

# Rubicon Project Consultancy Ltd

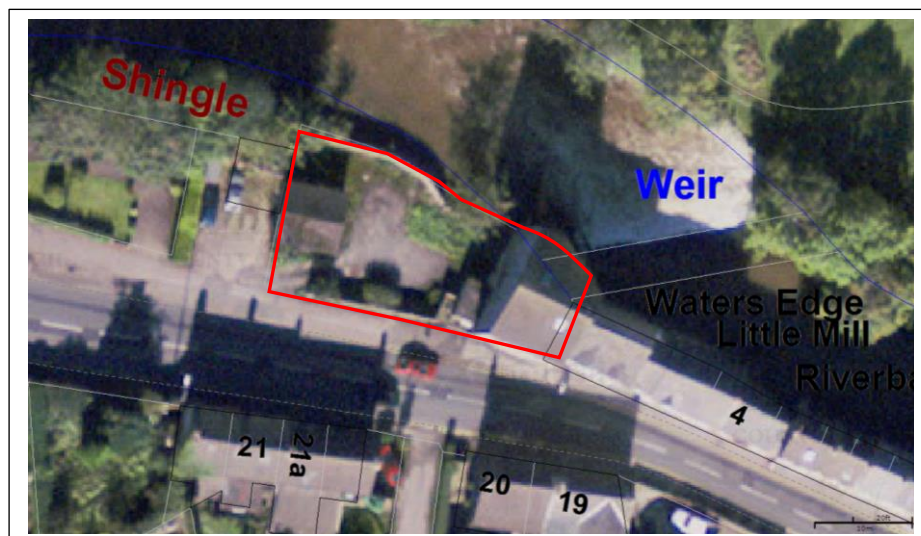
## Flood Risk Assessment

Site of Former 3 Mill House,  
Vale View, Egremont  
CA22 2RG

February 2022



Vale View, Egremont © Google



Vale View, Egremont Pre 2012

Version	Prepared by	Non-Technical Review by	Date
Draft	Rachel Gerrard	J. Tunnicliffe Wilson	19 January 2022
Final	Rachel Gerrard	J. Tunnicliffe Wilson	3 February 2022

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The contents of this FRA follows the Site Specific Flood Risk Assessment checklist as specified in the Flood Risk and Coastal change guidance at:

<https://www.gov.uk/guidance/flood-risk-and-coastal-change#contents>

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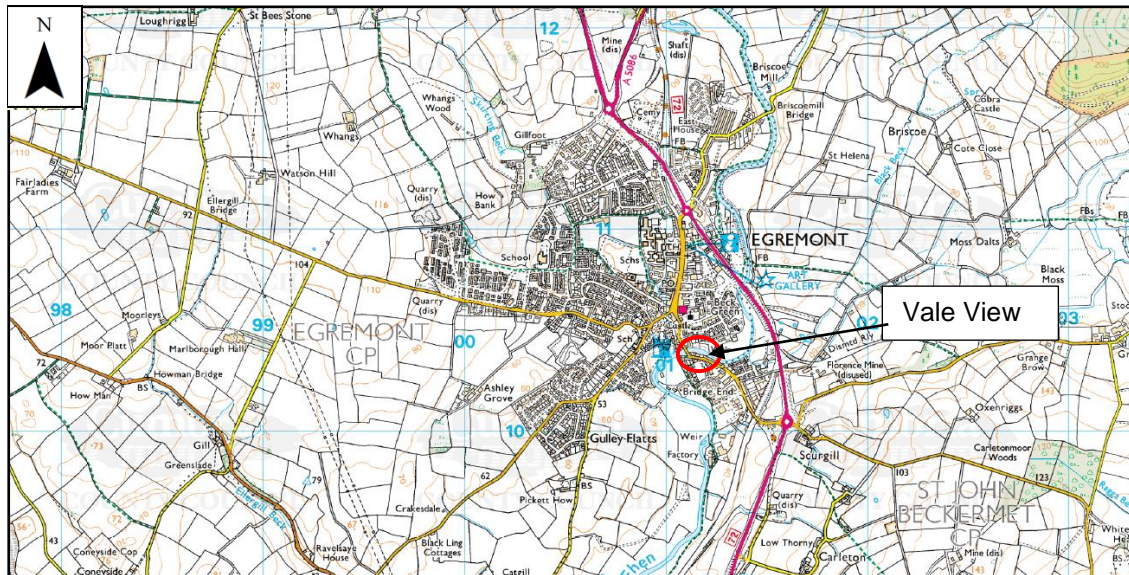
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# 1 - Development Site and Location

