



Flood Emergency/Evacuation Plan



Flood risk, water and environment

AEG6137_RH13_Patridge Green_07

Site Address: Lock House

Lock Lane

Patridge Green

RH13 8EG

UK Experts in Flood Modelling, Flood Risk
Assessments, and Surface Water Drainage Strategies



Flood risk, water and environment

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Site Location: Lock House, Lock Lane, Patridge Green, RH13 8EG

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1. Introduction

- 1.1. Aegaea were commissioned to undertake a Flood Emergency/Evacuation Plan (FEP) to facilitate a planning application for a proposed development. This FEP has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance.
- 1.2. This FEP is intended to address the requirements set out by the LPA. The LPA have provided the following comments in relation to the development;

Given the site access route across a river and in flood zone 3, a sequential test is required along with a Flood Emergency Plan which details safe alternative site access and egress for occupiers and emergency vehicles.

Site Overview

- 1.3. The address of the proposed development is the Lock House, Lock Lane, Patridge Green, RH13 8EG (Figure 1).

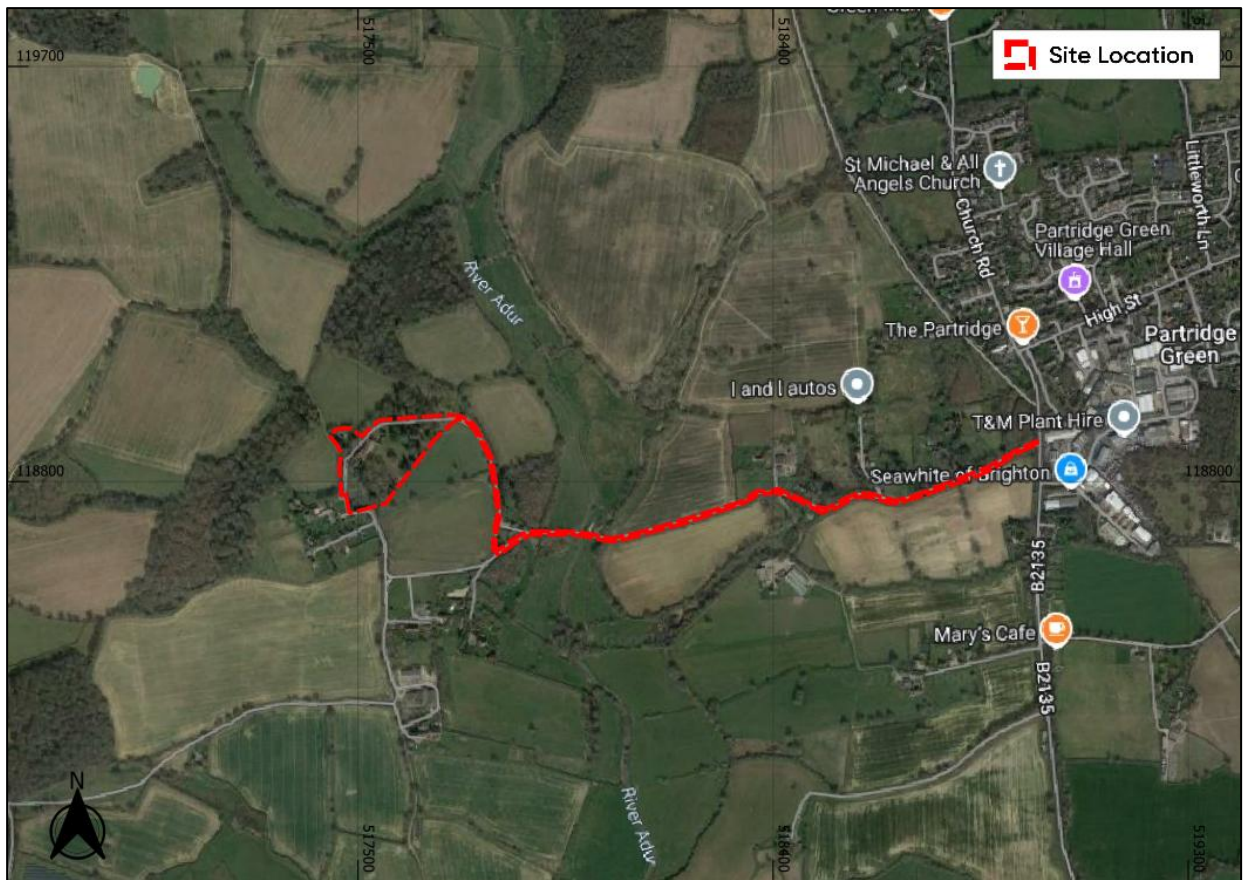


Figure 1: Site Location (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0).

