

**PROPOSED CONSTRUCTION OF
STORAGE, OFFICE AND SHOP
BUILDING AND ALTERATIONS AT
WALTER BAILEY, ST ANDREWS ROAD,
PAR, PL24 2LX**

FLOOD RISK ASSESSMENT

J-3061 -Rev.01



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AND SHOP BUILDING AND ALTERATIONS AT
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2LX**

FLOOD RISK ASSESSMENT

Report No.	Issue Detail	Originator	Date	Checked by	Date
J-3061	01	LT	18/08/23	JM	19/09/23

For: Mr David Bailey
Walter Bailey
St Andrews Road
Par
PL24 2LX

Job No: J-3061
Date: September 2023
Edition: 01

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APPENDICES

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1.0 INTRODUCTION

Mr Bailey is proposing to construct a new storage, office and shop building and alterations at Walter Bailey, St Andrews Road, Par, Cornwall.

The site is located as shown in **Figures 1 & 2** below.

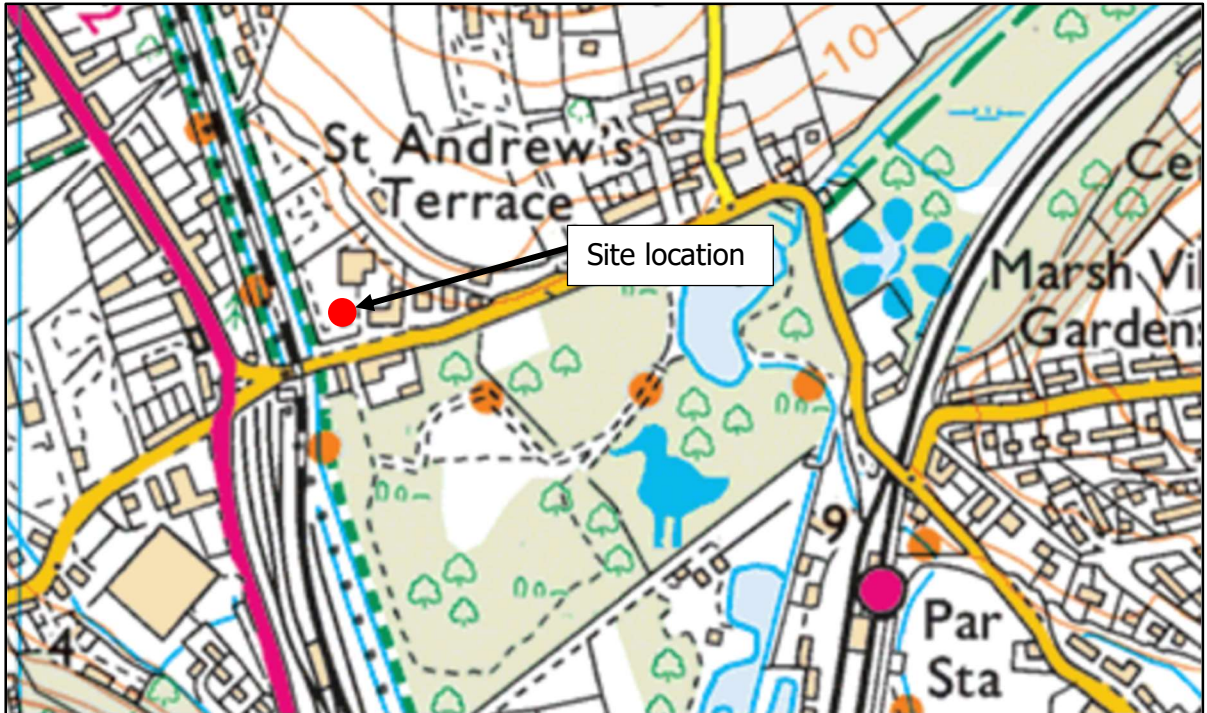


Figure 1- Site location & Geographical Area

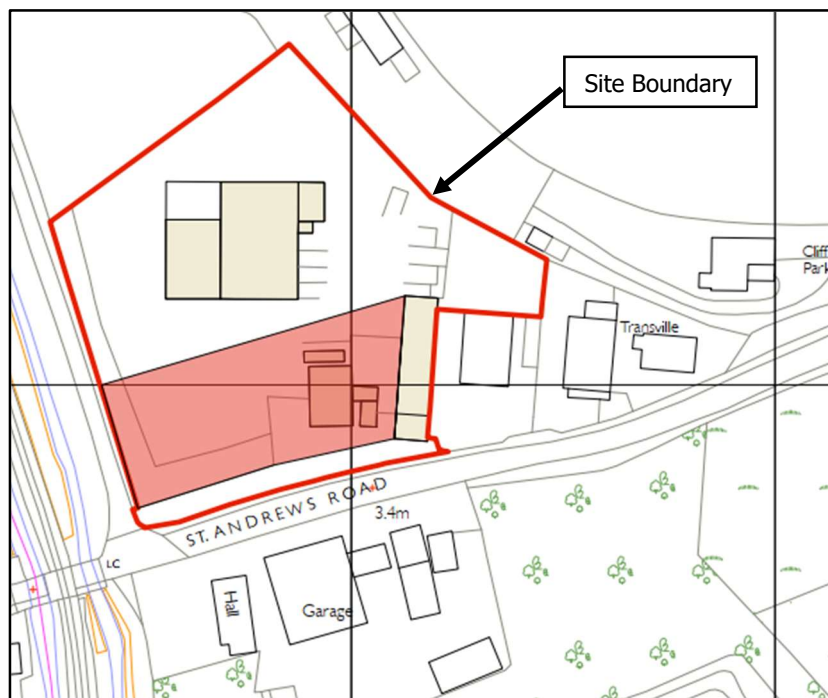


Figure 2 – Indicative Site Boundary

Site Description

The site is situated in the village of Par in Cornwall. The approximate Ordnance Survey Grid Reference for the site is SX 07289 54401

The site has two watercourses that are within close proximity; these are the Treffry Canal (which is located approximately 12 metres to the west of the site), and Par River which is approximately 26 metres to the west of the site), These features will be discussed in more detail later in this report.

Access to the site is directly off St Andrews Road. The ground level at the entrance to the drive area leading up to the site is approximately 3.32m AOD (obtained from the Topographic Survey **Appendix A**).

In the wider context, the surrounding areas include a railway line which is located to the west of the site. St Andrew Road Pond and Nature Reserve can be found approximately 200 metres away to the east. The local high point is a prominent hill located northward of the site which reaches elevations of about 100m AOD approximately 2,100 metres away. The topography of the site is relatively flat with a gentle slope down to the entrance of the driveway.

Existing Usage

At present, the site comprises of storage and factory buildings with associated parking areas. General elevations found on the site area range from 4.78m AOD in the southwestern corner of the site to 3.32m AOD in the southeastern corner of the site (obtained from the Topographic Survey). The existing layout is shown in the drawings attached in **Appendix A**.

Proposed Usage

The proposal is to demolish some existing buildings on-site to construct a storage building with a new shop and office located on the first floor. Proposed development plans are included within **Appendix A**.

Flood Risk Context

The site lies within Flood Zone 3 as defined within the Environment Agency (EA) indicative flood mapping for the area; see **Figure 3** below.

Engineering and Development Solutions (EDS) have been commissioned by the Applicants to undertake an FRA to assess the potential flood risks to the proposed development. This report comprises the FRA for the proposed new development, in line with the National Planning Policy Framework (NPPF), the Planning Practice Guidance (PPG) and local drainage guidance.

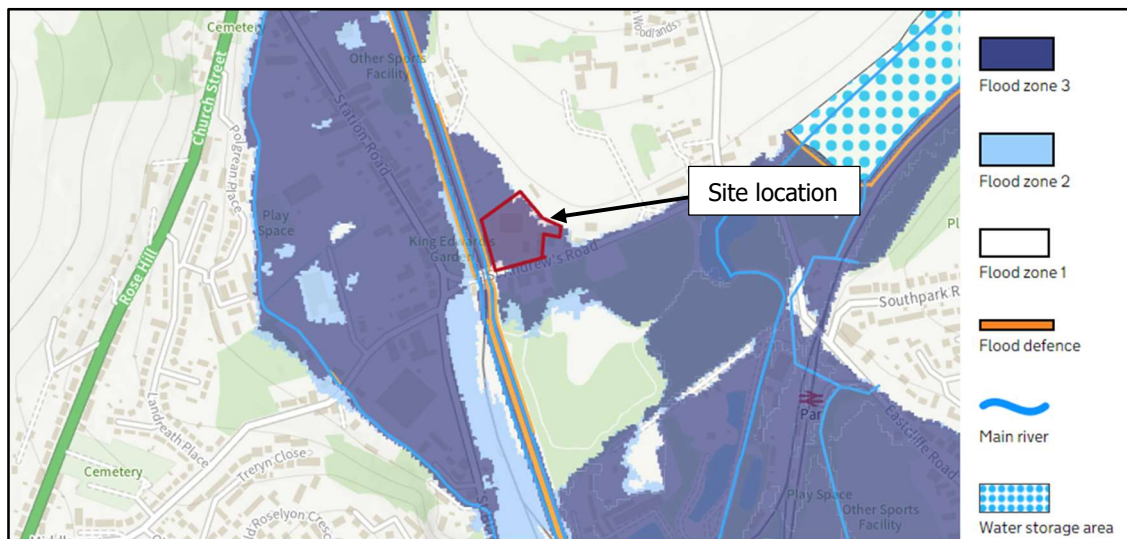


Figure 3– Environment Agency Flood Map for Planning (Rivers & Sea) Extract

2.0 ASSESSMENT OF FLOOD RISKS

Groundwater

Groundwater flooding is linked to the presence of aquifers and the ability of the underlying geological strata to bear water. Flooding occurs when water levels in the ground rise above surface elevations.

“Groundwater flooding is linked to the ability of the ground to hold water. Due to its geology Cornwall has only minor aquifers (2) and generally does not experience much groundwater type flooding. The exception to this is found in areas that have extensive mine drainage systems, where blockages within drainage tunnels can lead to unexpected breakout of groundwater at the surface.” (Cornwall Council Local Development Framework Strategic Flood Risk Assessment Level 1, November 2009)

The SFRA does not note any occurrences of groundwater flooding in the location of the site.

Furthermore, as the site is located near to the Par River and Treffry Canal, the groundwater level beneath the site is likely to be controlled by these watercourses which would act as sumps to drain water in the ground down from the ground surface. As such, the risk of flooding from groundwater will not be considered further in this report.

Overland Flow/Surface Water Flooding

The site is situated in an urban area and elevations are relatively level throughout the site.

Overland flows and surface water originating from the north of the site will be infiltrated by the agricultural fields found to the north of the site, before becoming intercepted by the drainage infrastructure found along St Andrews Road. Overland flows and surface water originating from the east of the site will become intercepted by the drainage infrastructure found along St Andrews Road, which would be carried away from the site in a westerly direction. Flows originating from the west would travel towards the stream and river where they would then travel in a southerly direction away from the site.

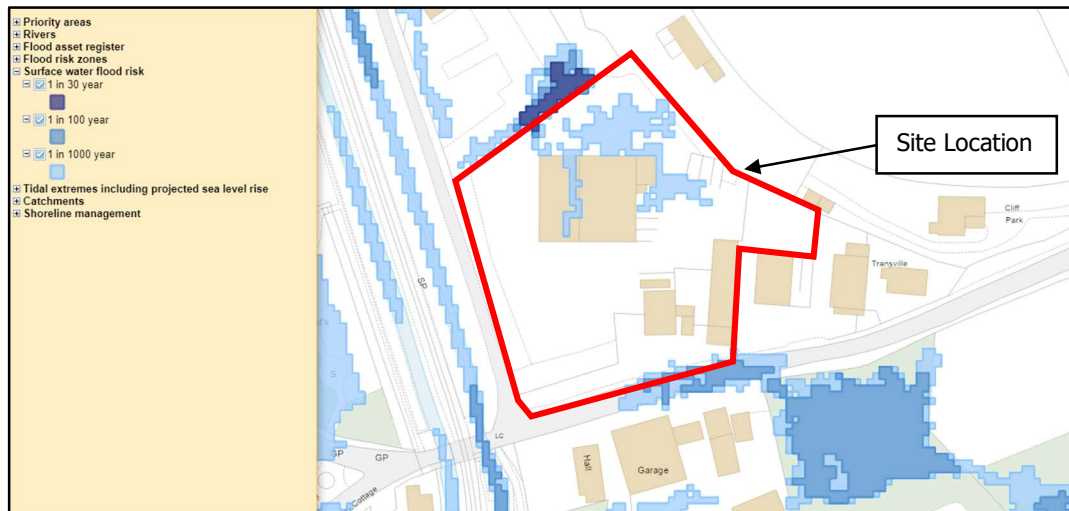


Figure 4 – SFRA Flood Risk from Surface Water Map Extract

The SFRA map extract, **Figure 4** above, shows the risk of flooding from surface water for the area. It shows that the majority of the site is at a very low risk from surface water flooding, with a small portion of the site being at low risk.