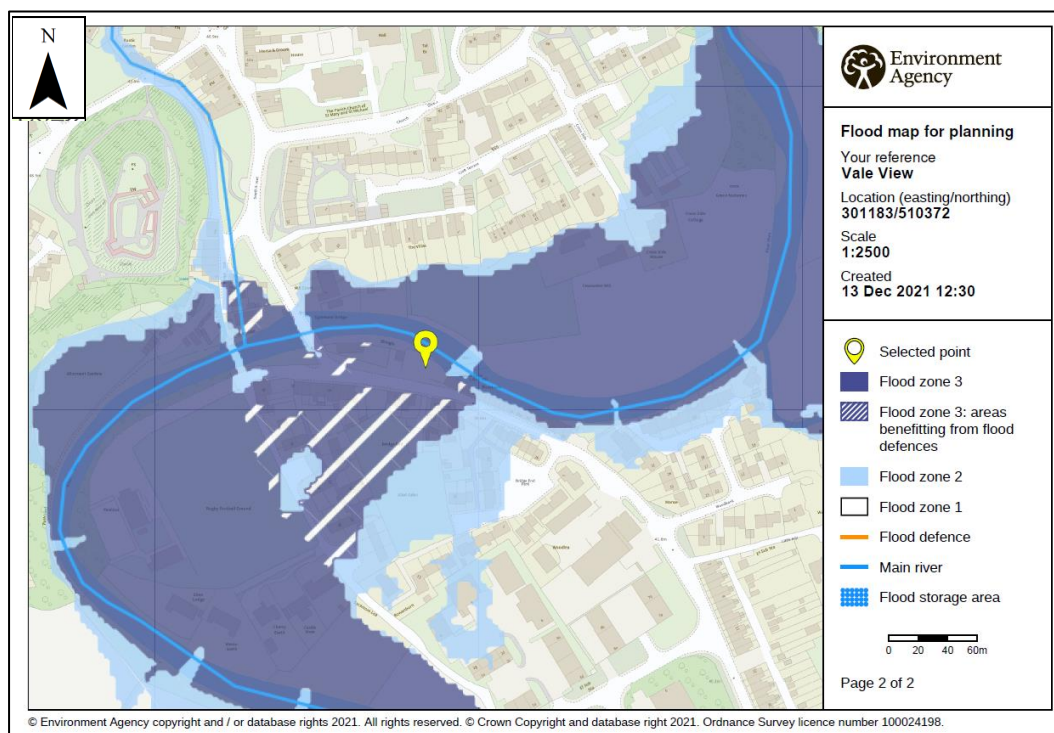
- a. The site of the former 3 Mill House, Vale View, Egremont is situated to the south side of Egremont next to the River Ehen. NGR NY011103. See Figure 1 - Location Plan.

Figure 1 Location plan



- b. On the site until 2012 was a four-storey end of terrace converted mill, formerly the home of the client. 3 Mill House was unexpectedly demolished, following failure of the riverside wall, caused by the failure of the unmaintained weir and former mill race. The new floodwall on the riverward side of the site will prevent this happening in future.
- c. The site is shown in Flood Zone 3 area benefitting from flood defences on the flood risk maps, see Figure 2 below.

Figure 2 Vale View Egremont Flood Zones map



## 2 - Development Proposals

- a. The development proposal is to construct a four-bedroom house to replace the 4-storey building that was previously on the site. See Figure 3 below.

