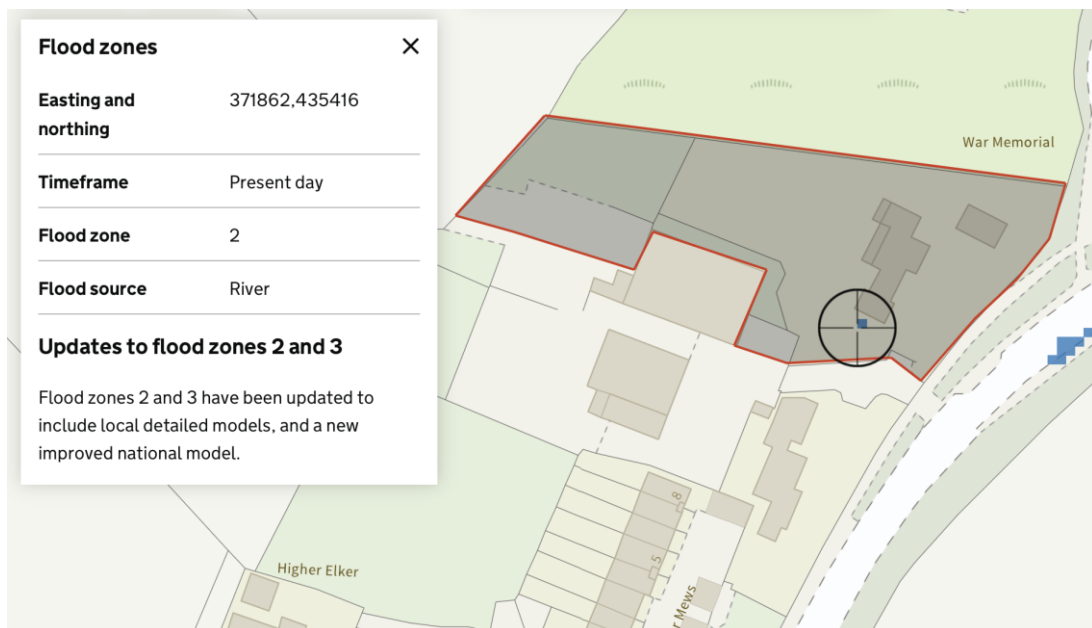


Figure 7: EA Flood Map for Planning – Fluvial flood extents for
the 1:1000 AEP Event Climate change period 2070 to 2125 (Crown Copyright 2026)

6.4 Given the majority of the site and existing built footprint lie outside the mapped fluvial flood risk areas. The site is considered to have low fluvial flood risk.

7.0 Surface water

7.1 The EA's flood map for planning – surface water extents for the 1:1000 AEP Event with climate change has been consulted as shown in **Figure 8** below. This indicates a large swathe of surface water flooding across the site associated with overland flows. The surface water flooding is identified as mainly low chance of occurring, less than a 1 in 1000 chance of occurring in any given year.

