

FLOOD RISK ASSESSMENT FOR 1 ST PAULS TERRACE LINEN STREET WARWICK CV34 4DX

February 2020

1. Description of development

The proposal is to erect a two-storey extension to provide additional living accommodation for an existing dwelling.

The proposed re-development lies in the centre of Warwick Town Centre near to the racecourse. The location is shown on map below.

The purpose of this flood risk assessment is to assess the potential for flooding as a result of the development proposal taking account of all reasonable mechanisms of flooding.

NPPF sets out key planning objectives in relation to land usage and flood risk management. This development is designed to be compliant with these requirements.



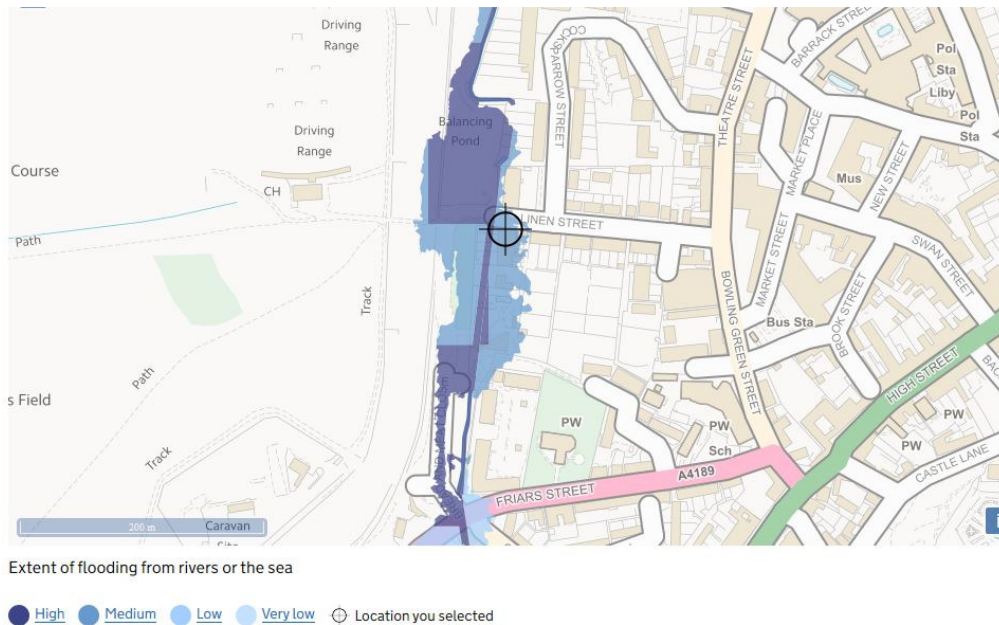
Aerial map indicating site location

1.2 Site location

The proposed development is located At 1 St Pauls Terrace, Warwick. The dwelling lies in HIGH RISK category for Surface Water flooding and MEDIUM RISK category for rivers or sea flooding, as identified in maps below.

2. Flood Zone – Rivers or sea

The site lies within a Flood Risk Area Medium, as indicated on the EA map below. This relates to risk from rivers.



FLOOD RISK MAP FROM RIVERS OR SEA

Definition

This flood risk summary is not property specific.

Medium risk means that each year this area has a chance of flooding of between 1% and 3.3%.

This information is suitable for identifying:

- which parts of towns or streets are at risk, or have the most risk?
- the approximate extent and depth of flooding
- It's likely to be reliable for a local area but not for identifying individual properties at risk.
- This service takes into account any flood defences.

The Environment Agency is responsible for managing the flood risk from rivers and the sea.

Tidal Risk.

The development is situated east of the ordinary water course known as Saltisford Brook, which runs through Warwick. The watercourse has its source from the River Avon nearby flowing in a Northerly direction. It eventually flows out to the Saltisford canal nearby.