Figure 3 Site Plan

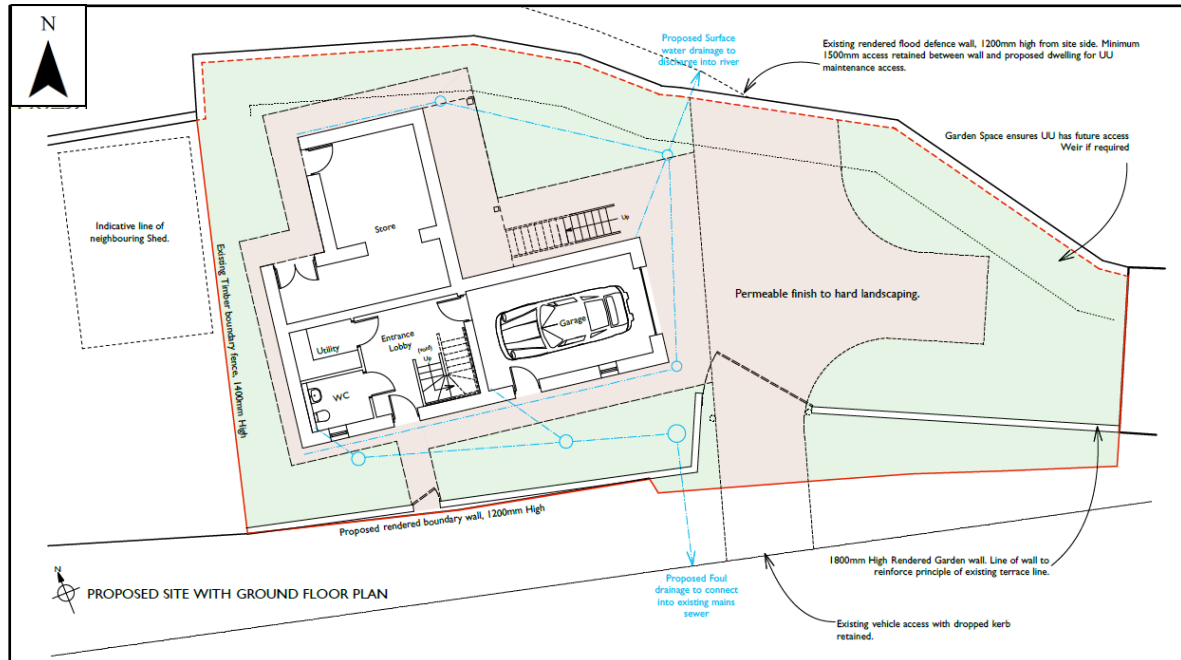


Figure 4 Elevations of proposed new build



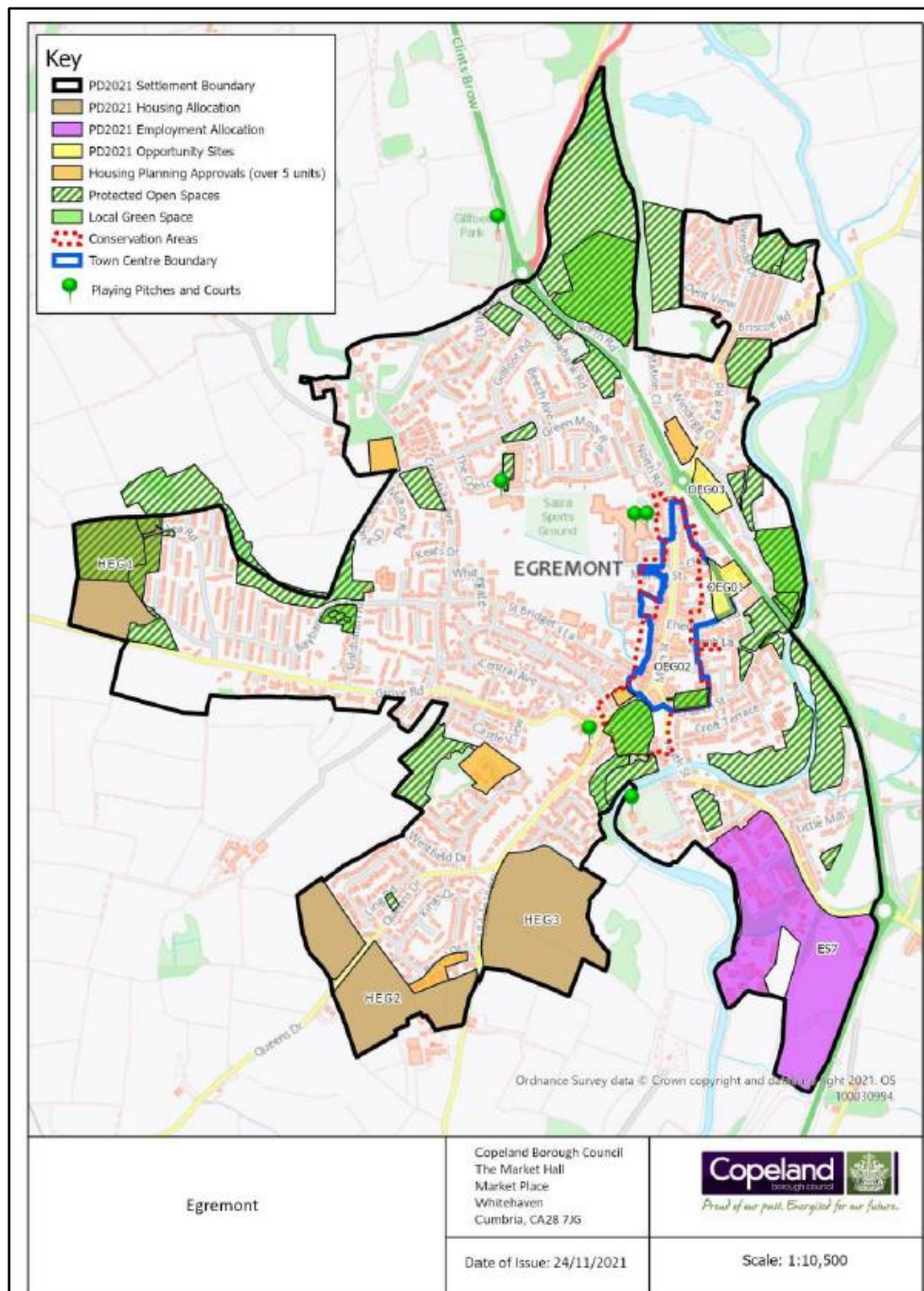


- b. The flood risk vulnerability classification of the proposed development is “More Vulnerable.”
- c. For FRA purposes, the expected lifetime of the development is 100 years.

### 3 - Sequential Test

- a) Other sites within the Egremont Key Service Centre have been considered for this development. See Figure 5 below. The Copeland draft local plan 2021-2038, the Copeland BC Five Year Housing Land Supply Statement 2020/21 and the Copeland Strategic Housing Land Availability Assessment (SHLAA) September 2020 were all used to identify comparator sites capable of providing an affordable residential dwelling within Egremont.

Figure 5 Copeland Local Plan draft local plan 2021-2038 – Egremont settlement



The development proposed is a four-bedroom property on the site of the client's previous residence. This is a net increase of 1 residential dwelling. The plot of land is approximately 0.041 ha (410m<sup>2</sup>) and is located within Flood Zone 3.