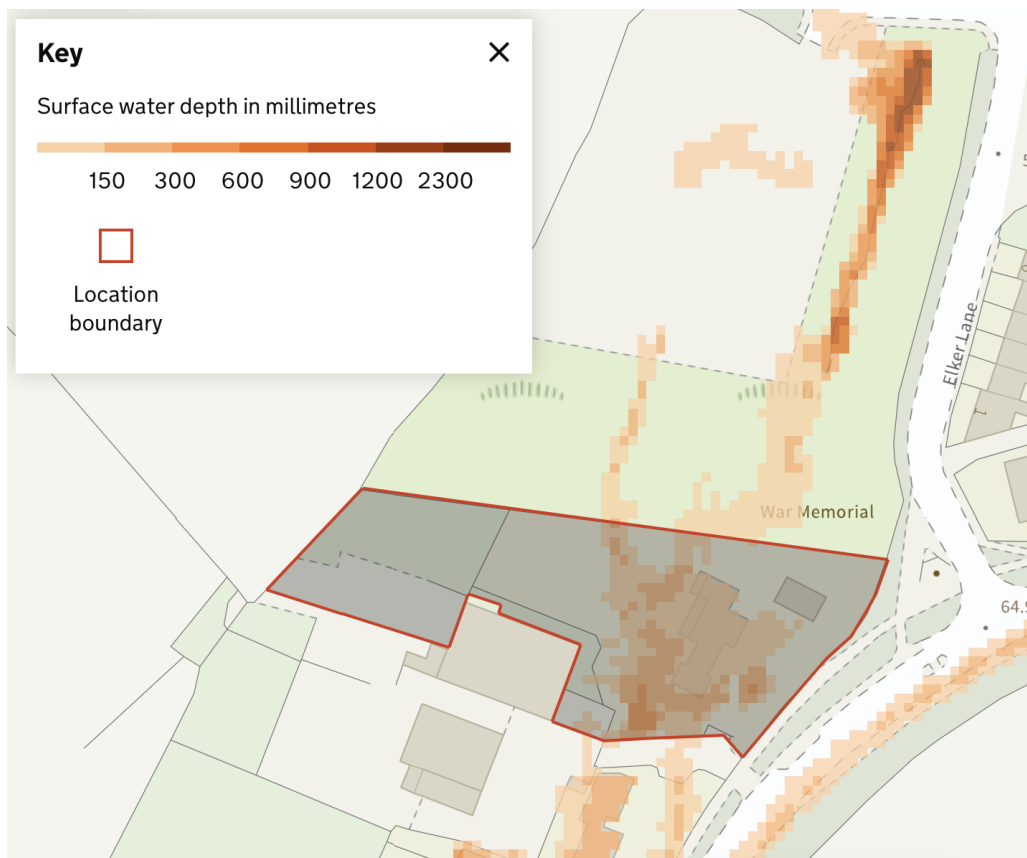


Figure 8: EA Flood Map for Planning – Surface water extents for the 1:1000 AEP Event (Climate change period 2061 to 2125)
(Crown Copyright 2026)

7.2 The extents of the surface water flooding have been further assessed by reviewing the associated flood depth extents. As shown in **Figure 9**, the extent to which surface water flood depths are above 150mm deep are much smaller and do not encroach the proposed development area.

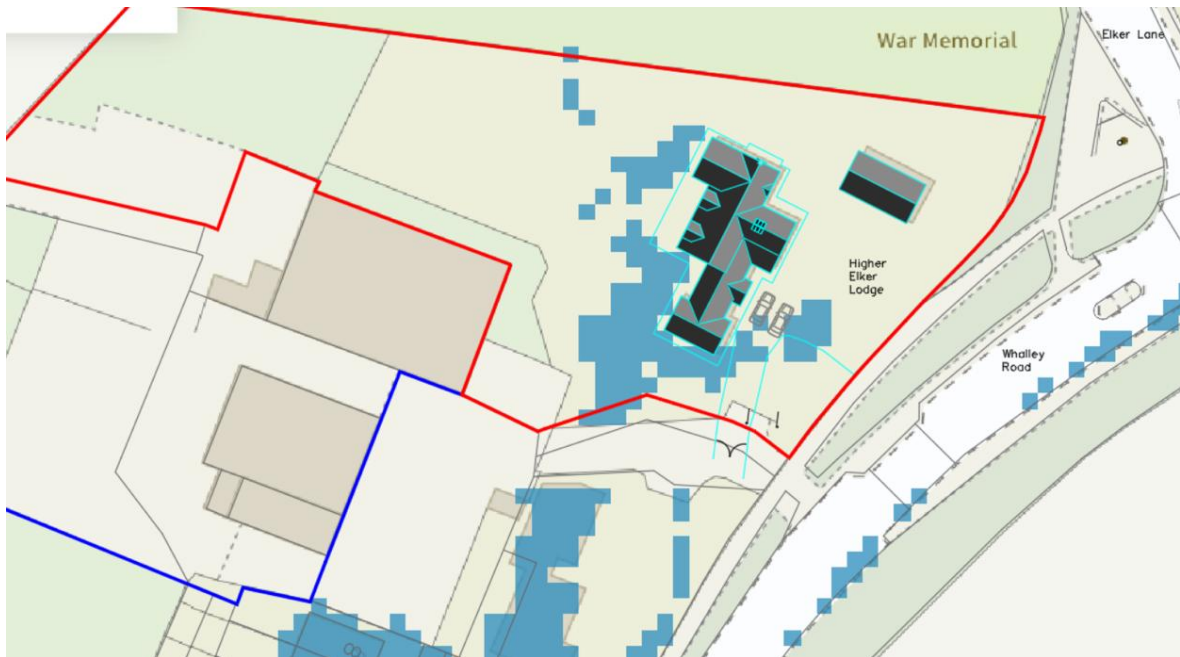


Figure 9: EA Flood Map for Planning – Surface water extents for depths over 150mm for the 1:1000 AEP Event (Climate change period 2061 to 2125)
(Crown Copyright 2026)

7.3 Further, **Figure 10 and 11** indicate the surface water flooding extents for the 1:100 AEP event is smaller still, with the associated depths above 150mm covering a significantly smaller area.

