



21, Shandon Road, Broadwater, Worthing, BN14 9DY
Flood Risk Assessment (FRA)

Site Address: 21 Shandon Road, Worthing, BN14 9DY

Development Description: Proposed 4m single-storey rear extension

1 Site description

1.1 Site address

21 Shandon Road, Worthing, West Sussex, BN14 9DY

National Grid Reference: TQ 14854 04656 (Easting 514854, Northing 104656)

1.2 Vulnerability classification

The proposed development is a single-storey domestic extension to an existing residential dwelling. Under Annex 3 of the NPPF, residential dwellings are classified as More Vulnerable. The extension does not introduce sleeping accommodation at ground floor level beyond that already existing and will be occupied by the same household. The vulnerability of users is not increased by the proposal.

1.3 Flood zone incompatibility

The site is located within **Flood Zone 1** (low probability of flooding from rivers or the sea), as defined by the Environment Agency's Flood Map for Planning. Table 2 of the PPG confirms that More Vulnerable development is appropriate in Flood Zone 1. There is no incompatibility.

1.4 Lifetime of development

The lifetime of the development is taken as **50 years** in accordance with PPG guidance, which is appropriate for a domestic extension.

1.5 Local Plan policies and SFRA recommendations

The site falls within the administrative area of Worthing Borough Council. The relevant strategic flood risk assessment is the Adur & Worthing Level 1 Strategic Flood Risk Assessment (July 2024).

The SFRA confirms that all development, regardless of flood zone or size, should have at least an initial assessment of flood risk, with a requirement for a site-specific FRA where surface water flood risk is identified. This FRA has been prepared in accordance with that requirement and with the Environment Agency's Standing Advice guidelines for minor extensions.

2 Assess flood risk

2.1 Existing site

The site currently comprises a semi-detached residential property with a small rear garden. The existing property is not subject to flooding from any source. Site levels are consistent with the surrounding roads and adjacent properties.

2.2 Fluvial flood risk

The site is not identified as being at risk from fluvial (river) flooding. There are no main rivers or ordinary watercourses on or immediately adjacent to the site. The nearest watercourses are located at a safe distance and do not pose a flood risk to the property.

2.2.1 Design flood event

N/A – site not within fluvial flood risk area.

2.2.2 Residual fluvial risk

N/A.

2.3 Tidal flood risk

The site is not identified as being at risk from tidal flooding. Worthing benefits from established coastal defences; however, the site is located sufficiently inland such that tidal flooding does not pose a risk now or within the lifetime of the development.

2.3.1 Design flood event

N/A.

2.3.2 Residual tidal risk

N/A.

2.4 Surface water flood risk

The site is not shown to be at significant risk from surface water flooding according to the Environment Agency's Risk of Flooding from Surface Water (RoFSW) mapping. The existing site drains satisfactorily via natural infiltration and the existing drainage network.

2.4.1 Design flood event

Surface water runoff from the proposed extension will be managed through a new soakaway to be installed as part of the development, ensuring no additional runoff is discharged to the public sewer network or surrounding land.

2.4.2 Residual risk

N/A – surface water flood risk is considered low and will be managed via sustainable drainage measures.

2.5 Sewer flood risk

There are no known records of sewer flooding affecting this property. The existing foul and surface water drainage connections are adequate for the proposed extension, and Southern Water has confirmed no capacity issues in the local network.

2.6 Groundwater flood risk

The British Geological Survey indicates that the site is not located within an area susceptible to groundwater flooding. Groundwater levels are not known to have caused flooding at this property historically.

2.7 Reservoir flood risk

The site is not located within an area identified as being at risk from reservoir flooding, as shown on the Environment Agency's reservoir flood maps.

2.8 Canals and other artificial sources of flood risk

No canals or other artificial water features are present within the vicinity of the site.

2.9 Coastal erosion risk implications on tidal flood risk

Coastal erosion does not affect this site. The Shoreline Management Plan for this stretch of coast does not identify any coastal erosion risk affecting inland residential areas of Worthing.

2.10 Interactions of various sources

No interactions between flood sources are applicable as the site is not at risk from any primary source of flooding.

2.11 Design flood level according to all the sources identified

No design flood level is applicable as the site is situated outside all identified flood risk areas.

2.12 Exception Test

The Exception Test is not required. The site is in Flood Zone 1 and the proposed development is compatible with the flood zone; therefore, the Exception Test does not apply as per Table 2 of the PPG.