A suitable alternative site would need to meet the following two criteria: The site should be within the settlement of Egremont, and the site would need to have a similar size and yield.

Reviewing the sites provided in the 2021-2038 Draft local plan it was found that the three sites identified as developable and deliverable HEG1, HEG2 and HEG3, all were too large when compared with the site at Vale View with a yield of a single dwelling and therefore are not deemed suitable as an alternative site for the proposed development. In addition, there are three opportunity sites identified. See Appendix D. Sites OEG01 and OEG02 are both unsuitable for a single residential dwelling. Site OEG03 is too large and directly next to the busy A595.

Reviewing the sites provided in the Copeland Borough Council's SHLAA 2020, sixteen sites were identified (See Appendix D) but all are much bigger with a higher yield than the proposed site at Vale View.

Reviewing the sites from the Copeland 5-year Housing and Land Supply Statement 2020/21, two sites were identified at Main Street and Ellerbeck Manor both with a capacity for a single property but not now available; therefore not suitable as an alternative site for the proposed development.

Overall, this assessment of the Copeland Borough Council's Draft Local Plan 2017-2038, 2020 SHLAA and 5-Year Housing Land Supply Statement 2020/21 demonstrates that there is no available and suitable site which could be used for the proposed development.

- b) Other locations with a lower risk of flooding have been considered but none have been found suitable for this development.
- c) The development is located within flood zone 3, benefitting from Environment Agency defences and is a replacement for a previous dwelling on the site which had to be demolished following failure of the riverside wall.
- d) Other sources of flood risk have been considered for this development. The site is at flood risk from reservoir flooding and there is no flood risk from surface water flooding. See Appendix A.

## **4 - Climate change**

The potential flood risk at the site will increase with climate change. The Climate change allowances for a 'More Vulnerable' development in a Flood Zone 3 require the use of the central allowance. In the South West Lakes Management Catchment, for a development with an expected lifespan until the 2080's, the central allowance for climate change is a 30% increase in peak flow.

The modelled flows on the River Ehen at the site for the 1% design flood is 111 cumecs with a modelled water level of 39.85 m AOD. A 30% increase in this flow has been given by the Environment Agency as 126.73 cumecs with a level of 40.28 m AOD (See Appendix C)

## **5 - Site Specific Flood Risk**

- a. The main potential source of flooding to the property is from the River Ehen. See Figure 2 and Appendix A.
- b. The probability of the site flooding from Environment Agency data is between the 1.33% (75 year) and 1% (100 year). See Appendix C. The site ground level is 38.5 m AOD with the flood defence crest level of 39.7 m AOD. The 1.33% (75 year) flood level is 39.67 m AOD and the 1% (100 year) flood level is 39.85 m AOD.
- c. Surface water maps (see Appendix A) show that the site is not at risk of flooding from this source. Reservoir maps show the site is at risk of flooding to a similar extent and depth as a River Ehen flood.
- d. The design (1%) flood flow for the River Ehen is 111 cumecs with a flood level of 39.85 m AOD.
- e. The ground floor of the proposed dwelling will be expected to flood internally in the 1% design flood to a depth of 1.35 m but the living space situated on the first floor will be at a level of 41.22 m AOD, well above the flood level.
- f. Flood risk to the site will increase with climate change with a potential climate change flood level of 40.28 m AOD. The ground floor storage and garage space will have flood resistance and resilience measures installed as part of the new build to limit flood damage.
- g. The proposed residential property is replacing an existing building so there will be no additional floodwater displaced by the building during the design flood.
- h. There are opportunities offered by the development to reduce the impacts of flooding by raising the crest level of the flood wall. The landowner has already granted access to construct and maintain the current flood wall on their land to the benefit of their neighbourhood.

## **6 - Surface Water Management**

- a. There is no existing surface water drainage system on the site.
- b. The existing rates and volumes of surface water runoff for the site are unknown.
- c. The proposal is to direct the impermeable roof drainage direct to the river as the previous property did and install permeable paving for any hard standing.
- d. The proposed development will not increase the impermeable area runoff from the site.
- e. The owner/occupier of the development will maintain the surface water drainage.

## **7 - Occupants and Users of the Development**

- a. The number of users of the site will decrease. The previous property was four 2-bedroom flats with an occupancy of 8 to 12. The proposal would expect an occupancy of 4 residents.
- b. The proposal will not change the nature and times of use/occupation of the site as it was occupied by a residential property before its unplanned demolition due to unforeseen circumstances.
- c. The proposed property residential living space is on the first floor above the 1% flood level of 39.85 m AOD.

## **8 - Exception Test**

- a. As this development is a 'more vulnerable' development in flood zone 3 an Exception test is required. The loss of the original property on the site has already brought wider sustainable benefits to the community by giving space and land for the construction and maintenance of a flood wall that benefits neighbours residential properties and road infrastructure
- b. The property will remain safe over their lifetime by constructing a flood resistant and resilient property and will not increase flood risk elsewhere.
- c. This development will not reduce flood risk overall.

## **9 - Residual Risk**

- a. Access and egress will be subject to flood risk, if and when, the flood defence is overtopped. In the event of a flood, property owners will receive a flood warning and evacuate the property before the flood wall overtops. The distance to high ground is 50m.
- b. Over the lifetime of the development any increase in flood risk will be managed by the property owners.