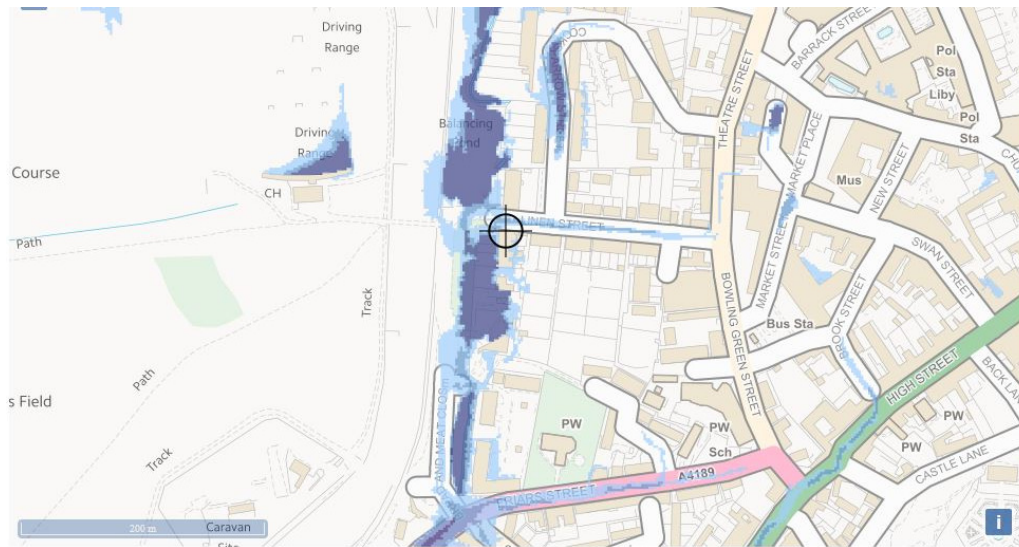
Fluvial Risk.

From records of surface water maps, the site is within area classed as medium risk, with possible surface water flooding from Western side.

Surface water from the development currently drains into the sewerage system.

2. Flood Zone – Surface Water

The site lies within a Flood Risk Area High, as indicated on the EA map below. This relates to risk from surface water.



Extent of flooding from surface water

● High ● Medium ● Low ○ Very low ○ Location you selected

FLOOD RISK MAP FROM SURFACE WATER

Definition

This flood risk summary reports the highest risk from surface water within a 20m radius of this property. High risk means that each year this area has a chance of flooding of greater than 3.3%. This information is suitable for identifying:

- which parts of counties or towns are at risk, or have the most risk
- the approximate extent and depth of flooding
- It's unlikely to be reliable for a local area and very unlikely to be reliable for identifying individual properties at risk.
- Surface water flooding, sometimes known as flash flooding:
 - happens when heavy rain cannot drain away
 - is difficult to predict as it depends on rainfall volume and location
 - can happen up hills and away from rivers and other bodies of water
 - is more widespread in areas with harder surfaces like concrete

Lead local flood authorities (LLFA – Warwickshire County Council) are responsible for managing the flood risk from surface water and may hold more detailed information.

3. Flood Risk Vulnerability

The Environment Agency consultation matrix confirms they do not wish to be consulted on this type of development. The occupants of dwelling will be no more vulnerable than they are now. The development is classed as a minor extension (household extension of less than 250 square meters) by the Environment Agency. This minor extension is not in an area with increased flood risk as a result of multiple minor extensions in the same area. In line with Environment Agency advice, section 4 of this report outlines how additional flood resilient measures have been incorporated.

4. Mitigation Measures

In compliance with the standing advice from the Environment Agency's FRSA Householder and other minor extensions in Flood Risk zone 3, the extension will be no lower than the existing levels and flood proofing of the extension will be incorporated in the design and construction.

- The internal floor level will be the same as the existing house and is 150mm above external ground floor level.
- All wiring, switches and socket outlets will be positioned min 1500mm above the internal floor level.
- Floor will be a solid construction and incorporate a primed sealer
- External ventilation outlets, utility points and air bricks fitted with removable waterproof covers.
- Utility meters to be situated at first floor level.
- Non-return valves fitted to all drainage outlets.
- Anti-syphon valves fitted to all toilets
- Walls to have lime plaster finish internally.
- Early flood criteria warning in place, comprising:

Due to site residing within Flood Zone 3 and as such, where available, it is recommended that the site owner, management staff and residents subscribe to the EA's Flood Warning/Alert Service.