Whilst fluvial and tidal flooding are anticipated to be far more onerous than the risks associated with overland flow, this mechanism of flooding is discounted from further consideration.

Fluvial Flood Risk

The Par River flows in an open channel approximately 26 metres to the west of the site in a generally north to south direction. The river discharges onto Par Sands Beach approximately 0.8 miles to the south of the site before flowing across the beach and out into St Austell Bay.

As such there is potential for fluvial flooding of the site to occur as a result of out of channel flows from this watercourse.

The EA indicative flood mapping (**Figure 3**, above) shows the site to be in Flood Zone 3, high risk.

Flood information has been acquired from the EA as part of a Product 4 Information Request to further inform this study; this information is included in **Appendix B** and discussed further below.

The information from the EA provided modelled flood data for the Par River during both defended and undefended scenarios from the Par ISIS-TUFLOW Model 2011.

Defended Case

The area benefits from flood defences and **Figure 5** below, shows the defended modelled fluvial flood extents. This indicates that the proposed development area may experience flooding during the 1 in 20-year fluvial flood event. And could experience flooding during greater magnitude events, essentially placing the proposed site in flood zone 3.

It should be noted that flood levels will be higher during a defended scenario due to the flood defences containing flood water within the river channel.

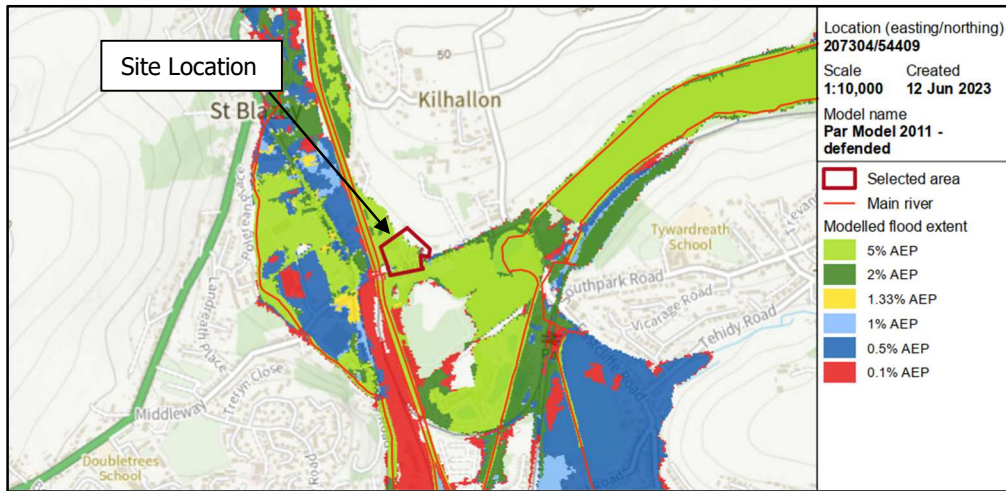


Figure 5 Defended modelled fluvial flood extents

Undefended Case

This can also be seen during the undefended scenario, where flooding can also be observed during the 5% AEP, (1 in 20-year fluvial flood event.)

Figure 6 below, shows the modelled flood extent under an undefended scenario.

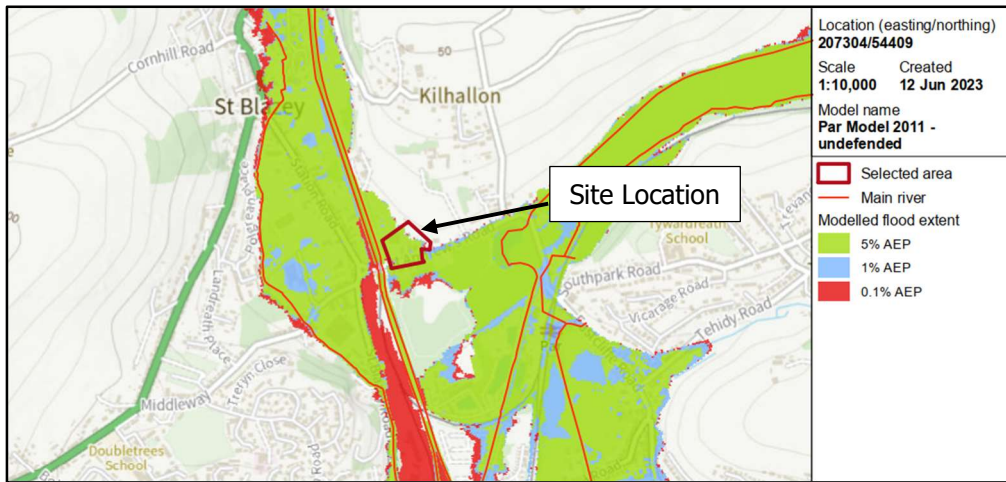


Figure 6 Undefended modelled fluvial flood extents

Modelled flood levels were provided by the EA for a series of nodes for the undefended scenario. The following flood levels have been provided for Node ID 138566 under the following flood events.

5% AEP – 4.31m AOD

1% AEP – 4.33m AOD

0.1% AEP – 4.37m AOD

Comparing these levels to the lowest site level which can be found in the southeastern corner of the site 3.32m AOD, the flood depths that could be experienced at the site are as follows:

5% AEP – 0.99m

1% AEP – 1.01m

0.1% AEP – 1.05m

The Finished Floor level (FFL) of the ground floor of the proposed building is 3.60m AOD, therefore the internal areas of the building may experience flooding to the following depths:

5% AEP – 0.71m

1% AEP – 0.73m

0.1% AEP – 0.77m

Notwithstanding the above it should be noted that the undefended model scenario is based on a situation where the Treesmill Dam and Highway Dam FASs are removed, the tide gate is permanently open, flood embankments in the urban area of Par and St Blazey have been removed, and the Pontsmill Sluice Gates have been removed.

The flood data provided by the EA rightly comes with the caveat 'The reality of such a scenario should be given adequate consideration'.

The flood defence embankment located closest to the site has an asset ID of 58474 which should protect the proposed site up to an upstream actual crest level of 5.97m AOD. **Figure 7 below** shows the location of this flood defence embankment.

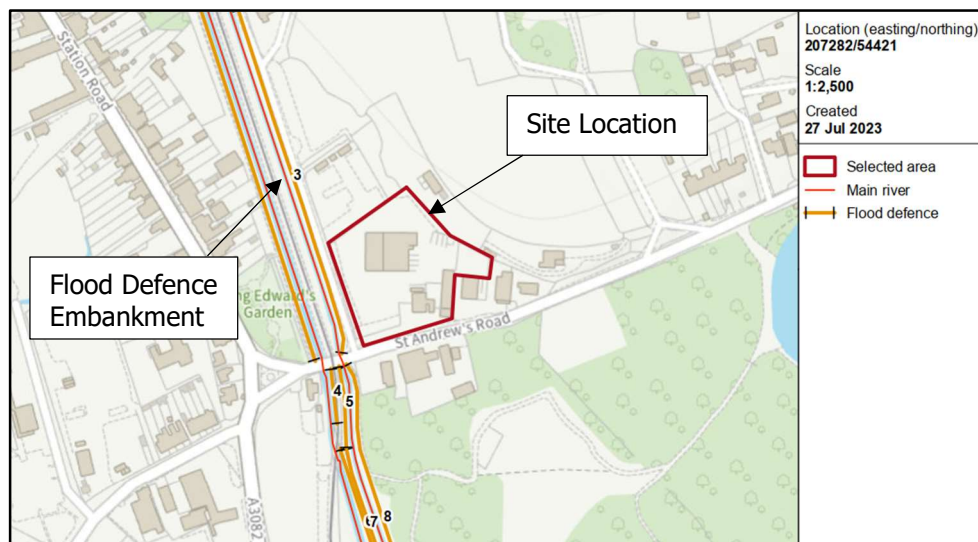


Figure 7 Location of flood defence embankment

Tidal Flooding

The site is located 0.9 miles away from the coast and lies within flood zone 3 (**Figure 3**). The Environment Agency have provided tidal level data as part of the Product 4 Information request for the site, which is as follows:

- 0.5% AEP (1 in 200 yr.) tidal level – 3.46m AOD
- 0.1% AEP (1 in 1,000 yr.) tidal level – 3.63m AOD

EA tidal flood levels do not account for sea level rise due to climate change; an allowance for climate change over the lifetime of the development (60 years for a commercial development) should be undertaken. Information on climate change allowances has been outlined by the Environment Agency in the guidance entitled 'Flood risk assessments: climate change allowances. When accounting for climate change over the lifetime of the commercial development (60 years) the net sea level rise is calculated to be approximately 0.74m using the 'Upper End' allowance for the Southwest River basin district as a worst-case scenario. Therefore, the undefended 1 in 200-year tidal level with a 60-year allowance for climate change is **4.20m AOD**.

The lowest elevation found on the site is 3.32m AOD, which can be found in the southeastern corner of the site, therefore may experience flooding to a maximum depth of 0.14m AOD, during the 1 in 200-year tidal flood event and a maximum depth of 0.31m, during the 1 in 1,000-year tidal flood event. A maximum depth of 0.88 may be experienced when considering the effects of climate change.

The (FFL) of the building is 3.60m AOD, therefore the internal area of the building will not experience flooding during the 1 in 200-year tidal flood event but may experience flooding during the 1 in 1,000-year tidal flood event to a maximum depth of 0.03m. When considering the effects of climate change a maximum depth of 0.6m may be experienced.

Due to the location of the site within Par some 0.9 miles away from the coast is anticipated that the impact of wave action would be minimal as any waves would dissipate before reaching the site.

Flood History

Below **Figure 9** shows the historic flood map provided by the EA for the area. There was flooding experienced in the area of the site in February 1974. It should be noted that this is an indication of the geographical extent of an observed flood event, this shows flooding to the land and not flooding to individual properties. This does not indicate whether an individual property has flooding internally and flood levels that may have been experienced.

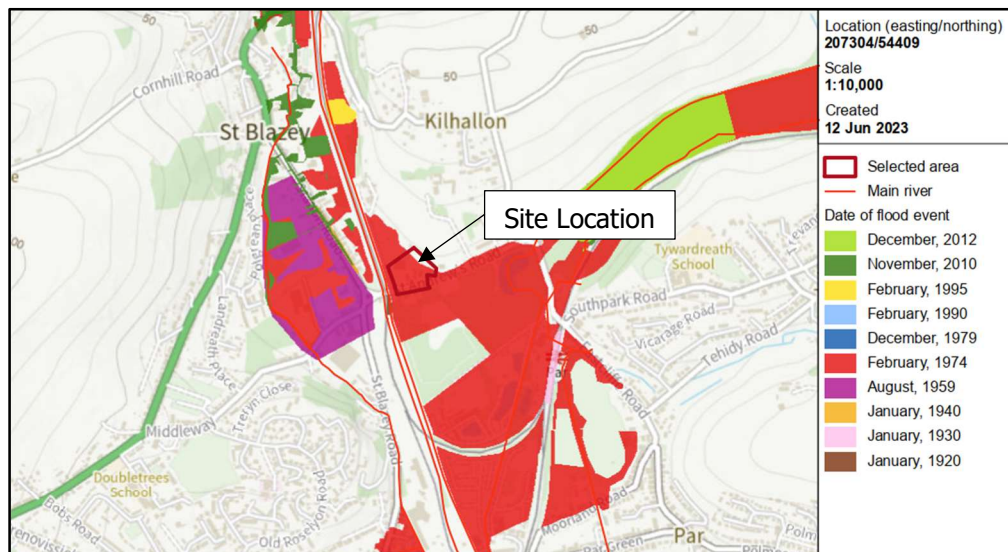


Figure 9 Historic Flood Map

Flooding as a Result of Development

Developments have the potential to increase flood risk to properties down slope of the proposed development through the introduction of impermeable areas on previously permeable areas.