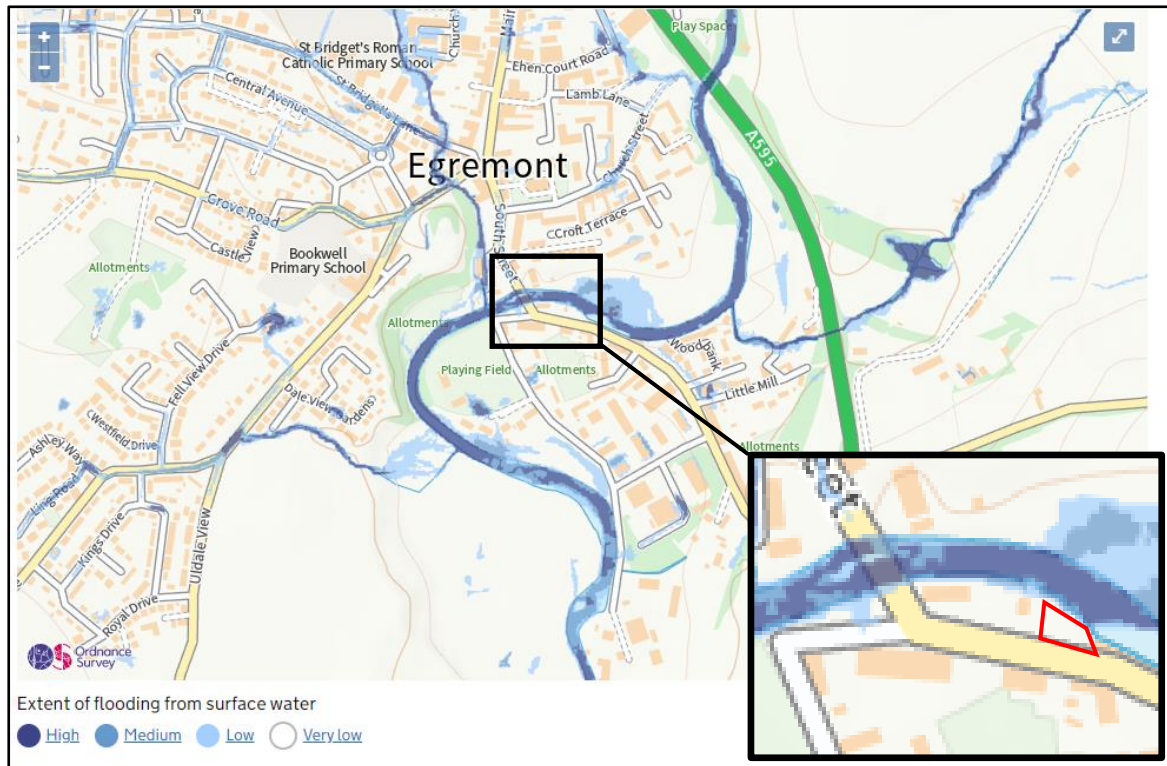
## **10 - Flood Risk Assessment credentials**

- a. This Flood Risk Assessment has been produced and written by:  
Rachel Gerrard B.Eng C.Eng MICE
- b. The Flood Risk Assessment was completed February 2022.

