

Flood Risk Assessment

95 Downlands Avenue, Worthing, BN14 9HF





Project: CCA
Revision: 00

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1 Introduction

This Flood Risk Assessment (FRA) has been prepared in accordance with the National Planning Policy Framework (NPPF) and associated guidance, in support of a planning application at **95 Downlands Avenue, Worthing, BN14 9HF**.

1.1 Summary

This Flood Risk Assessment (FRA) has been prepared by SB Architectural Design on behalf of the applicant in support of proposals for a single-storey rear extension with roof terrace above, and conversion of ground-floor garage, at the above address.

This Assessment is to be read in conjunction with the documents that accompany the planning application. The Environment Agency (EA) Flood Map for Planning confirms the site is located in Flood Zone 1 (low probability of fluvial or tidal flooding). EA mapping information provided indicates very low risk of flooding from surface water (present day and 2040–2060 epoch) and very low risk from river and sea flooding (present day and 2036–2069 epoch). The applicant is not aware of any historic flooding affecting the site.

A SuDS-led approach is proposed to manage surface water (infiltration via soakaway subject to testing), together with exceedance routing away from the dwelling. On this basis, the proposed development is considered acceptable in flood risk and drainage terms and will not increase flood risk elsewhere.

1.2 Planning Policy

This section sets out the national and local policy framework relevant to flood risk and drainage for the proposed development. The following policies are relevant:

1.2.1 National Planning Policy Framework

The current version of the National Planning Policy Framework (NPPF), dated December 2024, is relevant to this report.

- The NPPF requires a sequential test to be used in areas known to be at risk now or in the future from any form of flooding, except where a site-specific FRA demonstrates no built development (including access/escape routes or land raising) would be located on land at risk from any source now or in the future.
- When determining planning applications, local planning authorities should ensure flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific FRA. Development should only be allowed in areas at risk of flooding where, in light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

'Within the site, the most vulnerable development is located in areas of lowest flood risk unless overriding reasons apply; The development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment; It incorporates sustainable drainage systems unless there is clear evidence that this would be inappropriate; Any residual risk can be safely managed; and Safe access and escape routes are included where appropriate, as part of an agreed emergency plan.'

- The NPPF states that an FRA should be provided for all development in Flood Zones 2/3, and in Flood Zone 1 for sites of 1 hectare or more; land with critical

drainage problems identified by the EA; land identified in a SFRA as being at increased flood risk in future; or land that may be subject to other sources of flooding where development would introduce a more vulnerable use.

- The NPPF notes that some minor development and changes of use should not be subject to the sequential or exception tests but should still meet site-specific FRA requirements (Footnote 62: includes householder development, small non-residential extensions under 250 m², and changes of use—except to caravan/camping/mobile/park home sites).

1.2.2 Lead Local Flood Authority (LLFA)

West Sussex County Council (WSCC) is the Lead Local Flood Authority under the Flood and Water Management Act 2010, responsible for coordinating local flood risk management. Key documents include:

- Preliminary Flood Risk Assessment (May 2011)
- Local Flood Risk Management Strategy (July 2025)

1.2.3 Adur & Worthing Council

- Level 1 Strategic Flood Risk Assessment (SFRA) – July 2024
- Level 2 Strategic Flood Risk Assessment – July 2020 (under review)
- The Worthing Local Plan (adopted March 2023), Policy DM20:

‘Development should be directed away from highest flood risk areas from any source; Requires site-specific FRAs for specified circumstances; Requires demonstration that sequential/exception tests are met where applicable; Requires SuDS and natural flood management to reduce flood risk and deliver multi-functional benefits; Requires safe access/egress, no increase in flood risk elsewhere, and appropriate flood resistance/resilience so development can be quickly brought back into use after a flood event.’

2 Existing Site

This section describes the site location, existing conditions and current drainage arrangements relevant to flood risk.