In this case, the proposal is to demolish existing buildings and replace them with the new building, additionally the impermeable area for the new building will be decreased slightly, therefore there will be no increase of impermeable surface area at the site. As such, it is anticipated that the new building will pose no increase in surface water runoff and therefore would not increase flood risk to properties down slope of the proposed development.

Notwithstanding the above, the development should be drained via an appropriate and sustainable surface water drainage system.

Flood Plain

The existing buildings which are to be demolished cover an area of 293.25m², the proposal is to construct a new building to accommodate storage, office, and shop. This building will cover an area of 288m²; therefore, the proposal will not infill the floodplain. The boundaries for the site will be retained which are constructed using permeable timber or metal fencing, this will ensure that water can flow freely off the site and will not become contained.

3.0 ACCESS AND EGRESS

Vehicular and pedestrian access to the front of the site is from St Andrews Road which can be found to the south of the site. The access route is shown in **Figure 10**. The lowest level along the access route at the site approaching from the south is 3.32m AOD.

The EA modelled defended fluvial flood extent map indicates that the access road (and St Andrews Road) will flood during the 1:20yr event.

In the undefended fluvial flood scenario, flood depths at the site can realistically be determined by comparison of nodal flood levels against site levels and are as follows:

5% AEP – 0.99m

1% AEP – 1.01m

0.1% AEP – 1.05m

When considering tidal flooding the access/egress route may experience flooding to a maximum depth of 0.14m during the 1 in 200-year tidal flood event and to a maximum depth of 0.31m during the 1 in 1,000-year tidal flood event. When considering the effects of climate change a maximum depth of 0.88m may be experienced.

Considering the various flood scenarios, it can be seen that the fluvial and tidal flooding both are a risk to the site. The access/egress route could experience flooding up to a maximum depth of 1.05m over the lifetime of the development. This flood depth has been taken when assessing hazards associated with accessing and egressing the site.

The access/egress route is shown below in **Figure 10**.

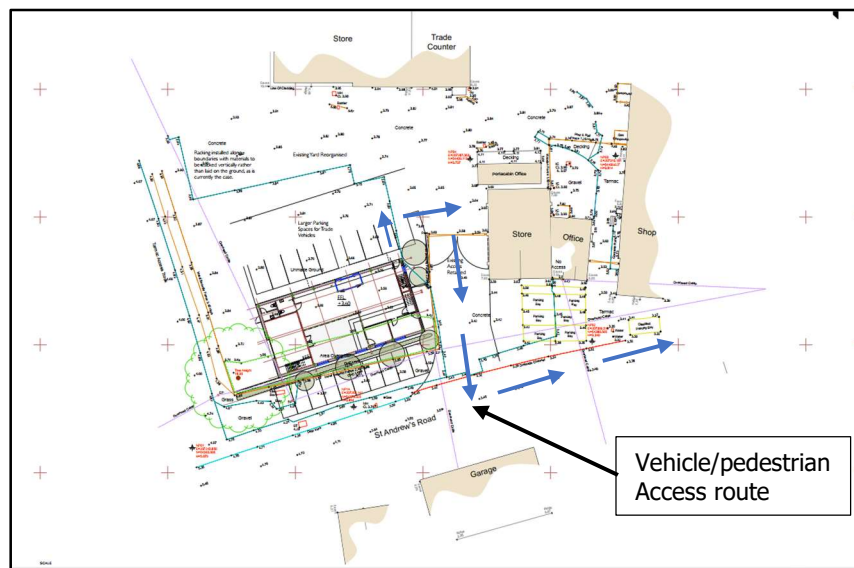


Figure 10 Proposed Access/Egress Route

DEFRA document FD2320/TR2 “Flood Risk Assessment Guidance for New Development” provides guidance on risks to persons moving through flood water of varying depths and velocities. Figure 13.1 of FD2321/TR2 is provided below as **Figure 11** for reference purposes.

The risk of a maximum of 1.05m of flooding would be classified as “danger for most’ as per **Figure 11**. Therefore, it is deemed that occupants should not attempt to leave the site via St Andrews Road during an extreme flood event.

Moving through flood water should be avoided and it is recommended workers remain within the building on the first floor or evacuate the building prior to a flood event.

If workers do need to leave site, then the premises should be evacuated well in advance of any flood taking place.

Flow velocities are unknown, but this would equate to a worst-case assessment of ‘Danger for Some’ at high end velocities.

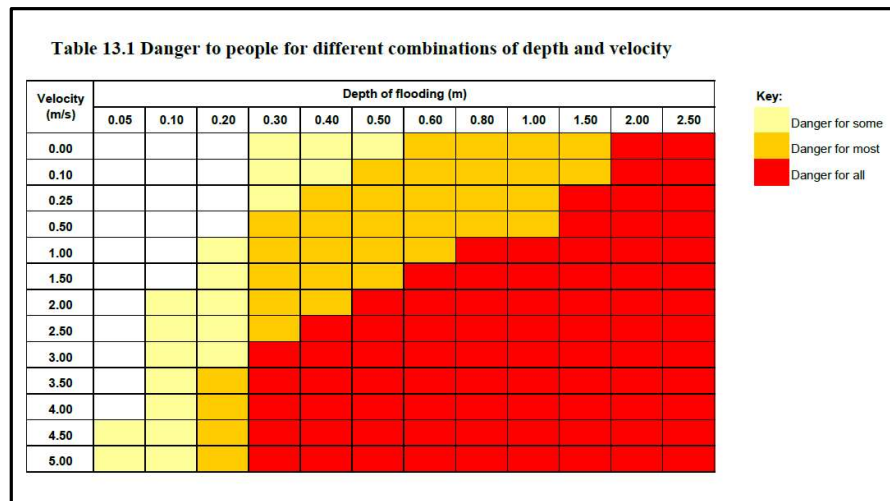


Figure 11 – Extract from FD2320/TR2

4.0 MITIGATION MEASURES

The site is classified as being in Flood Zone 3.

A range of mitigation measures are proposed in order to ensure the safety of the development over its anticipated lifetime. Adopting these measures has the potential to reduce the level of flood risk to the site.

- The building should be elevated as high as reasonably practicable. Normally this would be 600mm higher than the most onerous undefended flood level including an allowance for climate change, however, this is unlikely to be feasible in this case: as such:
- Any new construction works undertaken below **4.97m AOD** (1 in 1,000-year undefended fluvial flood event + 600m freeboard) should be carried out using flood resistant materials where possible. Electrical circuitry and apparatus should be installed above 4.97m AOD. Alternatively, ground based electrical installations should be designed to withstand flooding. Tiled flooring should be used instead of carpeting. Lime based mortar should be used instead of concrete based products. The proposed construction of the ground floor could be in solid block; a concrete floor slab could be used which will be fully washable. The ground floor internal walls will also have a waterproof sponge render finish. Electrical switches and power points will be elevated. Further advice on flood resilient construction is available from Improving Flood Resilience of New Buildings which is available at:

http://www.planningportal.gov.uk/uploads/br/flood_performance.pdf

- A Flood Plan should be prepared for the premises if there is not one in place already. This should describe plans for monitoring flooding and actions to be taken in the event of predicted flooding. Due consideration should be given to the recommended evacuation route.
- It is recommended for the owners of the premises to sign up to the Environment Agency flood warning system if not already. The Environment Agency operate a countrywide flood warning system that covers both river and tidal flooding. Below **Figure 12** shows the flood alert map for the area.



**Flooding is possible.
Be prepared.**

- Monitor flood warnings and advice issued by the Environment Agency, Council, the emergency [services](#) and News channels.
- Prepare a flood kit of essential [items](#)



**Flooding is expected.
Immediate action required.**

- Continue to monitor flood warnings and [advice](#)
- Move family, pets and valuables to a [safe place](#)
- Turn off gas, electricity, and water supplies if safe to do [so](#)
- Put flood protection equipment in [place](#)



**Severe flooding.
Danger to life.**

- Evacuate building immediately to higher [ground](#)
- Return to building only when advised to do so by Emergency Services



Figure 12 – DEFRA Flood Alert Map

5.0 POLICY

The development proposal has been shown to lie within Flood Zone 3.

The overall flood risk vulnerability classification for the premises would fall into the “Less vulnerable” category as it would be used as a Commercial premises; see Planning Practice Guidance (PPG) **Figure 13** below.

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	x	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	x	x	x	✓*

Key:
 ✓ Development is appropriate
 x Development should not be permitted.

Figure 13 – PPG Table 3

Referring to Table 3 of PPG shown in **Figure 13** above, and considering the flood zone designation of Zone 3, a ‘Less Vulnerable’ development such as this within Flood Zone 3 is deemed appropriate from a flood risk perspective.

It should be noted that some of the existing buildings are to be demolished and replaced with the new building which overall will have a smaller impermeable area, thus reducing the amount of surface water runoff from the site. Additionally, the buildings to be demolished have a surface area of 293.72m² and the new building to be constructed has a surface area of 288m². Therefore, this will have a decrease in buildings infilling the flood plain.

The boundaries of the site will not be changing, which are currently permeable (timber and metal fence). This will allow water to pass through the boundaries and not become contained within the site.

It should also be noted that the vulnerability classification of the site is not changing, the built development will be used for ‘storage and distribution’, which is classed as a ‘Less Vulnerable’ development.

6.0 SUMMARY AND CONCLUSIONS

This report has shown that the site of the proposed development at Walter Bailey, St Andrews Road is situated within Flood Zone 3.

The access and egress route for the site lies within Flood Zone 3.

The maximum flood level likely to occur at the site over the lifetime of the development is determined to be **4.37m AOD**, corresponding to the 1 in 1,000-year fluvial flood event with allowance for climate change.

The proposed ground floor level of the new building should be set as high as is practicable to ensure protection from flooding. As such, it is predicted that the proposed development may experience flooding in the 1 in 1,000-year fluvial flood event plus to a depth of 0.77m at ground level.

The area on site with the lowest elevation recorded of 3.32m AOD, which can be found in the southeastern corner of the site may experience fluvial flooding to a maximum depth of 0.99m during the 5% AEP, 1.01m during the 1% AEP and 1.05m during the 0.1% AEP. It should be noted that this area is located away from the proposed area of built development.

The internal ground floor of the proposed building may experience fluvial flooding to a maximum depth of 0.71m during the 5% AEP, 0.73m during the 1% AEP and 0.77m during the 0.1% AEP.

The area of the site with the lowest elevation recorded at 3.32m AOD, may experience tidal flooding to maximum depth of 0.14m during the 1 in 200-year event, 0.31m during the 1 in 1,000-year event and 0.88m when considering the effects of climate change.

The internal ground floor level of the proposed building will not experience tidal flooding during the 1 in 200-year event but may experience flooding to a maximum depth of 0.03m during the 1 in 1,000-year event. When considering the effects of climate change a maximum depth of 0.6m may be experienced.

The Hazard Classification along the egress/access route on St Andrews Road is assessed as being 'danger for most' according to FD2320/TR2 for the long-term scenarios. Workers should avoid moving through flood water and ideally seek refuge on the first floor of the building in the office area or evacuate the building well in advance of any predicted flooding.

It should be noted that the existing buildings which are to be demolished have a surface area of 293.25m² and the new building to be constructed has a surface area of 288m². The proposal shall not infill the flood plain, thus minimising flood risks to properties which can be found downslope of the proposed development.

It should be further noted that the development proposal is not changing, and the vulnerability classification of the development will be classified as 'Less Vulnerable' as the proposed building is to be used as commercial premises and would be deemed appropriate in flood risk terms when compared to the advice given in NPPF.

Various flood mitigation measures have been presented within **Section 4.0** of this report in relation to the development proposals, including the need to prepare a detailed Flood Plan.