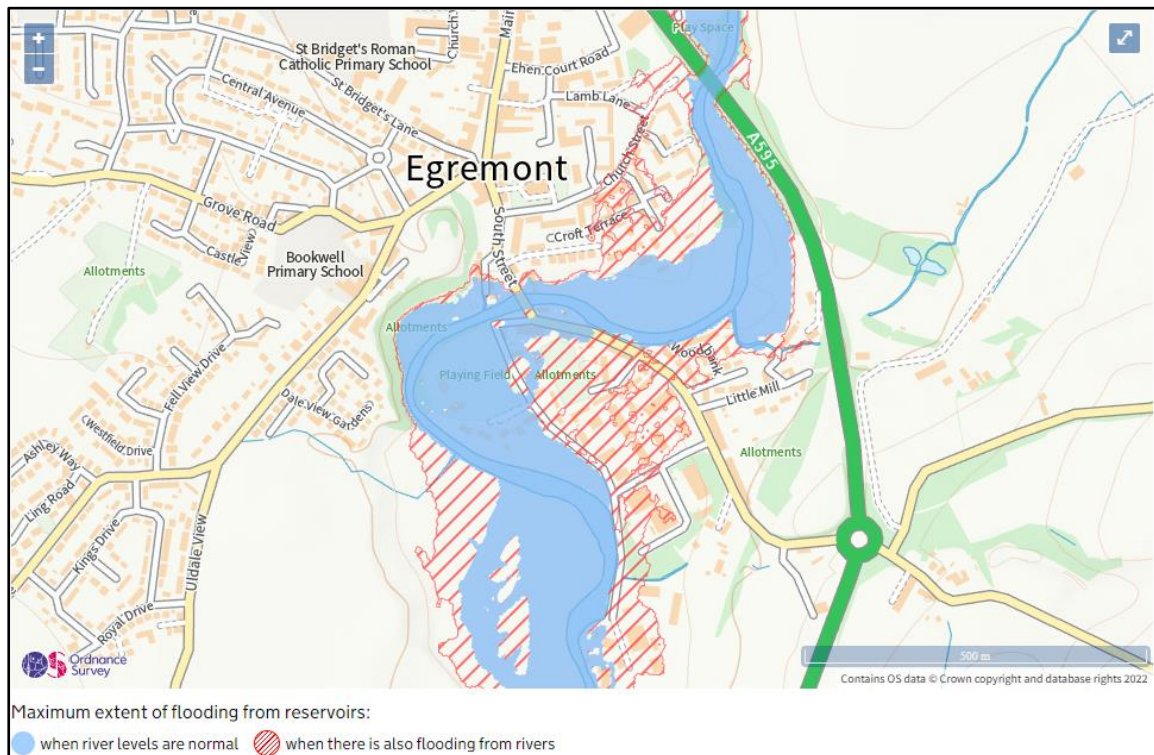


## APPENDIX A – Other sources of Flood Risk

### Surface Water Flood Risk

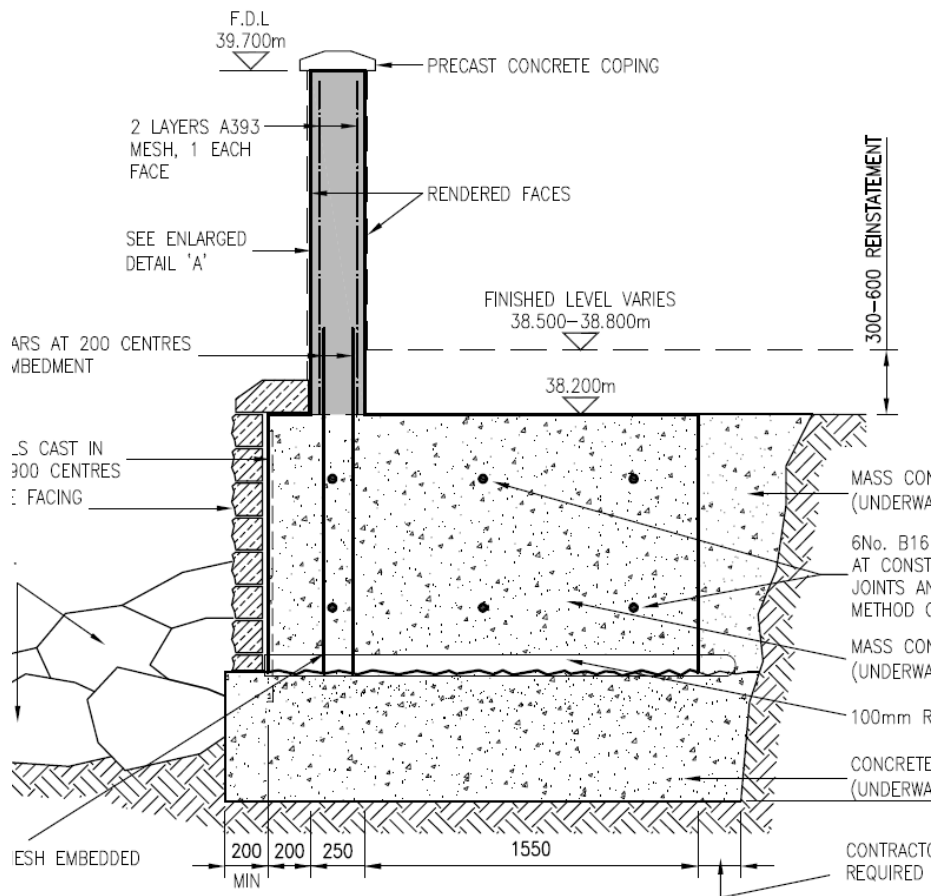


### Reservoir Flood Risk

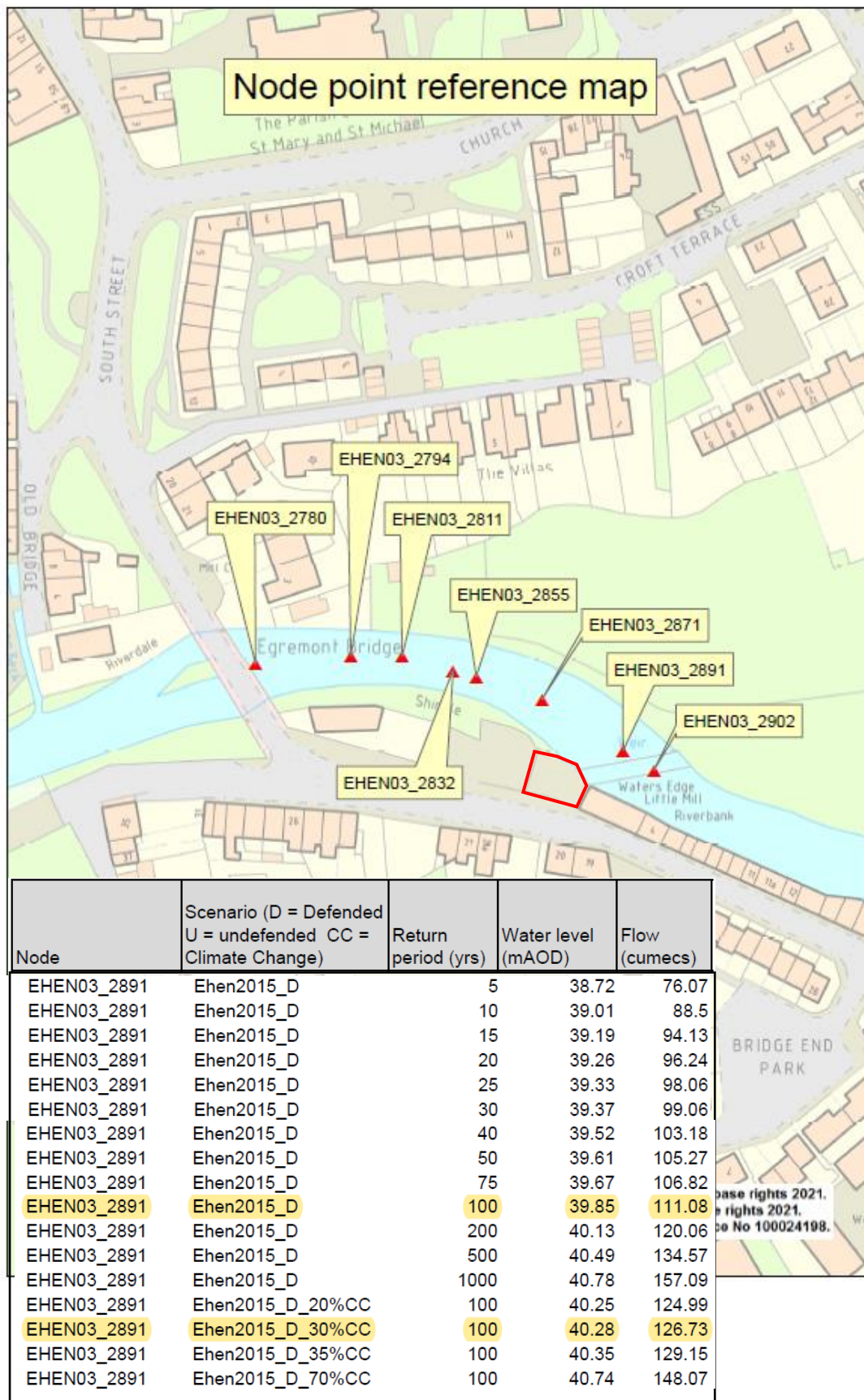


## APPENDIX B – Environment Agency Flood Wall

Extract from Egremont Flood Defence As Built drawing No 5113668-EGR-104 Rev Z.



## APPENDIX C – Fluvial Flood Levels from modelling data



## Appendix D – Extracts from Copeland Housing supply documents

Table 1 Copeland Local Plan (2021-2038) - Egremont housing development sites

Egremont				
Local Plan Ref.	Site Name	(ha)	Suitable/Preferred Uses	Use Classes
OEG01	Chapel Street	0.83	All town centre uses	C, E, F and Sui Generis (town centre appropriate) uses
OEG02	Former Red Lion PH, Main Street	0.04	All town centre uses	C, E, F and Sui Generis (town centre appropriate) uses
OEG03	East Road Garage	0.62	Commercial and employment uses are preferred for this site, but residential may also appropriate	B, C, E(g) and some Sui Generis uses