- 1.4. It is understood that the proposed development is for a change of use from an existing building into 5 no. residential units.
- 1.5. This FEP should be read in conjunction with the Flood Risk Assessment.

Requirement for a Flood Emergency/Evacuation Plan

- 1.6. Guidance set out by the Association of Directors of Environment, Economy, Planning & Transport (ADEPT) notes that a FEP should be provided as part of the FRA, or as a separate document accompanying the FRA, if relevant pedestrian and / or vehicular access and escape routes from a site would be affected during:
 - a design flood from any source (with an appropriate allowance for climate change) with any existing flood risk management structures or features operating as intended; or
 - a design flood from any source (with an appropriate allowance for climate change) with a failure of any relevant flood risk management structures or features.

- 1.7. The key aim of the FEP is to provide the regulators and operator with clear information to show how flood risk has been appropriately considered and to set out clear guidelines as to how the site should be evacuated in the unlikely event of a flood emergency.
- 1.8. The FEP should be considered a live document and is therefore subject to update / review whenever there is a change to any of the contact numbers, names or roles set out within the FEP.
- 1.9. The initial FEP should be approved by Horsham District Council, as the Local Planning Authority (LPA). All subsequent updates and reviews of the FEP shall be documented and recorded to ensure that an up-to-date version of the FEP is available at all times.

2. Flood Risk Summary

What is the Risk?

- 2.1. A full Flood Risk Assessment provides a detailed assessment of flood risk. However, a list of key bullet points provided are as follows:
- The main building is located within Flood Zone 1; that is, land assessed as having a less than 1 in 1,000 (0.1%) annual probability of flooding from fluvial and tidal sources.
 - The main building footprint is at 'Very Low' risk of surface water flooding based on EA's Flood Risk from Surface Water mapping.
 - The surrounding area is located within Flood Zone 2 and 3, including the wider redline boundary.

Safe Access/Egress

- 2.2. The requirements for safe access and egress from new developments in flood risk areas are as follows, in decreasing order of preference:
- Safe dry route for people and vehicles;
 - Safe dry route for people;
 - If a dry route for people is not possible, a route for people where the flood hazard (in terms of depth and velocity of flooding) is low and should not cause a risk to people; then,
 - If a dry route for vehicles is not possible, a route for vehicles where the flood hazard (in terms of depth and velocity of flooding) is low to permit access for emergency vehicles. However, the public should not drive vehicles in floodwater.
- 2.3. Where a dry route is not possible and a route with low flood hazard is identified, the route should not have any service covers that could be removed, or other underwater hazards. It is often difficult to see underwater hazards even in shallow water, particularly at night or if the water is silty.
- 2.4. Analysis in terms of fluvial and pluvial flooding to the potential evacuation route has been outlined below.

Fluvial

- 2.5. As shown on Figure 2, the fastest and route out of the area, that is least affected by the Flood Zone 2 and Flood Zone 3 extents, is to travel generally in a northwest direction from Lock House. The route travels north on Clothalls Lane, through approximately 25m of Flood Zone 2 (see Figure 2 insert map). Once this is passed, the route is located wholly in Flood Zone 1. From Clothalls Lane, the evacuation route travels west on Bassels Lane, which connects to the A24 which provides connections to the wider area.