APPENDIX A ENVIRONMENT AGENCY INFORMATION

Flood risk assessment data

Location of site: 207282 / 54421 (shown as easting and northing coordinates)

Document created on: 27 July 2023

This information was previously known as a product 4.

Customer reference number: VXKXWK77NFFD

Map showing the location that flood risk assessment data has been requested for.



Flood map for planning (rivers and the sea)

Your selected location is in flood zone 3.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change

This data is updated on a quarterly basis as better data becomes available.









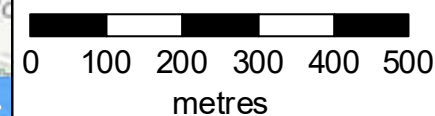
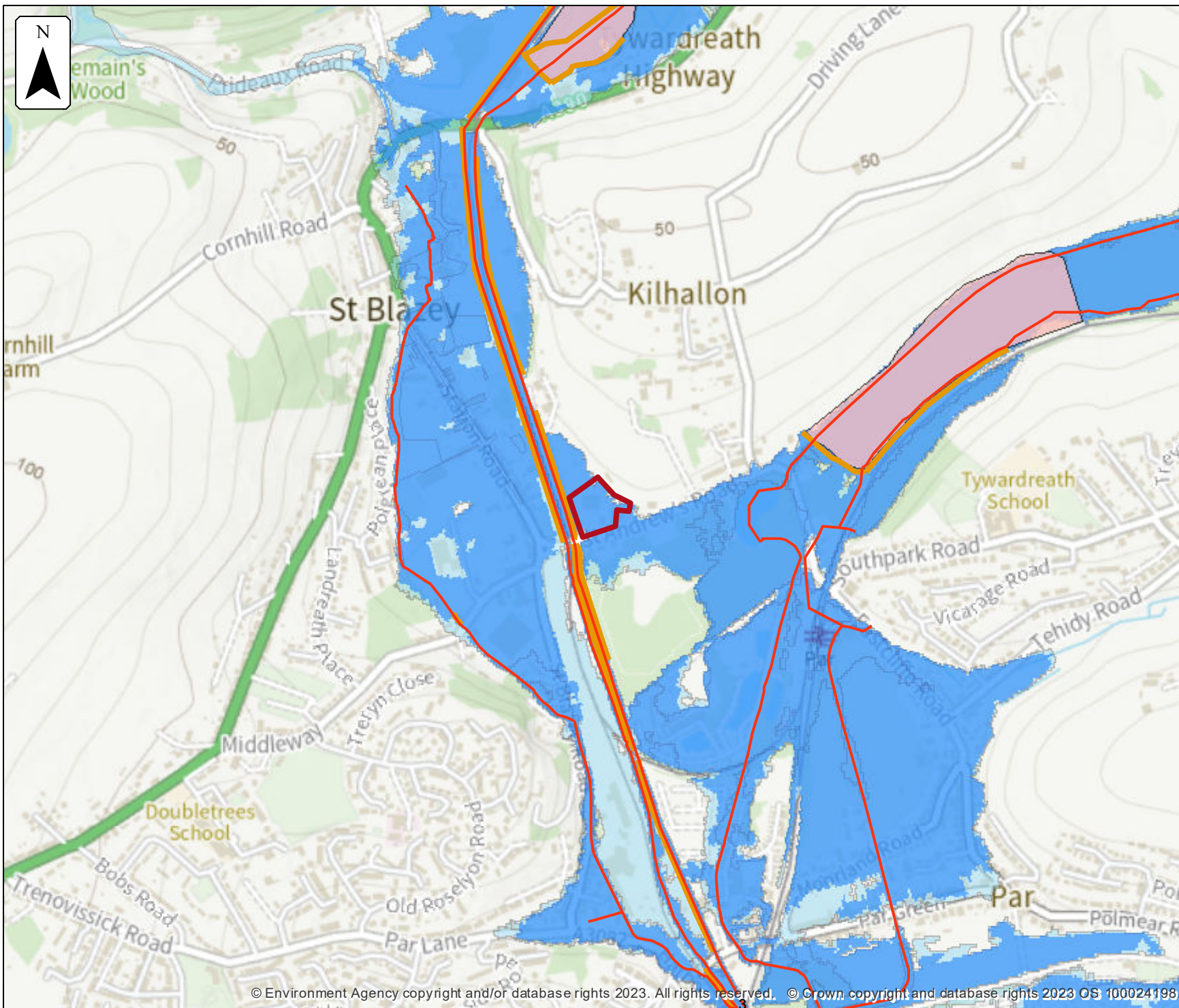
Flood map for planning

Location (easting/northing)
207282/54421

Scale
1:10,000

Created
27 Jul 2023

-  Selected area
-  Main river
-  Flood defence
-  Water storage area
-  Flood zone 3
-  Flood zone 2



Historic Information

The map below is an indicative outline of areas that have previously flooded.

Historic outlines may not be visible where they overlap. You can download the outlines separately via the link below.

[Download recorded flood outlines in GIS format](#)

Our historic flood event outlines:

- are an indication of the geographical extent of an observed flood event. We map flooding to land, not individual properties.
- not give any indication of flood levels for individual properties. They also do not imply that any property within the outline has flooded internally.
- are based on a combination of anecdotal evidence, Environment Agency staff observations and survey.
- do not provide a definitive record of flooding.

It is possible that there will be an absence of data in places where we have not been able to record the extent of flooding. It is also possible for errors to occur in the digitisation of historic records of flooding.

Remember that: other flooding may have occurred that we do not have records for

Please note that our records are not comprehensive. We would therefore advise that you make further enquiries locally with specific reference to flooding at this location. You should consider contacting the relevant Local Planning Authority and/or water/sewerage undertaker for the area.















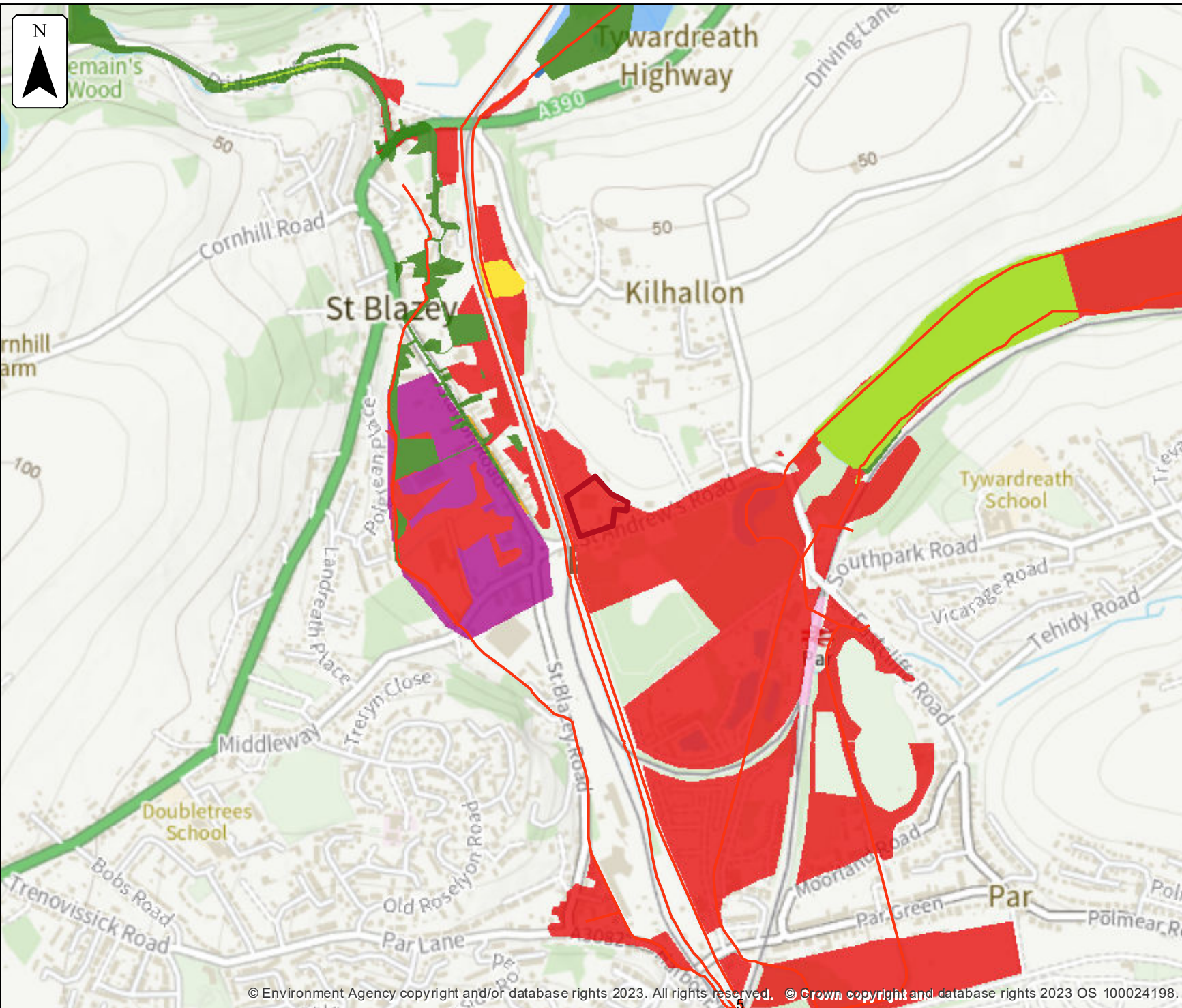
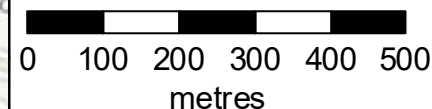
Historic flood map

Location (easting/northing)
207282/54421

Scale
1:10,000

Created
27 Jul 2023

-  Selected area
-  Main river
- Date of flood event**
-  December, 2012
-  November, 2010
-  February, 1995
-  February, 1990
-  December, 1979
-  February, 1974
-  August, 1959
-  January, 1940
-  January, 1930
-  January, 1920



Historic flood event data

Start date	End date	Source of flood	Cause of flood	Affects location
22 December 2012	22 December 2012	ordinary watercourse	channel capacity exceeded (no raised defences)	No
17 November 2010	17 November 2010	ordinary watercourse	channel capacity exceeded (no raised defences)	No
28 February 1995	28 February 1995	unknown	unknown	No
15 February 1990	15 February 1990	main river	overtopping of defences	No
27 December 1979	27 December 1979	main river	channel capacity exceeded (no raised defences)	No
11 February 1974	11 February 1974	main river	unknown	Yes
10 August 1959	10 August 1959	main river	unknown	No
1 January 1940	1 January 1940	main river	unknown	No
1 January 1930	1 January 1930	main river	unknown	No
1 January 1920	1 January 1920	main river	unknown	No

317385 - Records of flooding in the Par area.