Table 2 Copeland Five-year Housing Land Supply 2020/21 - Egremont

Site Name	Planning Ref	Decision Date	Status at 31st March 2020	No. Approved at 31st March 2020
58 Main Street, Egremont	4/14/2041/0f1	21-Mar-14	Under construction	1
Plot At 2 Wyndham Place, Egremont	4/15/2422/0f1	26-Nov-15	Under construction	1
Ghyll Farm, Egremont	4/15/2403/0f1	19-Nov-15	Under construction	1
West Lakeland Veterinary Group, St Bridgets Lane, Egremont	4/16/2069/0f1	20-May-16	Under construction	2
14 Main Street, Egremont	4/17/2172/0f1	22-Jan-18	Not started	1
Land Behind No 10/10a Market Place, Egremont	4/17/2151/0f1	29-Sep-17	Under construction	1
Ellerbeck Manor, 5 Ellerbeck Barns, Egremont	4/18/2204/0f1	03-Jul-18	Under construction	1
Ghyll Farmhouse, Egremont	4/18/2237/0f1	24-Jul-18	Not started	1
Sandybank, Coulderton, Egremont	4/18/2168/0f1	05-Sep-18	Under construction	1
1 & 2 St Bridgets Lane, Egremont	4/19/2385/0F1	17-Dec-19	Under construction	2