2.1 Site Location

Address: 95 Downlands Avenue, Worthing, BN14 9HF

National Grid Reference: TQ148050 (514886, 105006)

The site is located within an established residential area of Worthing. Primary access/egress is via Downlands Avenue, with a secondary route available via the rear easement road accessed from Shandon Road.

2.2 Site Description

Site Area: approximately 358m². **Existing use:** C3 - Dwellinghouse.

Existing Topology: specific m AOD unknown; external ground is approx. 150mm below internal FFL. Topology is broadly flat within the surrounding area. Approx. 50% of the rear garden is soft permeable landscaping.

2.3 Existing Drainage

Surface water drainage arrangements are understood to drain via downpipes to the public sewer network, though possibly soakaway. **Foul drainage** is connected to the public sewer.

2.4 Geology and Groundwater

- Historical borehole data is unavailable within the area, as per British Geological Survey (BGS) data.
- Infiltration feasibility can be confirmed through BRE Digest 365 testing and assessment of ground conditions during detailed drainage design, if required.
- Groundwater vulnerability is classified as medium-high, with a soluble rock risk according to DEFRA's online 'Magic Map'.

3 Flood Zone & History

This section summarises the site's flood risk context using Environment Agency mapping outputs. Copies of available flood maps are located in the Appendix of this report.

3.1 Flood Zone

The EA Flood Map for Planning identifies the site within **Flood Zone 1**, indicating a low probability of flooding from rivers or the sea.

EA mapping results provided for this assessment indicate:

Risk of flooding from surface water: **very low** (present day and 2040–2060 epoch)

Risk of flooding from rivers and sea: **very low** (present day and 2036–2069 epoch)

3.2 Flood Defences

The Beachy Head to Selsey Bill Shoreline Management Plan (SMP, 2006; under review) sets the coastal policy framework. The preferred policy for the coastline in the Adur & Worthing area is “Hold the Line,” maintaining or upgrading defences.

The Rivers Arun to Adur flood and erosion management strategy (2010–2020) details works and approaches to achieve “Hold the Line” at locations including Worthing and Shoreham-by-Sea. The EA has implemented recommended options in phases.



3.3 Flood History

Environment Agency: Online mapping of historic flood incidents does not identify records affecting the site or its immediate vicinity.

West Sussex County Council: Neither the Preliminary Flood Risk Assessment (2011) nor the Local Flood Risk Management Strategy (2025) identifies historic incidents affecting the site.

Adur & Worthing Councils: The Level 1 SFRA (July 2024) does not identify historic flooding incidents at or immediately around the site.

3.4 Reservoir Flooding

The EA 'Risk of Flooding from Reservoirs' mapping indicates the site is not in an area likely to be flooded from reservoir failure.

4 Proposed Development

This section describes the proposed works and the measures incorporated to manage surface water and residual flood risk.

4.1 Description

Proposed development: Proposed single-storey rear extension with a roof terrace above and conversion of the existing ground-floor garage.

Occupancy: 3 bedrooms.

Floor levels: No change. Finished floor levels (FFLs) unchanged from existing for both the extension and the garage conversion, with the converted garage floor formed to match the existing internal floor level. No basements or lower-ground-floor accommodation are proposed.

Anticipated Lifetime: Residential development lifetime of 60–100 years is assumed.

4.2 Surface Water Drainage

Risk: Environment Agency Risk of Flooding from Surface Water mapping indicates the site is at **very low risk** of surface water flooding. Notwithstanding mapped risk, intense rainfall events may exceed local drainage capacity; therefore a SuDS-led strategy is proposed.

Strategy: Surface water will be managed in accordance with the **SuDS hierarchy**, prioritising **infiltration to ground**, subject to infiltration testing and ground conditions (BRE Digest 365).

Measures: The surface water strategy will follow the SuDS hierarchy, prioritising infiltration to ground subject to BRE Digest 365 testing and confirmation of ground conditions. The proposed roof drainage will be directed to an on-plot infiltration feature (e.g., soakaway) suitably sized at detailed design stage, including an allowance for climate change rainfall intensity.