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
27/08/2020	St Blazey	Unknown flooding source resulting in pooling water on a3082 at the junction with Par lane, no properties damaged as water was channelled within road extent.	Unknown must most likely heavy rainfall pooling on road	0	Unknown
06/02/2016	Par	Par - Substantial areas of flooding the road at St Andrews Road by the duck pond and Eastcliffe Road at the entrance to the railway station	Heavy rainfall led to surfacewater flooding	0	Surface Water Runoff
07/01/2016	St Blazey	St Blazey. Localised flooding of the A390 at the bottom of Cornhill due to a surcharging man hole and through the tarmac.	High river levels combined with heavy rainfall led to capacity exceedance	0	Fluvial
23/08/2015	Par	Par: Sewers surcharged in the area of Brooks Corner on to Par Lane. Surcharging also took place in the vicinity of St Blazey Road.	Heavy rainfall led to exceedance of the foul sewer network.	0	Sewerage

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
14/02/2014	St Blazey	St Blazey. Flooding occurred down a minor road and on to Rose Hill Road.	Unknown	0	Unknown
22/12/2012	Par	Par. Par Sands Caravan Park flooded, in addition to Snowlands Caravan Park and properties on Station Road	Fluvial Flooding	23	Fluvial
22/12/2012	St Blazey	St Blazey. Ordinary watercourse came out of bank and flowed down the road for approximately 250 meters before returning to watercourse.	Ordinary watercourse overtopping	0	Fluvial
22/12/2012	Par	Par - Tresmill Dam. Photos show the dam impounding and very high levels.	High river levels in Tresmill Stream and Tywardeath Stream	0	Fluvial

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
01/08/2011	St Blazey	Unknown, Pooling of water down Rosehill road.	Unkown	0	Unknown
17/11/2010	St Blazey	St Blazey. Severe flooding occurred after culverts on the Prideaux Stream blocked, causing out of bank flow, which ponded at the petrol station & flowed down Station Rd into Aberdeen Cl. Brooks Corner/Tredenham Cl, flood water overwhelmed system.	Extreme rainfall event. Heligan rain gauge recorded: total rainfall 60.8mm, rainfall in 1 hour 38.8mm	55	Fluvial & Surface Water Runoff
16/07/2009	St Blazey	St.Blazey. Flooding to Station Road following intense rainfall	Intense rainfall		Surface Water Runoff
15/06/2009	St Blazey	St. Blazey. Two properties on Station Road, and one property in Rebecca Close flooded.	River out of bank, channel blocked with undergrowth.	3	Fluvial
15/12/2008	St Blazey	St Blazey. Bridge Street, road flooded by field run off. Debris included mud and leaves. Church Street, propety garage flooded from surface water runoff from blocked drains, water came in over sandbags.	Unknown		Agricultural & Surface Water Runoff

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
01/10/2006	Tywardreath	Tywardreath: Tehidy Road/ Vicarage Road, one garden flooded by surface water runoff due to blocked drains.	Blocked drains contributing		Surface Water Runoff
02/12/2005	St Blazey	St Blazey. Station Road. Surface water flooding of garage of property from highway.	Blocked drains		Surface Water Runoff
08/01/2004	St Blazey	St Blazey. The garage of a property in Polgrean Place flooded from surface water runoff. The driveway of a second property flooded by surface water runoff from blocked drains.	Blocked drains.		Surface Water Runoff
02/01/2004	Par	Par. Surface water flooding reported on St Blazey Road, due to blocked drains.	Blocked drains		Surface Water Runoff
16/11/2003	St Blazey	St Blazey - Prideaux Road/New Road - Road flooded by leat overtopping at upstream screen due to 24 million gallon release from Imerys Lake system which feeds the leat which runs into River Par at St. Blazey	Excessive water beyond the capacity of the leat system	0	Fluvial & Surface Water Runoff

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
28/08/2003	Par	Par. Surface water flooding reported on St Blazey Road, due to a blocked drain.	Blocked culvert	0	Surface Water Runoff
25/07/2003	Tywardreath Highway	Tywardreath Highway. Flooding affecting the garden of one property on the A390.	Fluvial following heavy rainfall from the River Par. Highway Dam slightly impounded.	1	Fluvial
31/12/2002	St Blazey	St Blazey - Fluvial flooding at entrance to St. Blazey culvert.	Existing culverted section of stream under capacity. High flows caused by heavy rain caused overtopping	3	Fluvial & Surface Water Runoff
18/12/1999	St Blazey	St Blazey. Two properties flooded. A business flooded from local run-off which had ponded (not fluvial). No further details.	Heavy Rainfall	2	Surface Water Runoff

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
28/02/1995	St Blazey	St Blazey. Flooding in Bridge Street - two commercial properties were affected. The A390 also flooded.	Blocked drains, surface water and highway runoff.	2	Surface Water Runoff
01/03/1994	Tywardreath	Tywardreath - Flooding to 1 property in Tehidy Road. Actual date in March not known.	Surface water run-off from Vicarage Lane	1	Surface Water Runoff
30/12/1993	St Blazey	St Blazey - Flooding to property in Station Road and near Cornhill Road. Date assumed the 30th of December.	Not Known		Unknown
04/09/1990	St Blazey	St Blazey. Flooding to two properties in Doubletrees area.	Defective highway drainage.	2	Surface Water Runoff
03/10/1988	Par	Par. Reported that the footpath adjacent to Treemill Stream, towards St Andrews Road flooded due to overtopping.	Overgrown channel leading to channel overtopping.	0	Fluvial

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
27/05/1988	St Blazey	St Blazey. Gardens of properties in Station Road flooded, due to the reduced capacity of the culvert.	Upstream end of culvert submerged, due to siltation and overgrown channel.	2	Fluvial
25/02/1988	Par	Par. Flooding of woodlands on the estate due to overgrown & breached banks between Treesmill and St Andrews Road.	Overgrown channel leading to channel overtopping.	0	Fluvial
27/01/1988	St Blazey	St Blazey. A garden of a property in Fore Street flooded.	Assumed fluvial following heavy rainfall.		Fluvial
07/01/1986	Par	Par. St. Andrews Road flooded. No further details available.	Sluices closed due to works downstream.	0	Fluvial
01/01/1985	Tywardreath	Tywardreath - Flooding to properties in Tehidy Road. Exact date is unknown.	Spring water	2	Fluvial & Surface Water Runoff

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
16/01/1984	Par	Par. The garden of one property in Roselyn Place flooded.	Flooding occurred from the St Blazey Stream, due to a blocked outfall.	1	Fluvial
01/01/1982	St Blazey	St Blazey. Nine properties affected by flooding in Station Road area, and gardens flooded. Total number of properties affected unknown.	High water table/ poor drainage.	9	Surface Water Runoff
01/01/1982	St Blazey	St Blazey. Nine properties affected by flooding in Station Road area, and gardens flooded. Total number of properties affected unknown.	High water table/ poor drainage.	9	Sewerage, Tidal & Surface Water Runoff
27/12/1979	St Blazey	St Blazey. Reported that St Blazey Road & Brooks Corner flooded. Near Polmear Road, sewage was forced up through manholes. Number of properties affected unknown.	Torrential rains, and overtopping of river.	0	Fluvial & Surface Water Runoff
03/10/1979	St Blazey	St Blazey. Minor flooding on Station Road reported.	Unknown		Unknown
24/08/1977	St Blazey	St Blazey. St Blazey Road and two properties flooded, due to a blockage in the St Blazey Stream. Additional flooding at Middleway, Station Road areas and the back of Fore Street.	Assumed fluvial from St. Blazey Stream where blockage occurred in narrow section.	3	Fluvial

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
24/09/1976	St Blazey	St Blazey. Flooding to seven properties in Fore Street, and one at Middleway, and two on Brooks Corner.	Blocked drainage system.	8	Fluvial & Surface Water Runoff
21/03/1976	St Blazey	St Blazey (and Par). Flooding to properties in St Blazey Road, Station Road and Middleway.	Very heavy rain, river overtopping.	2	Fluvial & Surface Water Runoff
21/03/1976	Par	Par - See St. Blazey entry. SWWA Flooding Report.	Heavy rain, blockages in stream.	1	Fluvial & Surface Water Runoff
11/02/1974	St Blazey	St Blazey. Flooding to properties in Station Road, and at St. Andrews Garage, Agricultural Merchants and other business premises. Land and transport routes also affected by fluvial flooding following prolonged rainfall, from Par River and Treesmill Stream	Prolonged rainfall	10	Fluvial
01/06/1963	Par	Par - Reports of flooding in Par. No further details.	Unknown		Unknown
10/08/1959	St Blazey	St Blazey. Flooding reported in Station Road. No further details.	Unknown		Unknown
01/08/1958	Par	Par - Reports of flooding in Par. No further details.	Unknown		Unknown
01/11/1957	Par	Par - Reports of flooding in Par. No further details.	Unknown		Unknown

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
01/12/1954	Par	Par. Treemill Stream flooded Par Station, and the St Blazey Stream flooded properties in Harbour Road.	High tide and prolonged periods of heavy rain.		Fluvial & Tidal
01/01/1930	Par	Par - Par Station and Par Lane/St Blazey Road flooded in the 1930's.	Unknown		Fluvial
01/01/1930	St Blazey	St. Blazey. Flooding of Station Road area, assumed to be fluvial. Actual date unknown, estimated 1930's.	Unknown.		Fluvial
20/11/1852	St Blazey	St Blazey. St.Blazey river flooded land adjoining reservoir and properties, bridge gave way during flood. A number of properties collapsed. Life In Cornwall: 1852. Number of properties affected unknown.	Very heavy rain, river overtopped.	0	Fluvial

This list contains all the records of flooding we hold, in a 1km radius of the specified location. Although this information is compiled to the best of our knowledge, the absence of flooding does not mean that an area has not flooded in the past, nor guarantee it will not flood in the future. Our records are updated as more information comes to light, and as flood incidents occur.

Correct as of 31 July 2023

Flood defences and attributes

The flood defences map shows the location of the flood defences present.

The flood defences data table shows the type of defences, their condition and the standard of protection. It shows the height above sea level of the top of the flood defence (crest level). The height is in mAOD which is the metres above the mean sea level at Newlyn, Cornwall.

It's important to remember that flood defence data may not be updated on a regular basis. The information here is based on the best available data.

Use this information:

- to help you assess if there is a reduced flood risk for this location because of defences
- with any information in the modelled data section to find out the impact of defences on flood risk






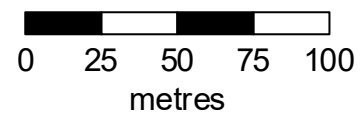
Flood defences

Location (easting/northing)
207282/54421

Scale
1:2,500

Created
27 Jul 2023

-  Selected area
-  Main river
-  Flood defence



Flood defences data

Label	Asset ID	Asset Type		Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	56137	Wall			3.86	3.61	
2	87048	Embankment			6.09	6.98	
3	58474	Embankment		Good	5.32	5.97	
4	6188	Embankment			5.37	5.64	
5	5897	Embankment		Fair	5.32	6.0	
6	58132	Embankment		Fair	5.12	5.38	
7	5896	Embankment		Fair	5.50	5.32	
8	6952	Embankment		Good	4.94	5.79	

Any blank cells show where a particular value has not been recorded for an asset.

Modelled data

About the models used

Model name: River Par ISIS TuFLOW Model

Date: 2011

This model contains the most relevant data for your area of interest.

You will need to consider the [latest flood risk assessment climate change allowances](#) and factor in the new allowances to demonstrate the development will be safe from flooding.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occurring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.