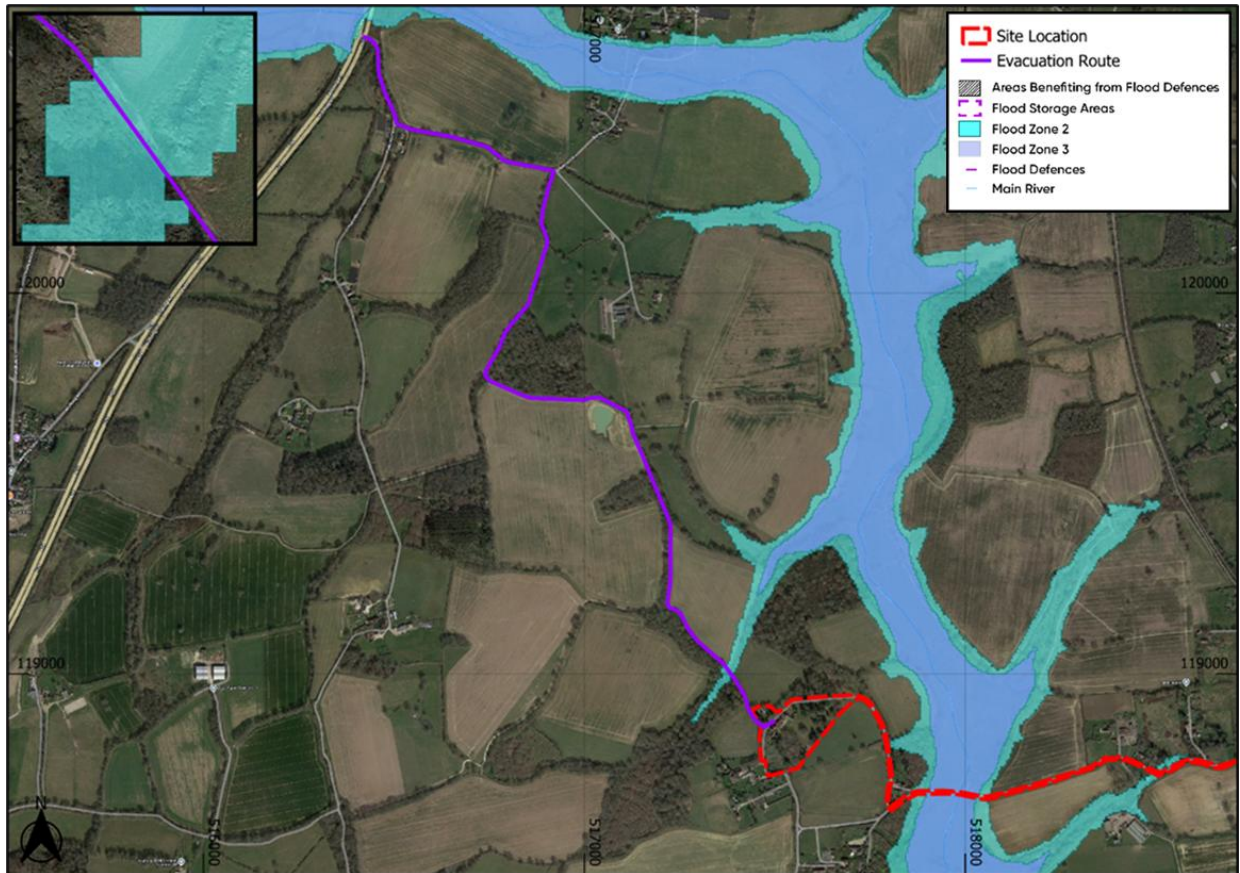


Figure 2: Evacuation Route Overlain with Flood Zones (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

Modelled Data Analysis

- 2.6. The site is located in the Adur and Ouse Management Catchment, which has updated central peak flow river allowances of: 16% for the 2020s, 18% for the 2050s, and 37% for the 2080s. As the development consists of a 'More Vulnerable' use, the peak flow allowance of 37% for the 2080s would be required for fluvial flood flows.

- 2.7. It is noted that the modelled data provided by the EA (Upper Adur Climate Change Modelling, 2016) did not contain the 1 in 100 +37% CC event data. As such, the +35%CC allowance data has been analysed given that this is the best available data for the site and consists of the nearest estimate in terms of climate change allowances. The EA data did not contain any hazard ratings for any of the return periods, as such the modelled flood depths have been used to analyse the risk along the evacuation route.
- 2.8. The route is affected by maximum modelled flood depths of 0.32m (Figure 3). This data shows the modelled depths at the peak of the 1 in 100 +35%CC fluvial event. The evacuation route is affected by flooding approximately 190m from Lock House and the occupants can be outside of the modelled flood depths approximately 215m from the development. Past the modelled extent the evacuation route is not affected.