Discharge: Existing surface water is understood to connect to the public sewerage network; however, the proposal is to manage runoff from the proposed works on-plot via infiltration where feasible, so that there is no routine discharge from the proposed roof drainage to a sewer. If infiltration is demonstrated to be unviable, a fallback strategy (e.g., on-plot attenuation with restricted discharge to an agreed outfall) will be explored, subject to agreement with the LLFA/LPA and the relevant sewerage undertaker (as applicable).

4.3 Surface Water Drainage Key Details

New roof area: Approximately 30 m² gross, noting that approximately 22.5 m² replaces existing roofed area associated with the conservatory and garage flat roof. Roof runoff to discharge to an on-plot soakaway located within the rear garden, subject to confirmation of feasibility through BRE 365 infiltration testing, groundwater considerations and detailed design.

Rear decking: Approximately 30 m² of rear decking will replace existing non-permeable surfaces. The decking and adjacent finished levels will be detailed to fall away from the house and discharge to garden landscaping.

Threshold detailing: Rear doorways will incorporate level thresholds for accessibility, supported by perimeter threshold drainage - incorporating suitable drop/upstand levels - to reduce the potential for water to pond/spill at openings.

5 Flood Risk Control, Mitigation & Management

This section demonstrates that the development is appropriate for its flood risk context and that risks are appropriately managed.

5.1 Vulnerability classification & compatibility

With reference to Annex 3 of the NPPF, the vulnerability classification of the proposed development (dwellinghouse, Use Class C3) is “More Vulnerable”.

In accordance with the NPPF flood risk vulnerability and flood zone compatibility guidance, “More Vulnerable” development is appropriate in Flood Zone 1, subject to the Sequential Test being satisfied and the development being designed to be safe for its lifetime without increasing flood risk elsewhere.

The proposal comprises the conversion and extension of an existing residential property within an established urban residential area. The development does not introduce a more vulnerable use than existing and incorporates flood resistance/resilience measures proportionate to the mapped flood risk over the lifetime of the development.

5.2 Sequential and Exception Test considerations

As the site is within Flood Zone 1, the Sequential Test is inherently satisfied. The proposal is a householder extension and alteration to an existing dwelling within an established residential area and does not introduce a more vulnerable use. An Exception Test is not required.

5.3 Risk to People

Given the site's Flood Zone 1 location and very low mapped risk from surface water and river/sea flooding, the risk to people is considered low.

Primary access/egress is available via **Downlands Avenue**, with secondary access via the rear easement road accessed from Shandon Road. Occupants should respond to severe weather warnings and avoid travel through floodwater in accordance with EA and local authority advice.

5.4 Property & Structure

The proposal is designed so that flood risk is **not increased elsewhere**, and to ensure the dwelling can be **quickly brought back into use** following a flood event, in accordance with NPPF expectations for resilience. Particular measures include:

Finished floor levels:

- The proposal maintains the existing arrangement of the dwelling and does not propose lower ground floors or basement accommodation.
- Ground floor level (FFL) is proposed at approx. **+150mm above external** level.
- New openings to be raised well above ground level, or otherwise include suitable drainage measures (e.g. perimeter drainage).

Resistance and resilience measures:

- **Upper-floor refuge** inherent in the two-storey layout.
- **Resilient ground floor finishes** where practicable (e.g., tiled/treated finishes rather than highly absorbent floor coverings).
- **Electrics and services** located to reduce damage and downtime:
 - sockets typically set above standard low-level positions where practicable,

- key equipment (consumer unit, controls) positioned at higher levels or protected locations,
- accessible isolation points for utilities.
- **Fabric considerations:** use of water-tolerant materials at lower levels and detailing that supports cleaning/drying after an event.
- **External layout:** landscaping and levels arranged to avoid directing exceedance flows toward building openings.

Floodplain / displacement:

- The proposal does not introduce land raising intended to exclude floodwater and does not create a material loss of floodplain storage at this scale.
- Surface water runoff will be managed on-plot using SuDS (Section 4.2),
- preventing increased burden on downstream systems during storm events.