Defended modelled fluvial extent

Location (easting/northing)
207282/54421


Scale Created
1:10,000 27 Jul 2023

Model name
Par Model 2011 - defended


 Selected area

 Main river


Modelled flood extent


 5% AEP

 2% AEP

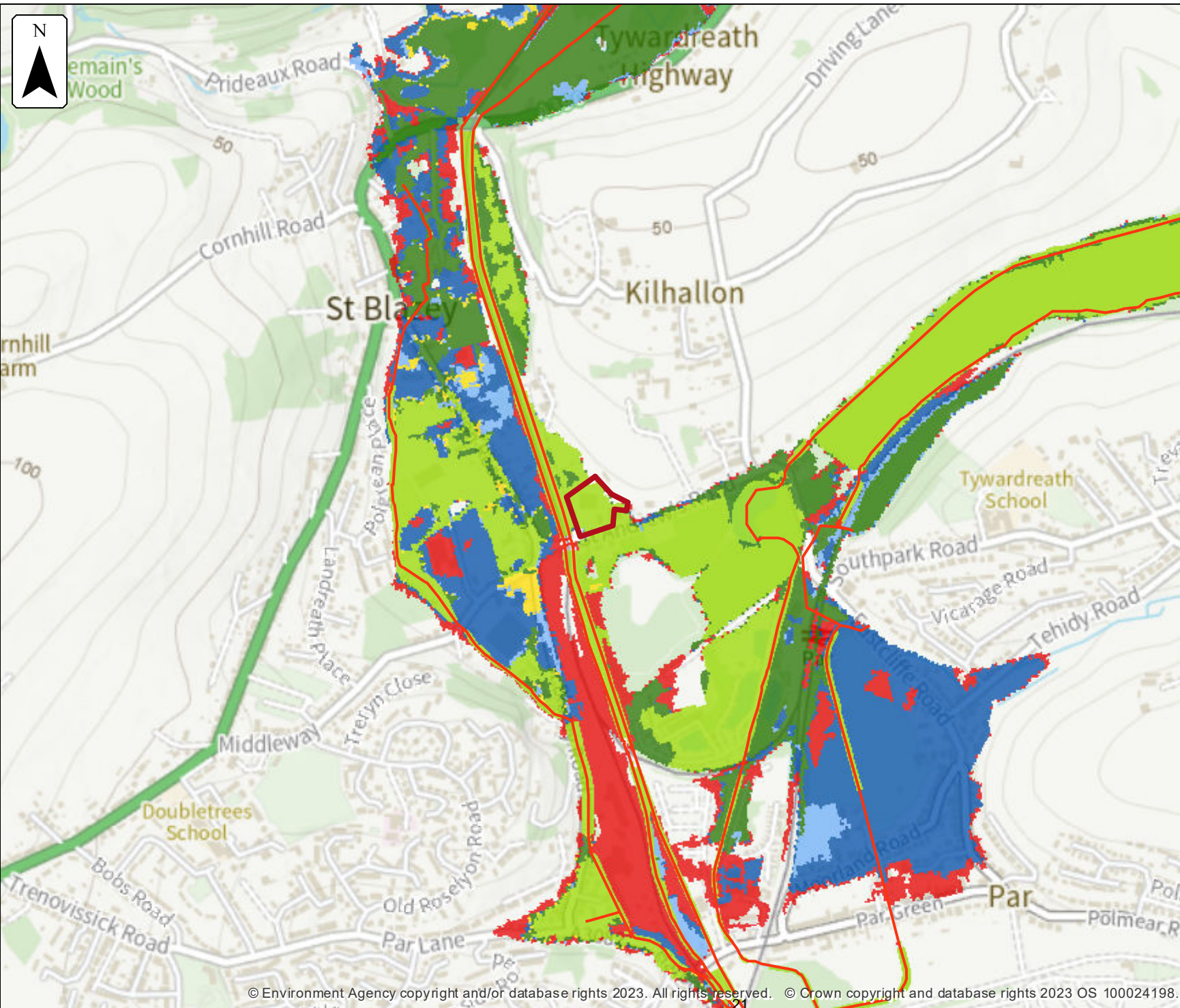
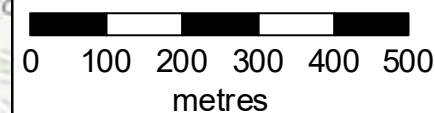
 1.33% AEP

 1% AEP

 0.5% AEP

 0.1% AEP

Flood extents may not be visible where they overlap other return periods






No defences exist modelled fluvial extent

Location (easting/northing)
207282/54421


Scale Created
1:10,000 27 Jul 2023


Model name
**Par Model 2011 -
undefended**


 Selected area

 Main river

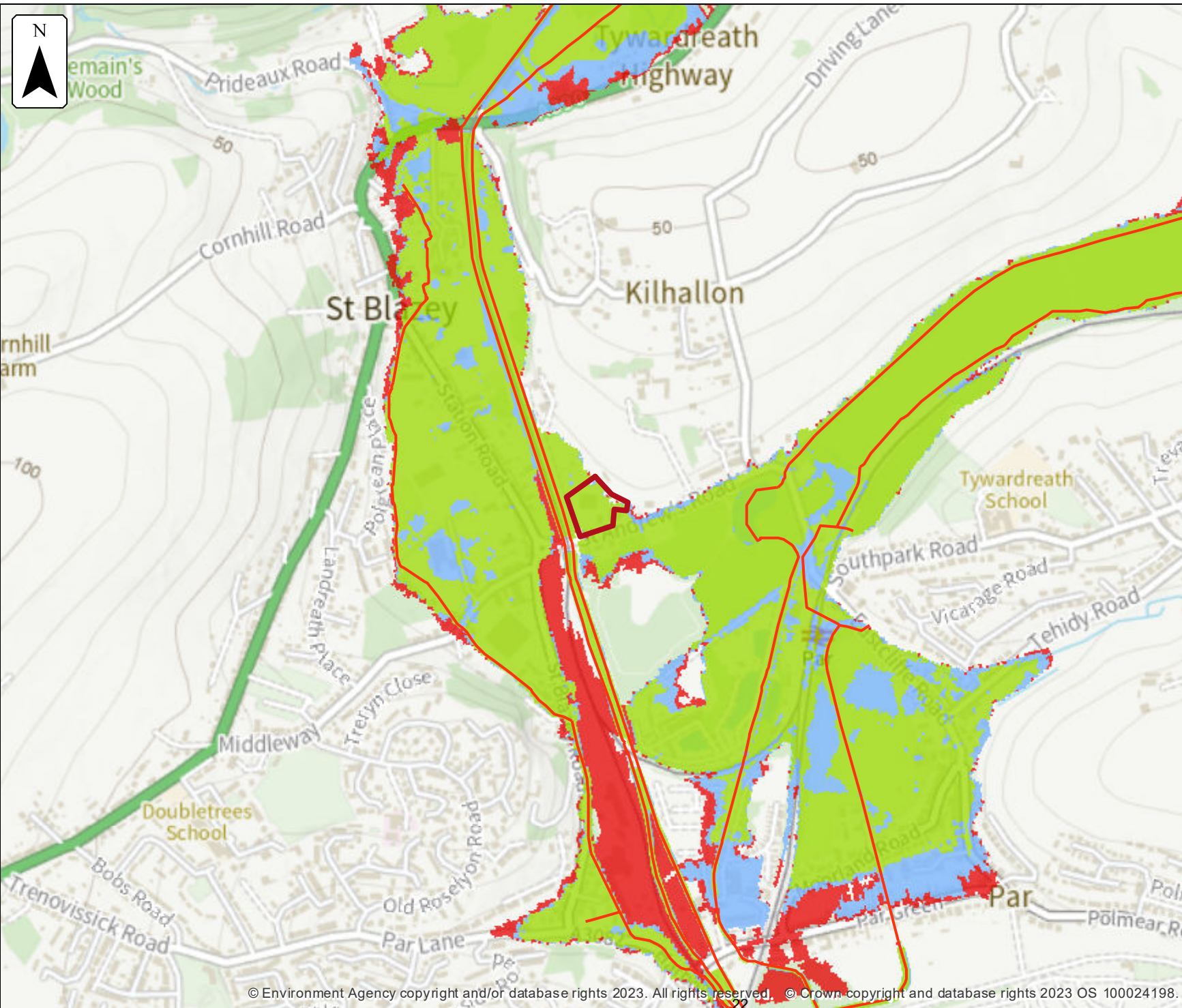
Modelled flood extent

 5% AEP

 1% AEP

 0.1% AEP

Flood extents may not be visible where they overlap other return periods








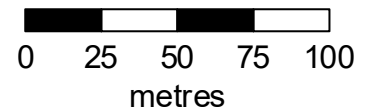
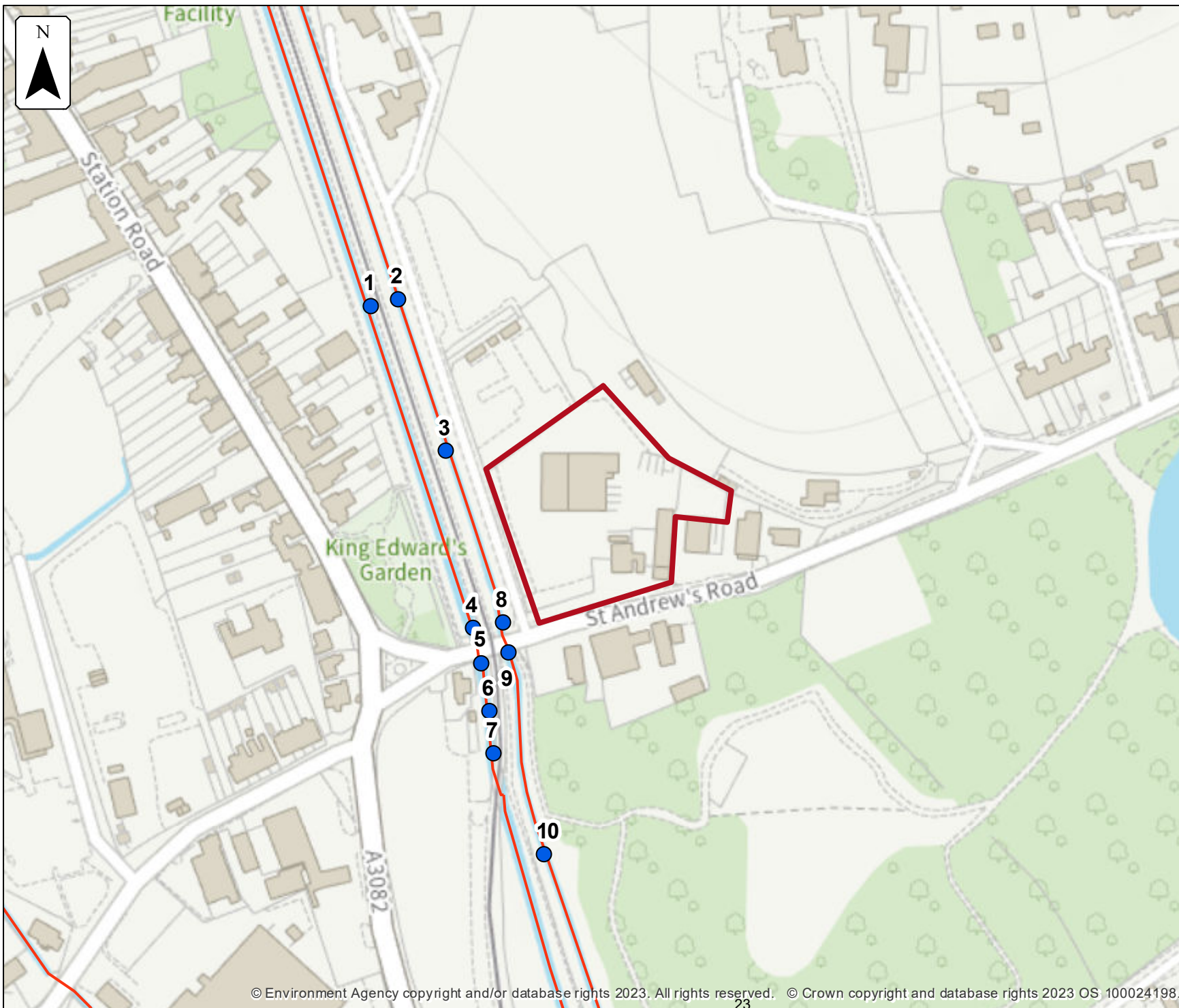
Defended modelled fluvial node locations

Location (easting/northing)
207282/54421

Scale Created
1:2,500 27 Jul 2023

Model name
**Par Model 2011 -
defended**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended

Label	Modelled location ID	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
				Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow
1	199525	207173	54518	5.15	12.76	5.19	13.17	5.19	13.27	5.74	20.24	5.80	21.74	5.94	23.86
2	235147	207186	54522	5.65	7.16	5.72	8.52	5.72	8.34	5.74	8.87	5.75	9.10	6.03	11.63
3	102421	207210	54448	5.46	7.15	5.49	8.25	5.48	8.12	5.49	8.52	5.50	8.66	5.91	9.94
4	287230	207222	54362	4.88	12.76	4.91	13.17	4.92	13.27	5.54	20.23	5.60	21.73	5.75	23.77
5	4258	207227	54345	4.76	12.76	4.80	13.17	4.81	13.27	5.37	20.23	5.50	21.73	5.62	23.77
6	193159	207230	54322	4.72	12.76	4.76	13.17	4.77	13.27	5.34	20.23	5.46	21.73	5.58	23.71
7	225717	207232	54301	4.69	12.76	4.72	13.17	4.73	13.27	5.31	20.22	5.43	21.73	5.55	23.68
8	138566	207237	54365	5.28	5.72	5.30	6.15	5.30	6.10	5.31	6.24	5.31	6.30	5.64	9.39
9	56436	207240	54350	5.19	5.72	5.20	6.15	5.20	6.10	5.20	6.25	5.20	6.30	5.47	9.39
10	161950	207257	54252	5.07	4.90	5.08	4.99	5.08	4.98	5.09	5.02	5.09	5.03	5.32	7.70

Data in this table comes from the Par Model 2011 - defended model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.