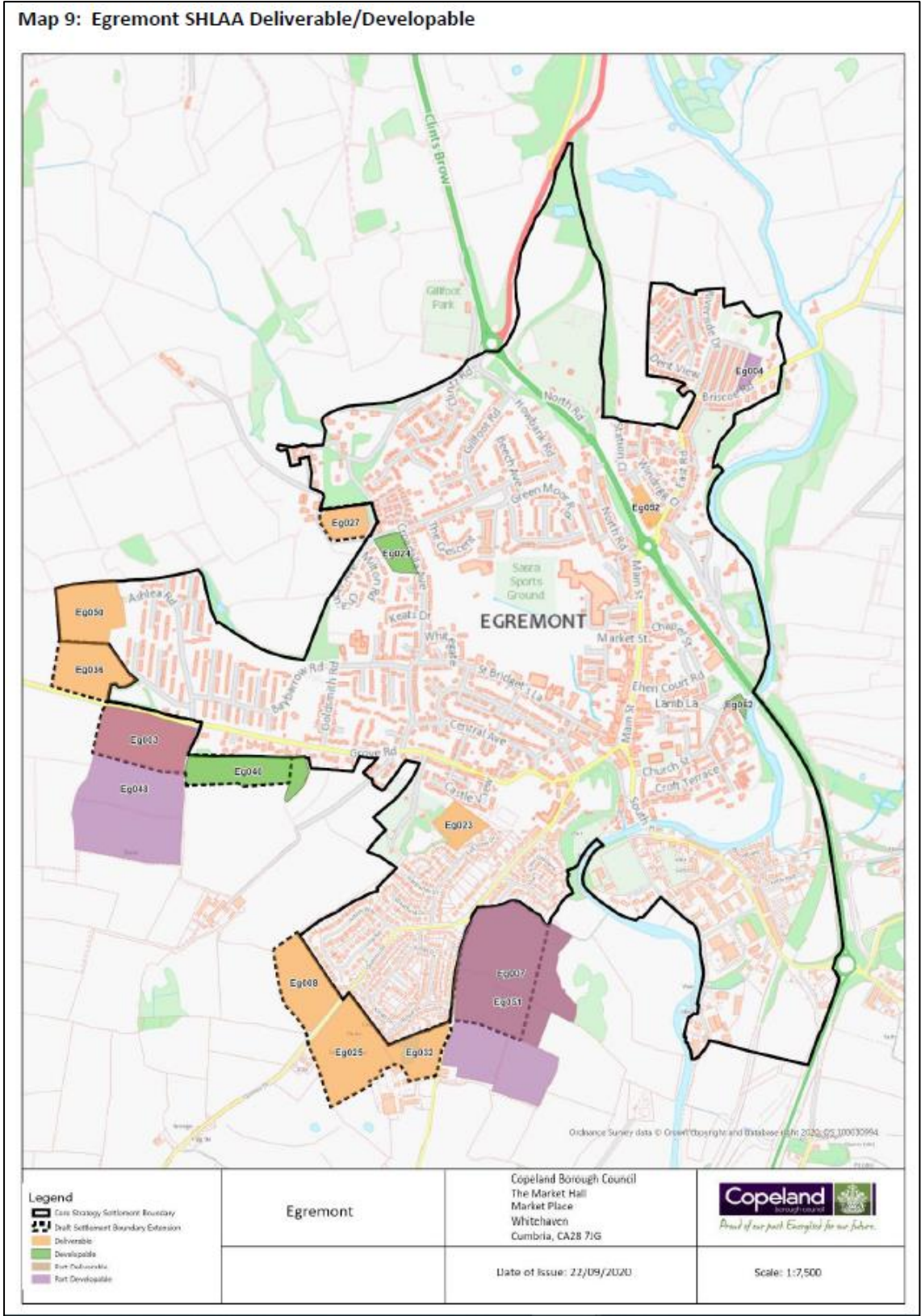


Table 7: Egremont Deliverable, Developable:

SHLAA Reference	Site Name	Site Area HA	Yield 25dph	Summary Box	Deliverable 1 to 5yrs	Developable Sites 6 to 10yrs	Broad Locations 11 to 15yrs
Eg003	Land at Melrose	2.93	73	Deliverable	yes		
Eg004	Former allotments, Brisco Mount	0.30		Part Developable		yes	
Eg007	Adjacent Daleview Gardens, Uldale View	7.74		Part Deliverable	yes		
Eg008	Gulley Flatts West	2.28	57	Deliverable	yes		
Eg023	Sandholes	0.89	29*	Deliverable	yes		
Eg024	Orgill Infants School, Southey Avenue	0.64	16	Developable		yes	
Eg025	Gulley Flatts East, Queens Drive	3.26	82	Deliverable	yes		
Eg027	Land at Howbank Farm A	0.82	9*	Deliverable	yes		
Eg032	North of Pickett How	1.32	33	Deliverable	yes		
Eg036	Land adjacent to the Willows	2.07	52	Deliverable	yes		
Eg040	Land south Baybarrow Road	2.23	56	Developable		yes	
Eg044/A	Land South of Baybarrow and adjacent to Sandholes	17.85		Part Developable		yes	
Eg048	Land off Baybarrow Road	9.08		Part deliverable	yes		
Eg050	Playing fields at Ashlea Road	2.26	57	Deliverable	yes		
Eg051	Land at Uldale View	11.37		Part Deliverable	yes		
Eg052	Land at East Road	0.46	9*	Deliverable	yes		