5.5 Residual risk & management

Residual flood risk remains primarily due to extreme rainfall exceedance, potential blockage of drainage components (e.g., threshold drains/inlets), and possible reduced infiltration performance over time.

Residual risks are managed through:

- **two-storey refuge** and household emergency preparedness,
- **SuDS maintenance** (regular inspection/clearing of inlets, periodic permeable paving maintenance, soakaway checks as appropriate),
- **exceedance routing** to keep flows away from the dwelling and neighbouring properties,
- selection of **resilient internal finishes** and protected services to minimise recovery time.

6 Conclusion

The proposed single-storey rear extension with roof terrace above and garage conversion at **95 Downlands Avenue, Worthing (BN14 9HF)** is located in **Flood Zone 1**. EA mapping indicates a **very low risk from surface water flooding** (present day and 2040–2060 epoch) and a **very low risk from river and sea flooding** (present day and 2036–2069 epoch). The EA reservoir mapping indicates the site is **not in an area likely to be flooded from reservoir failure**. No historic flooding is known at the site.

A proportionate Flood Risk Assessment has been prepared to demonstrate that flood risk is appropriately managed for this householder proposal. The proposal incorporates a SuDS-led surface water drainage strategy (infiltration soakaway subject to BRE 365 testing), appropriate threshold detailing and external falls, and exceedance routing away from the dwelling.

The development is therefore **considered acceptable in flood risk** terms for planning purposes, subject to detailed drainage design and future maintenance.