2.13 Summary of flood risks

Sources of flooding that apply	Estimated flood level in the design flood	Estimated flood level in the residual risk event
Fluvial	N/A	N/A
Tidal	N/A	N/A
Surface water	N/A – low risk; managed via soakaway	N/A
Sewer	N/A	N/A
Groundwater	N/A	N/A
Reservoir	N/A	N/A
Artificial sources	N/A	N/A

3 Avoid flood risk

3.1 Evidence of the Sequential Test

The proposed development is a minor extension to an existing dwelling. Paragraph 175 of the NPPF and footnote 62 exempt minor development from the Sequential Test where the FRA demonstrates that the development can be made safe without increasing flood risk elsewhere. This FRA confirms that the proposed extension does not increase flood risk and is located in an area of very low flood risk.

3.2 Sequential Approach

The extension is located to the rear of the existing dwelling, which is itself situated in Flood Zone 1. No part of the development encroaches into any area of higher flood risk. The most vulnerable elements (habitable rooms) remain within the existing building footprint, and the extension does not introduce new vulnerability. The sequential approach is therefore satisfied.

4 Control flood risk

4.1 Proposed site levels

Finished floor levels (FFLs) of the proposed extension will match the existing finished floor levels of the main dwelling. No land raising or lowering is proposed. Existing ground levels will be retained. The FFL will be set a minimum of 150mm above external ground level to prevent ingress of surface water.

4.2 Flood flow route

No flood flow routes cross the site, given the absence of flood risk from all sources.

4.3 Existing or proposed flood risk management infrastructure

The following measures will be implemented as part of the development:

- Finished floor levels to match existing and therefore are no worse than current conditions
- Electrical sockets to be raised to minimum 600mm above FFL
- Concrete floors and use of resilient materials to allow quick reoccupation in the event of serious flooding (e.g., ceramic tiles, waterproof grout, stainless steel fixtures)

5 Mitigate flood risk

5.1 Risk to people

No risk to people is anticipated as the site is not within any identified flood risk area. The FRA demonstrates that the proposed extension does not increase flood risk.

5.2 Risk to property/building

No residual flood risk to the building is anticipated. As a precautionary measure, the property will be fitted with flood-resilient materials (as detailed in section 4.3) to ensure that even in a highly unlikely flood event, the property could be brought back into use quickly.

5.3 Risk to essential services

Electrical services will be raised to a minimum of 600mm above FFL in accordance with Building Regulations and good practice guidance. The existing sewer connection is adequate for the proposed extension.

5.4 Floodplain storage and conveyance compensation

Not applicable – the site is not located within the functional floodplain, and there is no loss of floodplain storage as a result of the proposed development.

5.5 Surface water management

All new surface water runoff from the proposed roof extension will be directed to a new soakaway to be installed within the rear garden. The soakaway will be designed in accordance with BRE Digest 365 and will accommodate the 1 in 100-year rainfall event (including a 40% allowance for climate change). No surface water will be discharged to the public sewer network.

6. Manage flood risk

6.1 Safe access and escape

Safe access and escape are available via the existing external door openings at the front of the property. The front of the property is at a low risk of flooding and provides direct access to Shandon Road, which is not known to flood.

6.2 Evacuation plan

In the highly unlikely event of a flood, evacuation would take place using the existing external site entrance/exit points at the boundary. The occupants would follow standard emergency procedures as advised by the Environment Agency's Floodline service (0345 988 1188).

6.3 Residual flood risk

No residual flood risk is identified. The development does not rely on any flood defence infrastructure for its safety, and no such infrastructure is proposed.

6.4 Betterment provision

The development does not require the Exception Test; however, the proposed sustainable drainage measures (soakaway) represent a betterment over the existing surface water management arrangements, which currently rely on infiltration without formal control.

7. Summary of measures

Measure	Avoid	Control	Mitigate	Manage
Finished floor levels match existing – no increase in risk	✓	✓	–	–
Electrical sockets raised to 600mm above FFL	–	✓	✓	–
Use of flood-resilient materials (concrete floors, tiles, stainless steel)	–	✓	✓	–
New soakaway to manage all roof runoff	–	✓	–	✓
Safe access/escape via front of property	–	–	–	✓
FRA demonstrates compatibility with Flood Zone 1	✓	–	–	–