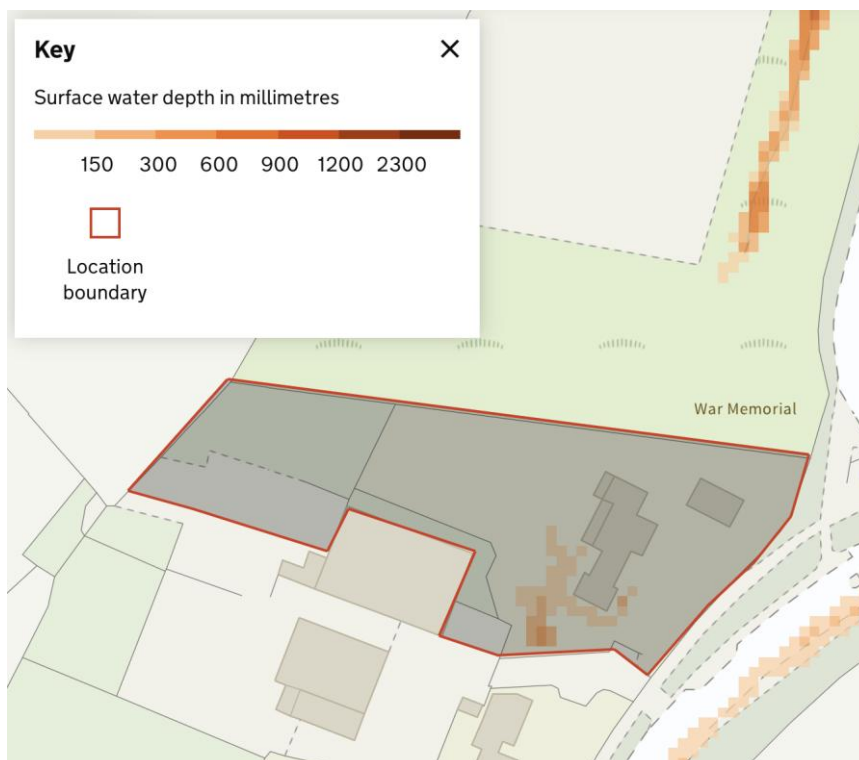


Figure 10: EA Flood Map for Planning – Surface water extents for the 1:100 AEP Event (Climate change period 2061 to 2125)
(Crown Copyright 2026)

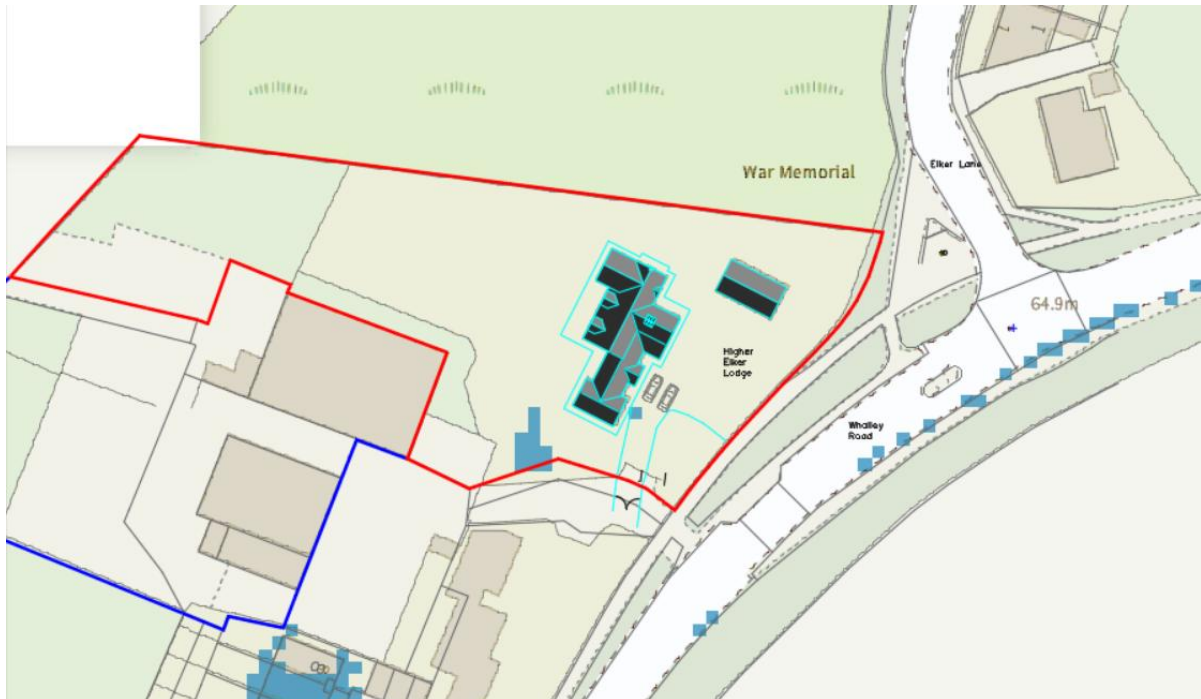


Figure 11: EA Flood Map for Planning – Surface water extents for depths over 150mm for the 1:100 AEP Event (Climate change period 2061 to 2125)
(Crown Copyright 2026)