7 Appendix

Get a boundary report

Edit

Delete

Datasets

Flood zones 2 and 3

Surface water

None

Climate change

Present day

2070 to 2125

Map features

Water storage

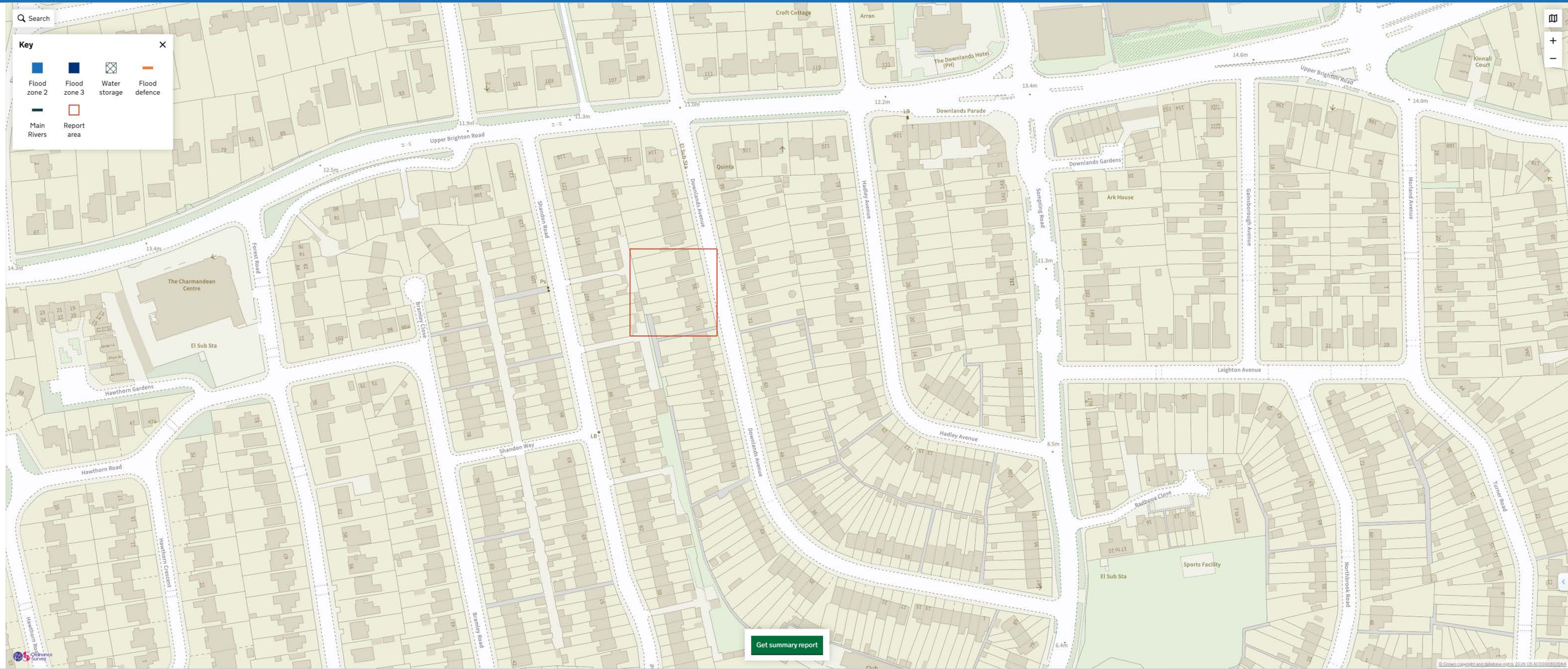
Flood defence

Main Rivers

Search

Key

			
Flood zone 2	Flood zone 3	Water storage	Flood defence
			
Main Rivers	Report area		



Get summary report

Get a boundary report

- Edit
- Delete