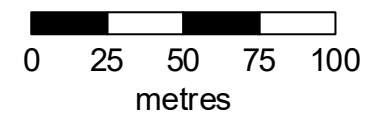
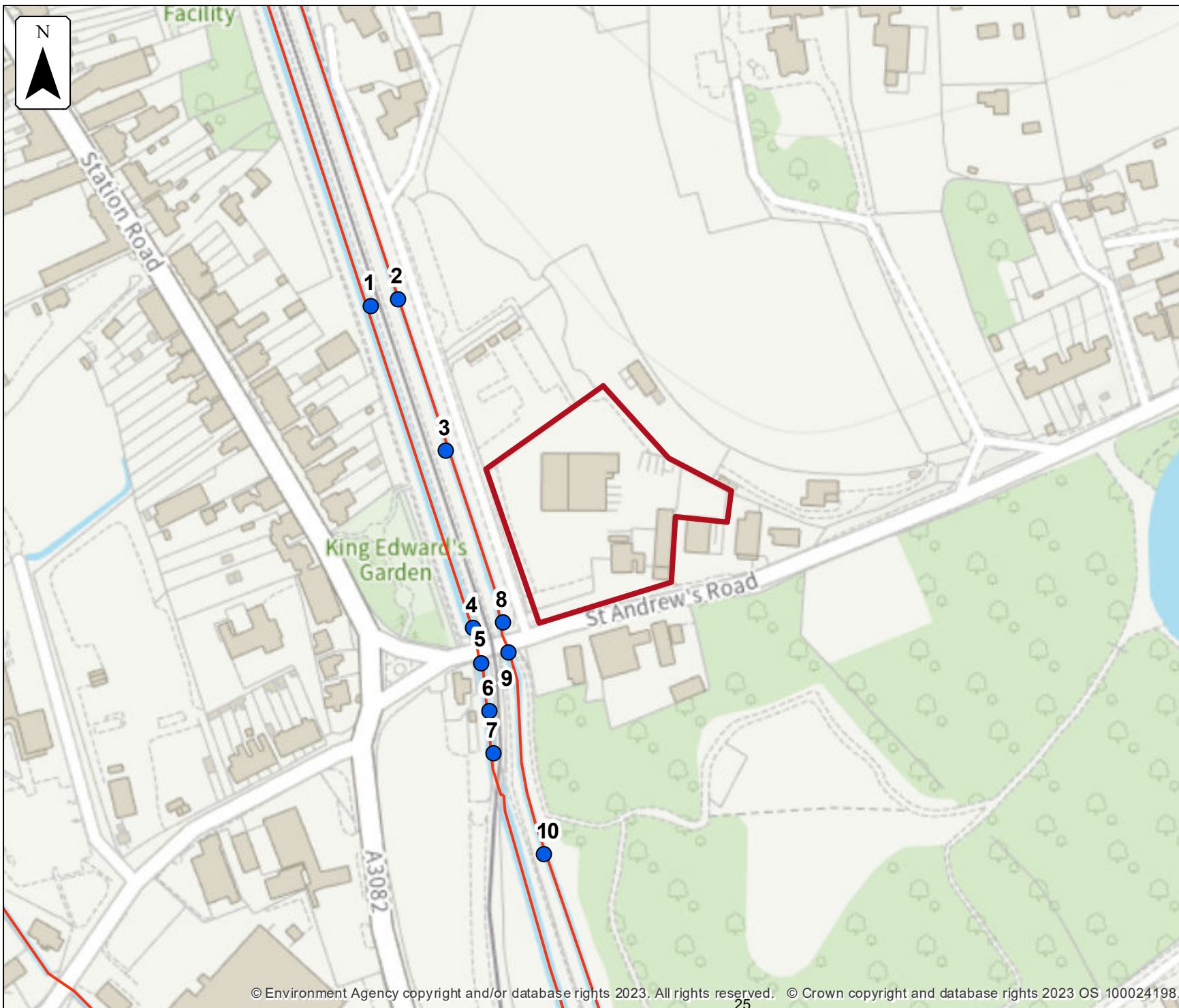
No defences exist modelled fluvial node locations

Location (easting/northing)
207282/54421

Scale Created
1:2,500 27 Jul 2023

Model name
**Par Model 2011 -
undefended**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

No defences exist

Label	Modelled location ID	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
				Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow
1	199525	207173	54518	4.69	7.36					4.70	7.39			5.55	7.69
2	235147	207186	54522	4.59	4.26					4.64	5.90			4.69	7.76
3	102421	207210	54448	4.42	1.71					4.44	2.15			4.50	3.04
4	287230	207222	54362	4.34	7.36					4.35	7.39			4.97	9.65
5	4258	207227	54345	4.25	7.36					4.27	7.39			4.08	2.65
6	193159	207230	54322	4.20	7.36					4.22	7.38			5.17	7.68
7	225717	207232	54301	4.15	7.36					4.17	7.39			5.09	7.67
8	138566	207237	54365	4.31	0.84					4.33	0.87			4.37	1.11
9	56436	207240	54350	4.28	0.84					4.29	0.87			4.33	1.10
10	161950	207257	54252	4.16	0.84					4.17	0.87			4.22	1.06

Data in this table comes from the Par Model 2011 - undefended model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.

317385 - Coastal Flood Boundary Data - Tidal Levels (2018)



Site	Grid Ref		Tidal Still Water Level (m OD) for return period Base year is 2017					
	Easting	Northing	50% AEP 1 in 2 year	20% AEP 1 in 5 year	10% AEP 1 in 10 year	2% AEP 1 in 50 year	0.5% AEP 1 in 200 year	0.1% AEP 1 in 1000 year
St Andrews Road, Par	207313	49261	3.00	3.10	3.16	3.33	3.46	3.63
Confidence intervals (2.5%)			2.98	3.07	3.13	3.26	3.37	3.49
Confidence intervals (97.5%)			3.01	3.11	3.19	3.38	3.58	3.85

Although levels are given to 2 decimal places, practitioners should treat them as only accurate to 1 decimal place. Confidence levels are provided when conducting sensitivity testing in a study or design.

Correct as of 31 July 2023

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

[Find out more about flood risk activity permits](#)

Help and advice

Contact the Devon Cornwall and the Isles of Scilly Environment Agency team at dcisenquiries@environment-agency.gov.uk for:

- [more information about getting a product 5, 6, 7 or 8](#)
- general help and advice about the site you're requesting data for

FIRST

Please check the latest Climate Change allowance :-

[Flood risk assessments: climate change allowances - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/611214/Climate_Change_Allowances_-_GOV.UK.pdf)

We expect you to use the scenario values as shown on the adjacent table for the different types of development. You may provide different scenario (i.e. High Cen for SLR) as additional assessment but we will use these values/allowances for our assessments of FRA/Designs

*CFB = Coastal Flood Boundary – available at data.gov.uk

Valid May 2022 – FCRM

DCIS Climate Change Allowances – Strategic and Development Planning

Development Vulnerability NPPG	Rainfall 1% Storms		River Less than 5km2		Fluvial	Sea Level Rise (SLR) Upper End
	Exe & East Devon	All others	Urban	Rural		
					Use 2080s values for all	Added to CFB* 2017 data
Commercial 60yr lifetime	30%	30%	30%	? - tbc	Central Allowance- See map next page	0.74m (2082 value)
Residential 100yr lifetime	45%	50%	50%	? - tbc	Central Allowance - see map next page	1.445m (2122 value)
Essential Infrastructure	45%	50%	50%	? - tbc	Higher Central - See map next page	Please confirm with EA office

SPDC@environment-agency.gov.uk or SW_Exeter-PSO@environment-agency.gov.uk



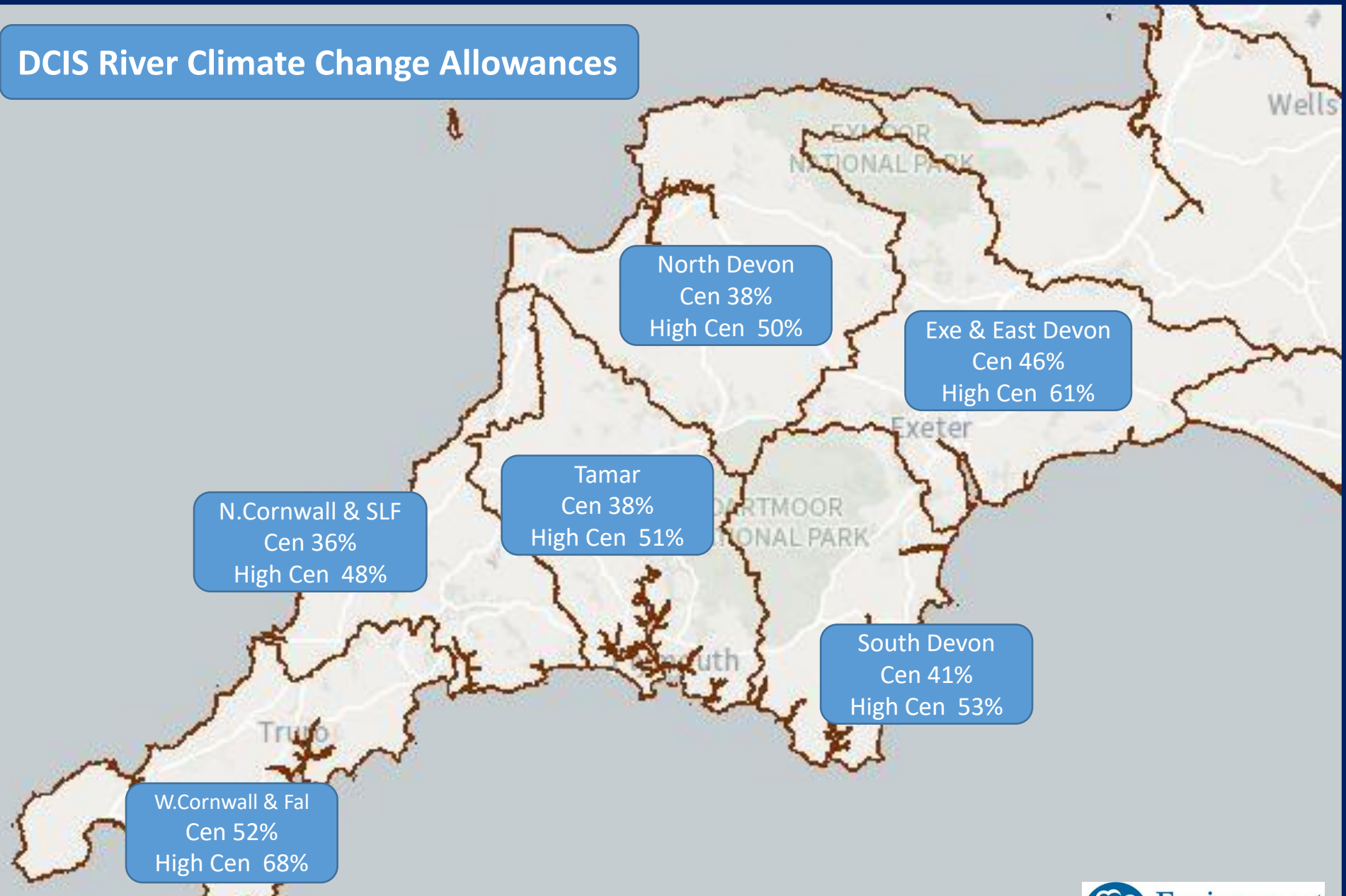
FIRST

Please check the latest Climate Change allowance :-

Flood risk assessments:
climate change allowances - GOV.UK
(www.gov.uk)

- Wave Actions (Coastal & Estuary) will also have to be considered
- Freeboard will need to be added to set minimum floor or defence levels
- +40%CC Modelled scenarios, may still be used for some catchments (>5% diff from new values).

DCIS River Climate Change Allowances



Valid May 2022 - FCRM

SPDC@environment-agency.gov.uk or SW_Exeter-PSO@environment-agency.gov.uk

Use of Environment Agency Information for Flood Risk Assessments

Important

The Environment Agency are keen to work with partners to enable development which is resilient to flooding for its lifetime and provides wider benefits to communities. If you have requested this information to help inform a development proposal, then we recommend engaging with us as early as possible by using the pre-application form available from our website:

<https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

We recognise the value of early engagement in development planning decisions. This allows complex issues to be discussed, innovative solutions to be developed that both enables new development and protects existing communities. Such engagement can often avoid delays in the planning process following planning application submission, by reaching agreements up-front. We offer a charged pre-application advice service for applicants who wish to discuss a development proposal.