Safe refuge from flooding can be achieved via internal access to the upper floors of the proposed dwelling, or by leaving the site and heading away from the source of flooding.

The site is located within an EA Flood Warning Service Area and it is recommended that the site owner(s) sign up to this service, if possible.

Due to the nature of fluvial flooding, it is advised that site users evacuate the property before flooding occurs within the area to reduce the strain on emergency services.

On receipt of a severe flood warning site users should evacuate the property if safe to do so and return once the warning/alert has been lowered.

If flooding has already occurred before prior evacuation, it is advised site users return to the property and await evacuation. No evacuation should be sought if flood depths exceed 25cm, evacuation should only be sought with the assistance of the emergency services in these circumstances. Residents should move to the upper floors of the property to be located within an area of safe refuge, well above modelled flood levels.

The EA operate a 5 day county-wide forecast in relation to flood risk. It is recommended that this service is regularly checked to ensure occupants/residents are aware of any possible risks: <https://flood-warning-information.service.gov.uk/5-day-flood-risk>.

5. Depths and velocities of surface water flooding.

To demonstrate that the depths and velocities of surface water flooding will allow safe access and egress for site users, we have attached Table 13.1 from the Environment Agency report FD2320, which when read in conjunction with the long-term flood risk maps, indicates the proposal falls within the Low Risk category. *Danger for Some*

The velocity taken from maps indicate a depth of below 300mm with a velocity of 0.25m/s. The low

risk maps are illustrated after Table 13.1

Table 13.1 Danger to people for different combinations of depth and velocity

Velocity (m/s)	Depth of flooding (m)												
	0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.80	1.00	1.50	2.00	2.50	
0.00				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
0.10				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
0.25				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
0.50				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
1.00				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
1.50				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2.00				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2.50				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3.00				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3.50				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
4.00				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
4.50				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
5.00				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

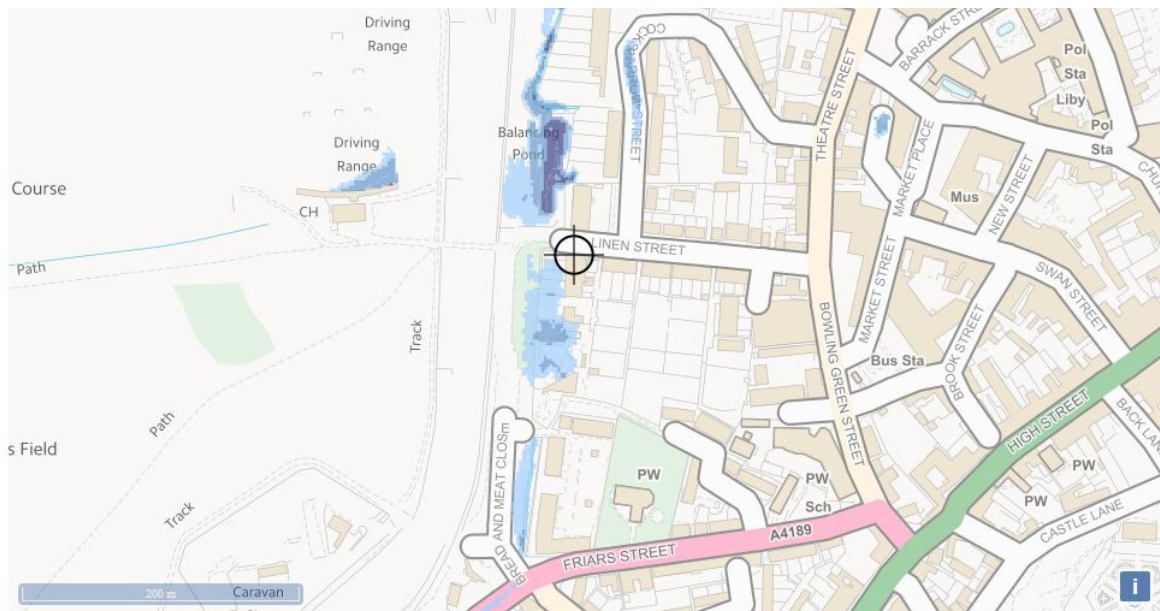
Key:

- Danger for some
- Danger for most
- Danger for all

For details regarding the danger classifications of ‘danger to all’, ‘danger to most’ and ‘danger to some’ reference should be made to HR Wallingford (2005) *Flood Risks to People Phase 2, The Flood Risk to People Methodology*, Environment Agency\Defra R&D Technical Report FD2321/TR1, March 2005. However, the following provides a very simplified guide as to the groups of people that should be considered as falling into these danger classifications:

- Danger for some – includes children, the elderly and the infirm.
- Danger for most – includes the general public
- Danger for all – includes emergency services

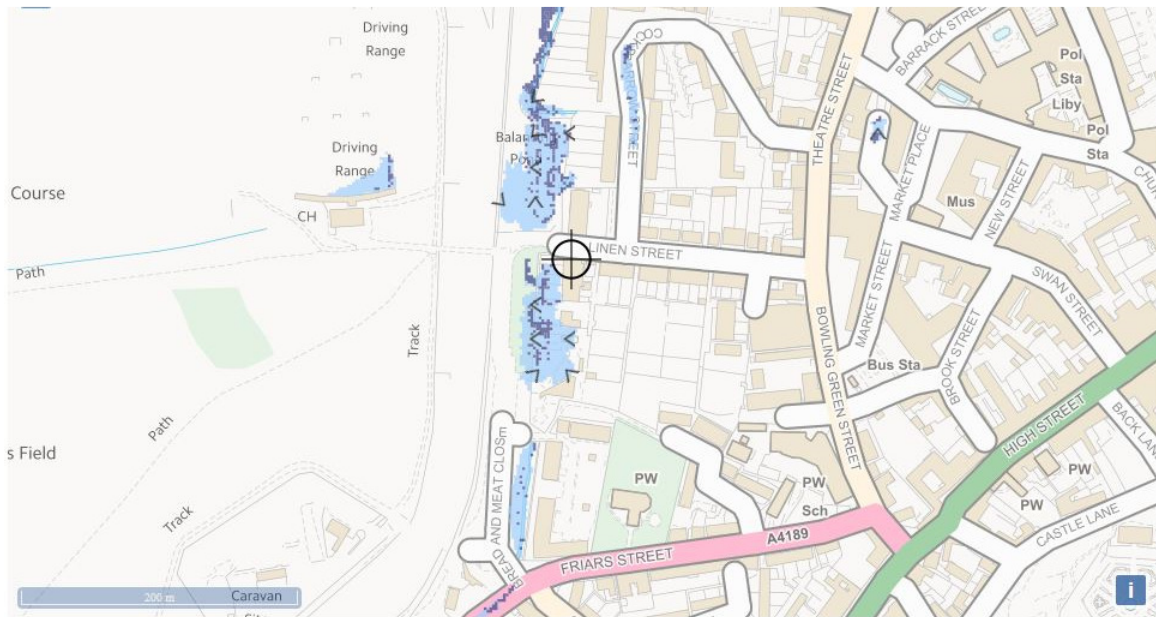
TABLE 13.1



Surface water flood risk: water depth in a high risk scenario
 Flood depth (millimetres)

- Over 900mm
- 300 to 900mm
- Below 300mm
- Location you selected

LOW RISK DEPTH – PALE BLUE INDICATES BELOW 300mm



Surface water flood risk: water velocity in a high risk scenario
 Flood velocity (metres/second)

Over 0.25 m/s Less than 0.25 m/s Direction of water flow Location you selected

LOW RISK VELOCITY – PALE BLUE INDICATES LESS THAN 0.25m/s.

6. Conclusion

The current householders are not disabled or infirm, there are no small children currently living in the house.

The Occupants are therefore no more vulnerable as a result of the proposed extension.

Following the guidelines contained within the NPPF, the proposed development is considered to be suitable assuming appropriate mitigation (including adequate warning procedures) can be maintained for the lifetime of the development.

End.