Datasets

- Flood zones 2 and 3
- Surface water
- None

Climate change









- Present day
- 2070 to 2125

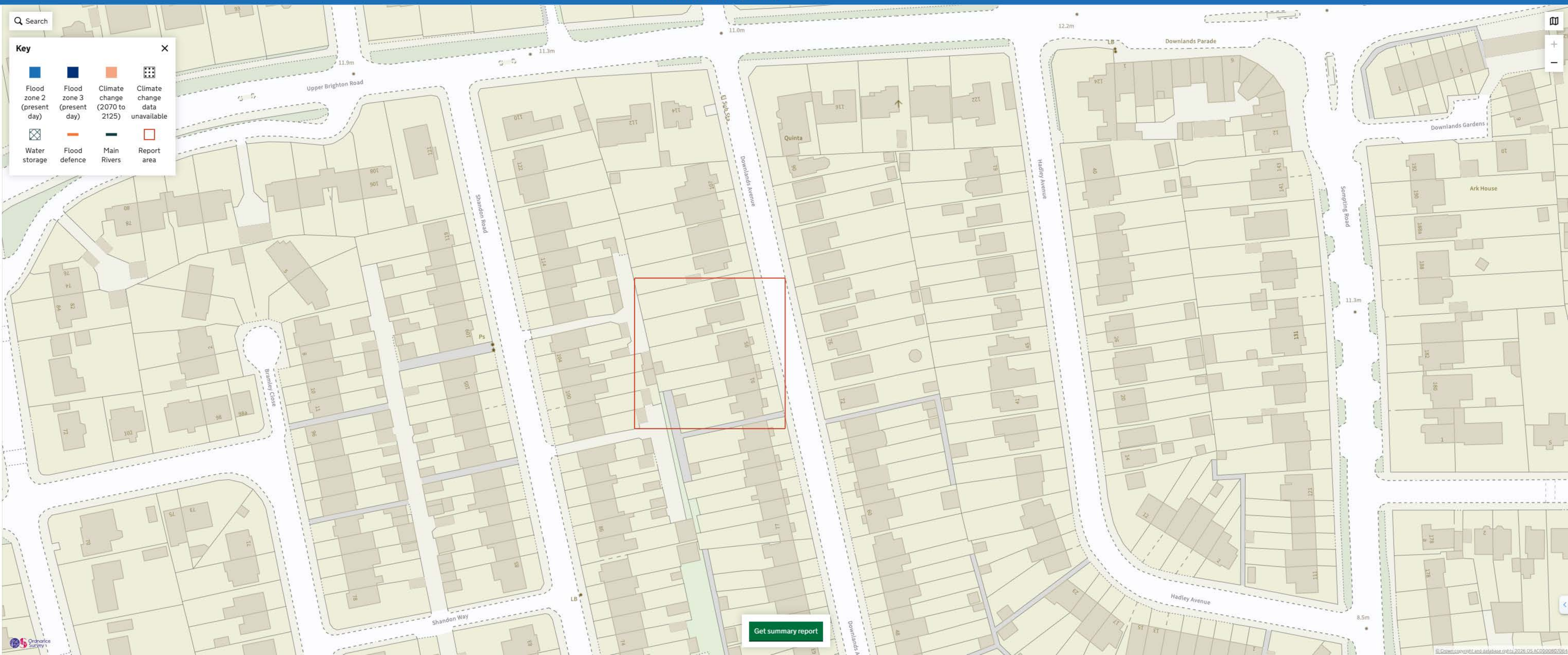
Map features

- Water storage
- Flood defence
- Main Rivers

Search

Key

 Flood zone 2 (present day)	 Flood zone 3 (present day)	 Climate change (2070 to 2125)	 Climate change data unavailable
 Water storage	 Flood defence	 Main Rivers	 Report area