We can also provide a preliminary opinion for free which will identify environmental constraints related to our responsibilities including flooding, waste, land contamination, water quality, biodiversity, navigation, pollution, water resources, foul drainage or Environmental Impact Assessment.

In preparing your planning application submission, you should refer to the Environment Agency's Flood Risk Standing Advice and the Planning Practice Guidance for information about what flood risk assessment is needed for new development in the different Flood Zones. This information can be accessed via:

<https://www.gov.uk/flood-risk-assessment-standing-advice>
<http://planningguidance.planningportal.gov.uk/>

You should also consult the Strategic Flood Risk Assessment or other relevant materials produced by your local planning authority.

You should note that:

1. Information supplied by the Environment Agency may be used to assist in producing a Flood Risk Assessment (FRA) where one is required, but does not constitute such an assessment on its own.
2. This information covers flood risk from main rivers and the sea, and you will need to consider other potential sources of flooding, such as groundwater or surface water runoff. Information produced by the local planning authority referred to above may assist here.
3. Where a planning application requires an FRA and this is not submitted or is deficient, the Environment Agency may raise an objection.

You asked us to provide you with depth / flow / water level data from the River Par ISIS / TuFLOW model, 2011.

You should be aware of the following points, when considering modelled water levels:

- The maps produced as part of this commission do not show localised flooding resulting from intense rainfall and where surface flow might exceed the capacity of the drainage system. Likewise, the flood maps produced for this study do not show areas where overland sheet flow or runoff might cause flooding.
- The latest National guidance provided by the Environment Agency has been followed when identifying and including flood defences in the hydraulic model. This guidance states that flood defences should be assumed to be in perfect condition. This may not reflect reality and thus the condition of flood defences should be considered when undertaking site specific flood risk assessments.
- The undefended model scenario is based on a situation where Treesmill Dam and Highway Dam FASs are removed, the tide gate is permanently open, flood embankments in the urban area of Par and St Blazey have been removed, and the Pontsmill Sluice Gates have been removed. The reality of such a scenario should be given adequate consideration.
- Due to model instabilities, the St Blazey Stream was modelled in the 2D for the undefended (flood defences removed) model run. As there was not a 1D element in this model scenario, in channel water levels could **not** be extracted for the watercourse. We do have water levels for the 100 year & 100 year + climate change for the defended scenario (flood defences included in the scenario). The 1000 year defended model run was also only modelled in 2D therefore we do not have water levels for this scenario.
- In this commission the focus has been on flooding from fluvial sources rather than tidal inundation. It is important that consideration is given to tidal flooding for any further development within Par, in addition to combinations of fluvial and tidal events.
- The maps and digital data supplied should be considered only a summary of the conclusions of the study. It will be necessary to collect more detailed topographic information for particular sites where development is proposed and undertake a more detailed site-specific hydrological and hydraulic analysis for the location under study using guidance from the National Planning Policy Framework (NPPF).
- The data provided is not calibrated or verified
- Any assessment of Flood Risk undertaken must be appropriate for the decisions that need to be based upon it, consider the risks and also take into account any limitations of the data used.
- Please be aware that the Environment Agency does not guarantee that this data is suitable for your purposes.



Devon Cornwall and Isles of Scilly Area

Preliminary Opinion Advice Note

January 2019

This document sets out the environmental issues we will consider when providing our planning application consultation advice to Local Planning Authorities. It can be used by applicants, developers and consultants at the pre-planning stage.

Further pre-application options

We are able to provide detailed and bespoke advice and answer technical questions for a charged fee which equates to £100 per hour plus VAT.

If you are interested in finding out more about this service, please email:

SPDC@environment-agency.gov.uk

We can explain this service and provide you with a bespoke quote for further pre-application advice that you may require.

Fluvial/Tidal Flood Risk

Development must be safe and should not increase the risk of flooding.

You can view a site's flood zone on the Flood Map for Planning on the .gov.uk website

<https://flood-warning-information.service.gov.uk/long-term-flood-risk>

If your proposed development is located within flood zone 2 or 3 you should consult the Flood Risk and Coastal Change pages of the National Planning Policy Guidance (NPPG)

<http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/>

Here you can determine whether the flood risk vulnerability of your proposed development and the flood zone are compatible. You can also establish if there are flood risk sequential test and exception test requirements for your proposed development.

If your proposed development is located within flood zone 2 or 3 and its vulnerability and flood zone are considered acceptable under the NPPG then a site specific Flood Risk Assessment (FRA) is required to support any subsequent planning application. This is required by paragraph 103 of the National Planning Policy Framework (NPPF)

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

Guidance on the content of a site specific FRA can be found on the NPPG and the .gov website:

<https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>

We are in the process of making the majority of our data open source. Flood risk data is available from .gov.uk <https://data.gov.uk/data/search?q=Flood&publisher=environment-agency&unpublished=false>

However, if you need more detailed flood risk modelling data to help you produce a FRA then please contact our Customers and Engagement team at DCISEnquiries@environment-agency.gov.uk

Climate Change Allowances

On 19 February 2016, we published new guidance for planners and developers on how to use climate change allowances in a site-specific FRA: <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

If you have any questions regarding this guidance, please contact our Customers and Engagement team:

DCISEnquiries@environment-agency.gov.uk

Groundwater Quality

Development must not cause pollution to the water environment.

Source Protection Zones

These zones indicate that an area is very sensitive to pollution risks due to the proximity of drinking water sources and the way groundwater flows. In these areas we may consider it inappropriate for development to discharge foul or surface water into the ground.

To see if your proposed development is located within a Source Protection Zone, please use our online map: <http://apps.environment-agency.gov.uk/wiyby/37833.aspx>

Contaminated land

The NPPF takes a precautionary approach to land contamination. Before the principle of development can be determined, land contamination should be investigated to see whether it could preclude certain development due to environmental risk or cost of remediation.

Where contamination is known or suspected, a desk study, site investigation, remediation and other works may be required to enable safe development (paragraph 121 of the NPPF). Minimum requirements for submission with a planning application are a preliminary risk assessment, such as a site walkover or desk top study.

Site investigation and remediation strategy reports may be required for submission with a planning application for sensitive land use types or where significant contamination, or uncertainty, is found. When dealing with land affected by contamination, developers should follow the risk management framework provided in the CLR11, Model Procedures for the Management of Land Contamination:

<https://www.gov.uk/guidance/land-contamination-risk-management>

Pollution

If the proposed development use has the potential to pollute ground or surface water receptors then an assessment to establish whether the risk of pollution is acceptable or can be satisfactorily mitigated for will be required within any planning application.

Foul Drainage

When drawing up wastewater treatment proposals for any new development, the first presumption is to provide a system of foul drainage discharging into a public sewer to be treated at a public sewage treatment works (those provided and operated by the water and sewerage companies). This should be done in consultation with the sewerage company of the area prior to the submission of a formal planning application.

If connection to the public sewerage system is not feasible, a private foul drainage system may be considered. Under the Environmental Permitting Regulations 2010 any discharge of sewage or trade effluent made to either surface water or groundwater will need to be registered as an exempt discharge activity or hold a permit issued by the Environment Agency, in addition to planning permission. This applies to any discharge to inland freshwaters, coastal waters or relevant territorial waters.

Further guidance is available at:

<https://www.gov.uk/government/publications/small-sewage-discharges-in-england-general-binding-rules>.

Main Rivers

Ecology

If a Main River is located on or within 8 metres of your proposed development site an ecological survey is required to establish whether development is likely to have a detrimental impact on the biodiversity of the watercourse. We would not support development proposals if there was shown to be a likely detrimental impact on the water environment. In accordance with the National Planning Policy Framework (NPPF), any development proposal should avoid significant harm to biodiversity and seek to protect and enhance it. Opportunities to incorporate biodiversity in and around the development will be encouraged.

Your scheme should be designed with a naturalised buffer zone of at least 8 metres from the main river to protect and enhance the conservation value of the watercourse and ensure access for flood defence maintenance.

This buffer zone should be managed for the benefit of biodiversity for example by the planting of locally appropriate, UK native species. The buffer zone should be undisturbed by development with no fencing, footpaths or other structures. This buffer zone will help provide more space for flood waters, provide improved habitat for local biodiversity and allows access for any maintenance requirements.

To identify any Main Rivers in proximity to your proposed development please see our Main Rivers Consultation Map: <http://apps.environment-agency.gov.uk/wiyby/151293.aspx>

Water Framework Directive (WFD)

With any development alongside watercourses, consideration should be given to the requirements of the Water Framework Directive (WFD) <http://ec.europa.eu/environment/water/water-framework/>. This includes preventing overall deterioration in water quality and promoting improvement in the ecological status of any water body. Actions to achieve this are listed in the South West River Basin Management Plan (RBMP) <https://www.gov.uk/search?q=River+Basin+Management+Plans>.

Where appropriate, a WFD Assessment (<http://planningguidance.communities.gov.uk/blog/guidance/water-supply-wastewater-and-water-quality/water-supply-wastewater-and-water-quality-considerations-for-planning-applications/>) should assess any potential impacts on the watercourse and demonstrate that the required enhancements will be delivered. In some cases the requirements of a WFD assessment can be incorporated into an Environmental Impact Assessment (EIA). Any development that has the potential to cause deterioration in classification under WFD or that precludes the recommended actions from being delivered in the future is likely to be considered unacceptable to us.

Environmental Permitting Regulations

To see if your proposed development requires an Environmental Permit under the Environment Permitting Regulations please refer to our website:

<https://www.gov.uk/guidance/check-if-you-need-an-environmental-permit>

From 6 April 2016 an Environmental Permit is required for any proposed works or structures, in, under, over or within 8 metres of the top of the bank of a designated Main River and within 16 metres of a tidal defence.

Please note

This document is a response to a pre-application enquiry only and does not represent our final view in relation to any future planning application made in relation to any site. You should seek your own expert advice in relation to technical matters relevant to any planning application before submission.

If you have any questions please contact the Sustainable Places team:

SPDC@environment-agency.gov.uk

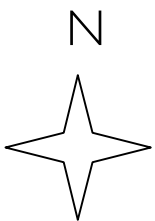
customer service line
03708 506 506

incident hotline
0800 80 70 60

floodline
0345 988 1188

www.gov.uk/environment-agency

APPENDIX B EXISTING AND PROPOSED USAGE/TOPOGRAPHIC SURVEY



DS 1782 LP 01 PI Location Plan
 Walter Bailey
 St Andrews Road
 Par

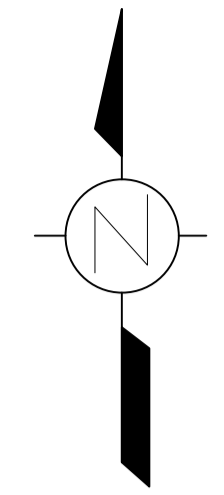
1:1250 @ A4

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ALA ARCHITECTS

RIBA 
 Chartered Practice



Store Trade Counter

Concrete
Racking installed along boundaries with materials to be stacked vertically rather than laid on the ground, as is currently the case.

Existing Yard Reorganised

Larger Parking Spaces for Trade Vehicles

Unmade Ground

Area Overgrown

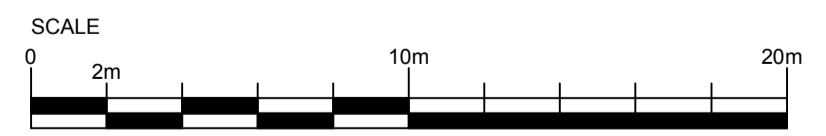
Store

Office

Shop

Garage

St Andrew's Road



207200E

207240E

207280E

207320E

207360E

207400E

207440E

54440N

54380N

54320N

54260N

54200N

54140N

54440N

54380N

54320N

54260N

54200N

54140N



Engineering and Development Solutions Ltd

Registered Office: Unit E4 | Truro Business Park| Truro | Cornwall | TR4 9LD
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