- 7.4 With consideration to the above figures and the proposed development extents, we deem the proposed development has low risk of surface water flooding.

8.0 Groundwater

- 8.1 The Ribble Valley Borough Council Level 1 Strategic Flood Risk Assessment identifies no evidence of groundwater flooding within the Borough and concludes that groundwater flooding is not considered to represent a significant risk based on the best available information. This provides the principal strategic evidence for the assessment of groundwater flood risk at the site.
- 8.2 Site-specific geological information indicates that the site is underlain by the Bowland Shale Formation, predominantly comprising mudstone, with superficial deposits of Devensian Till. These formations generally have relatively low permeability and are not indicative of a major groundwater-bearing aquifer. The geological setting therefore provides limited potential for significant regional groundwater emergence at the site.
- 8.3 With consideration to the above factors, we consider the proposed development is low risk of being impacted by groundwater flood risk.

9.0 Reservoirs

- 9.1 The EA reservoir flood map indicates the site is not within the modelled reservoir flooding extents. As such, the risk from reservoir flooding is considered low.

10.0 Sewers & Highway Drains

- 10.1 The nearest public foul sewer can be found in Whalley Road, approximately 25m south of the proposed development. The sewer flooding incidents register is not publicly available information therefore it is not possible to confirm whether there have been any sewer flooding incidents within the site curtilage. However, given the distance to the nearest public sewer, the risk of sewer flooding is considered low.
- 10.2 Regarding highway drainage, the adjacent highway, Whalley Road, appears to have positive drainage in the form gullies connecting to a highway drain. Given the road has positive drainage, and that there is no surface water flood risk on either of the approaches to the site, the risk of flooding from highway drainage is considered low.

11.0 Culverts

- 11.1 Historic maps have been consulted to identify any historic culverts in the vicinity of the site. From our review of the available information, there appears to be no culverts in the immediate vicinity of the site. Furthermore, there are no watercourses that require culverting as part of the development. It is therefore considered that the risk of flooding associated with a culvert blockage to be low.

12.0 Access

- 12.1 Vehicular access to the site is presently gained from an existing bituminous access setback from Whalley Road. The existing access will be maintained for the proposed extension. As shown in the above figures, there appears to be a narrow swathe of both fluvial and surface water flood risk along the eastern side of Whalley Road in the vicinity of the site. However, given this is restricted to the eastern channel / verge, this is low risk of impacting access.

13.0 Climate change

- 13.1 The site is located within the Ribble Management Catchment. The EA 'upper end' prediction for this catchment specifies 40% increase in rainfall climate change factor for the 2050s and 50% for the 2070s. Given the existing low flood risks identified to the site, and that the proposed infrastructure will be raised 150mm above the existing ground level, we consider that an increase in flow rates and depths through the development site due to climate change will not have a significant impact upon the operation of the proposed development. Therefore, the effects of climate change are not anticipated to increase downstream flood risk.

14.0 Effect on wider catchment

- 14.1 The proposed development will not have a material impact on the hydrology of the existing site land or wider catchment. The proposed extension is in Flood Zone 1 and in an area of low surface water flood risk, therefore not anticipated to displace any existing flood storage capacity.