Get summary report

Get a boundary report

- Edit
- Delete

Datasets

- Flood zones 2 and 3
- Surface water
- None

Annual likelihood of flooding

- 1 in 30
- 1 in 100
- 1 in 1000

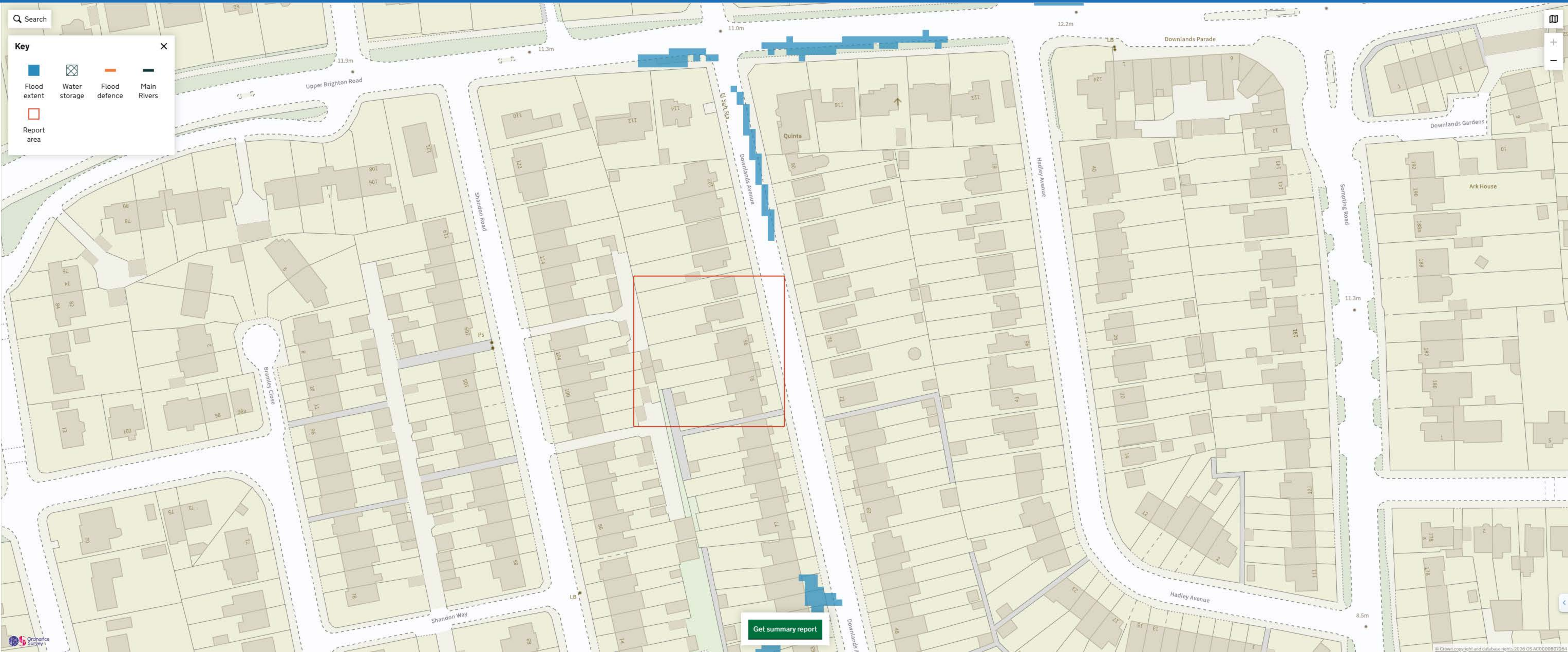
Map features

- Water storage
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- Main Rivers