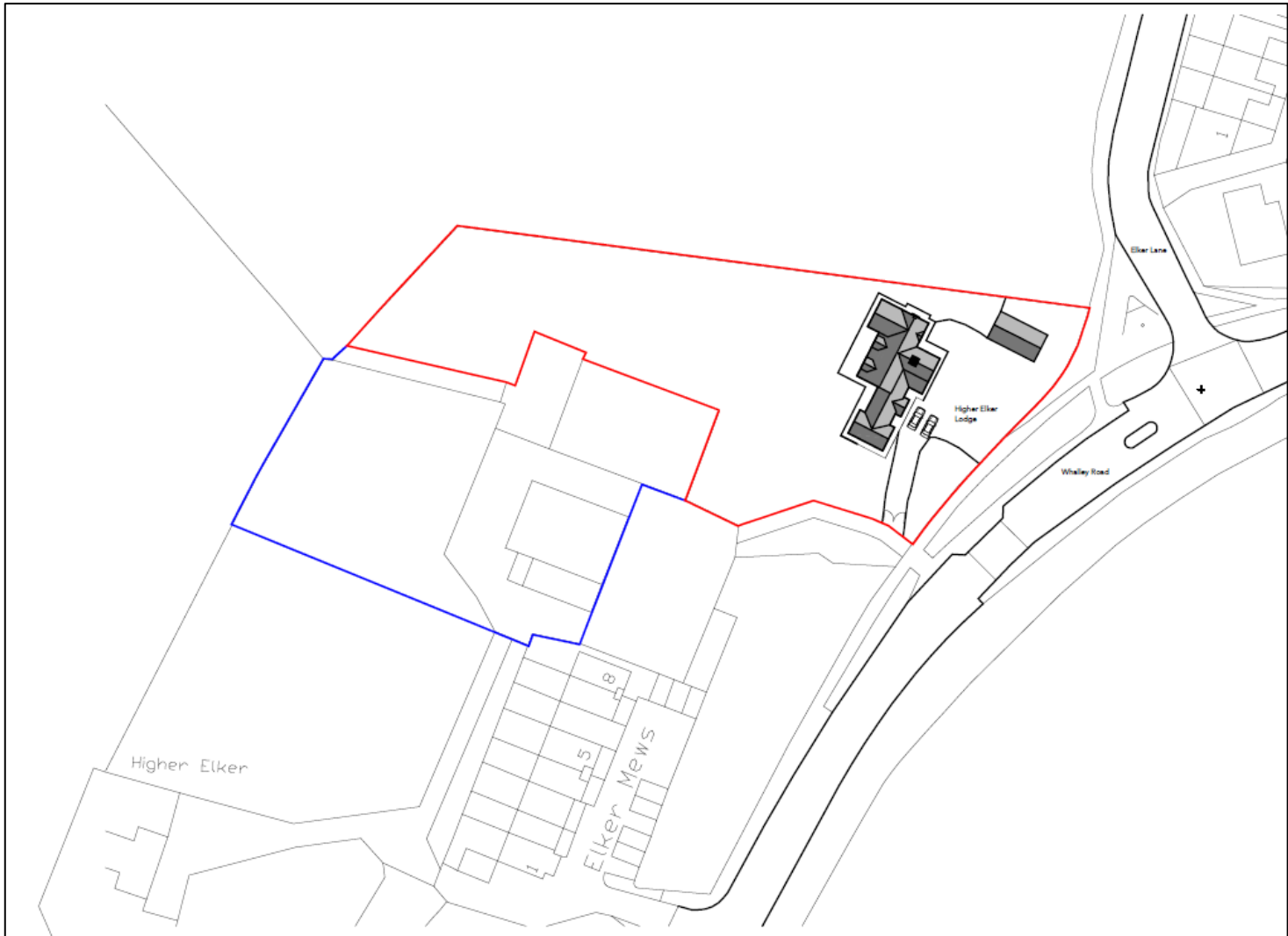
15.0 Sequential & Exception Test

- 15.1 The proposed development constitutes householder development and is therefore exempt from the Sequential Test under NPPF Policy F5(2)(c)(i). As discussed above, the proposed extension falls within Flood Zone 1 and is in an area with low surface water flood risk.

16.0 Flood Risk Assessment Conclusion and Recommendations

- 16.1 This Flood Risk Assessment (FRA) has been undertaken in response to the surface water flood risk identified at the site. The Environment Agency Flood Map for Planning indicates that the site is within the mapped extent of surface water flooding for the 1:1000 AEP event with climate change. However, further assessment of the associated flood depths indicates that depths in the vicinity of the proposed development are below 150mm. As such, surface water flooding is not anticipated to adversely affect the proposed development. Furthermore, the mapped surface water extent associated with the 1:100 AEP event with climate change is considerably smaller, further demonstrating the limited surface water flood risk to the proposed development.
- 16.2 Furthermore, our assessment of the site has not identified any significant local flood risk issues that require further investigation or mitigation measures. Nevertheless, the proposed extension has been designed to be resilient to local flood risk for the life of the development by raising finished floor levels a minimum of 150mm above existing ground levels.
- 16.3 Further to the above assessment, we are of the view that all foreseeable sources and receptors of flood risk, as a result of the development, have been considered. Accordingly, we consider that the proposed development is entirely appropriate in accordance with the NPPF guidance on flood risk.

Appendix A – Location Plan (NTS)



Appendix B – Proposed Site Plan (NTS)