Search

Key

Flood extent	Water storage	Flood defence	Main Rivers
Report area			



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- None

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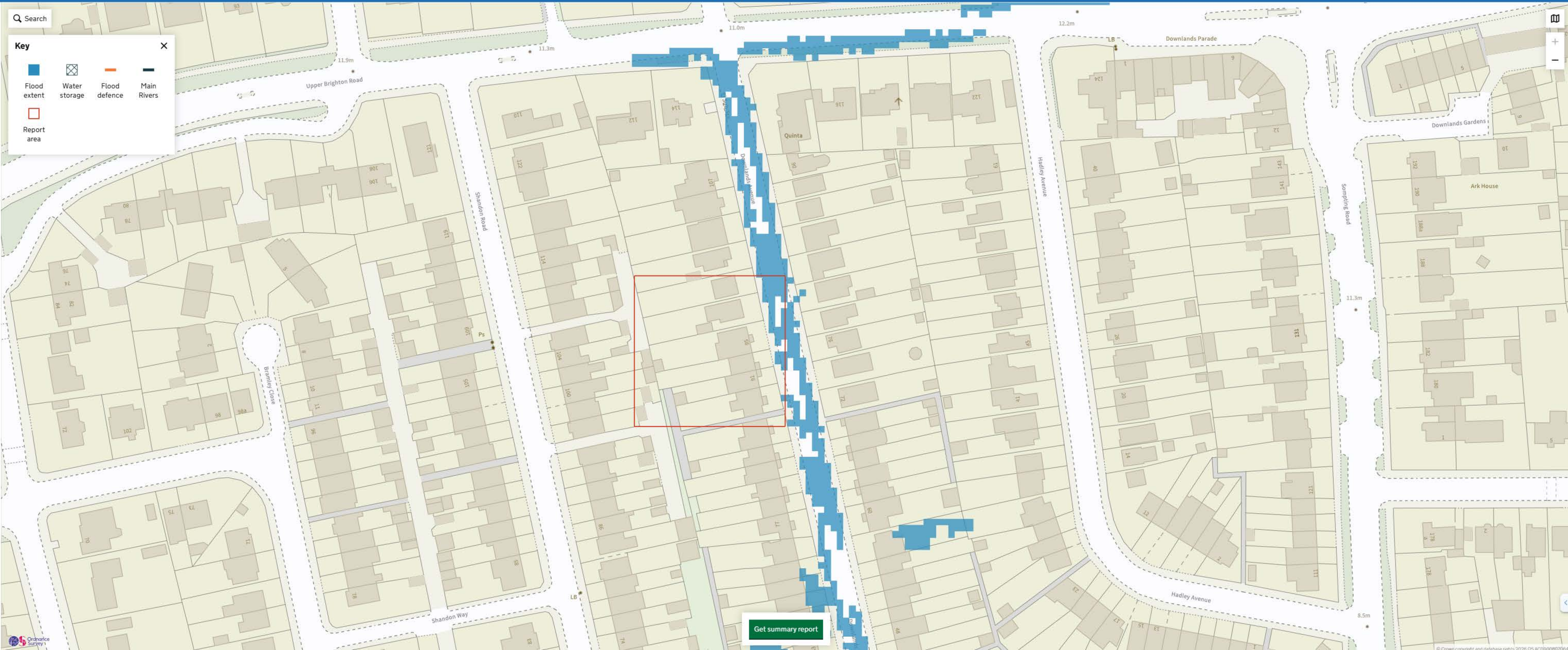
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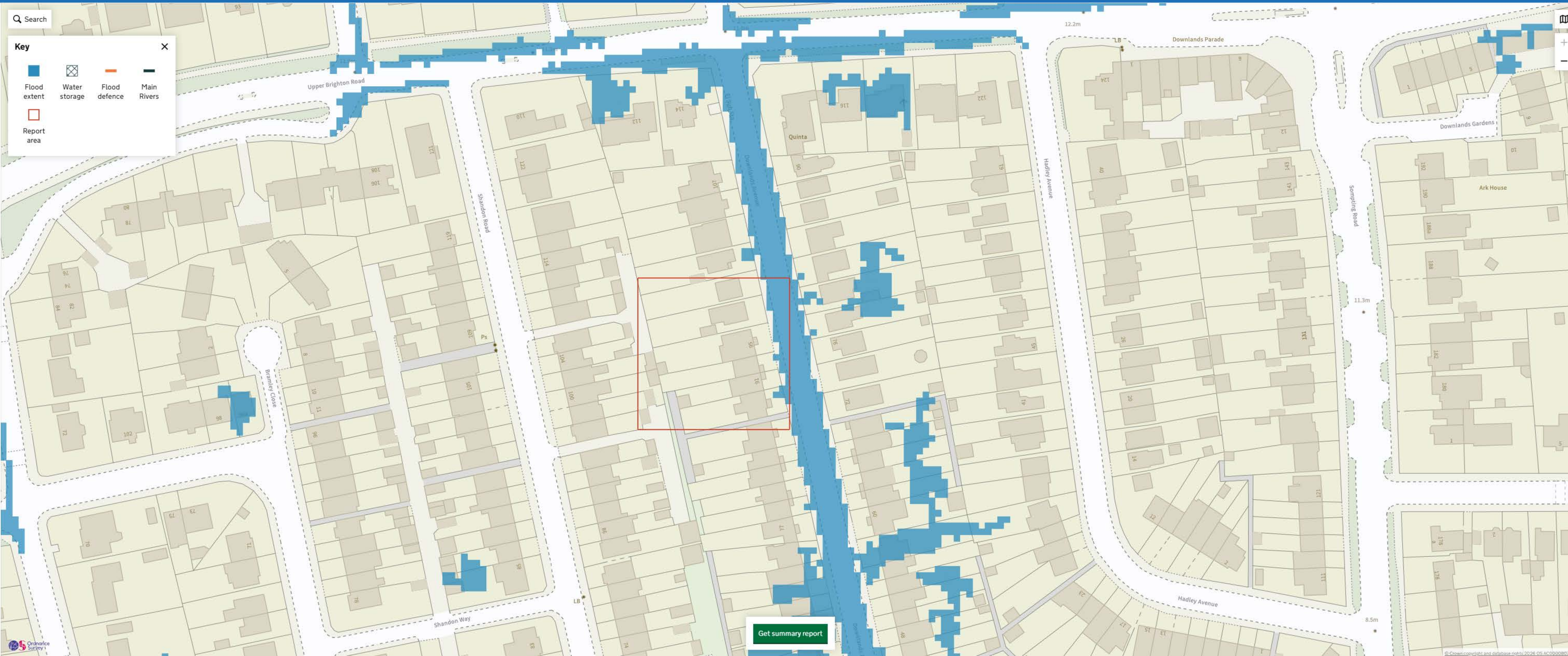
Map features

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- Flood extent
- Water storage
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Get summary report