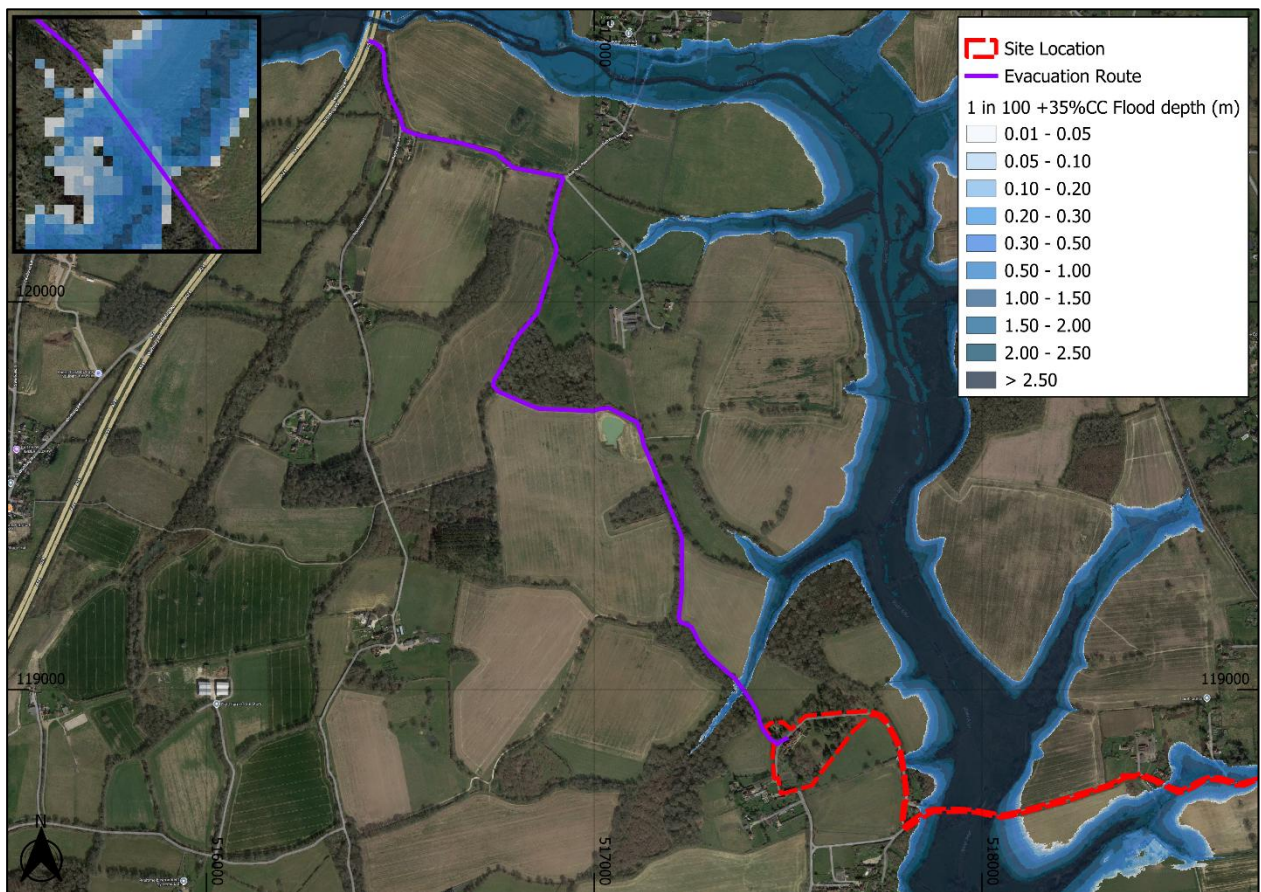


Figure 3: Modelled Depths – 1in100 +35%CC year (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

- 2.9. It is noted that the site is in the Environment Agency 'River Adur West Branch' Flood Alert service area. This service allows site owners to register an address along with contact details so that, in

the event of a flood being forecast, they are sent an alert. The EA aim to provide a minimum of 1 to 2 hours of lead time for Flood Warnings in fluvial areas and the EA aims to provide between 2 and 12 hours lead time between a Flood Alert being issued and possible flooding occurring.

- 2.10. Given the data shows the modelled depths at the peak of the 1 in 100 +35%CC fluvial event (greatest depths), the distance from the building to outside of the modelled flood extent is approximately 215m, and the Flood Alert Service provided between 2 and 12 hours lead time between a Flood Alert being issued and possible flooding occurring, prior evacuation can be considered possible.
- 2.11. As such, it is recommended that the client sign up to the EA Flood Alert Service 'River Adur West Branch'. Once the Flood Alert is received the occupant should evacuate immediately.
- 2.12. If prior evacuation cannot be made, then refuge should be taken within the proposed development due to it being within Flood Zone 1.

Pluvial

- 2.13. As shown on Figure 4, the fastest and route out of the area, is to travel generally in a northwest direction from Lock House. The route travels north on Clothalls Lane, and west on Bassels Lane, which connects to the A24 which provides routes to the wider area.

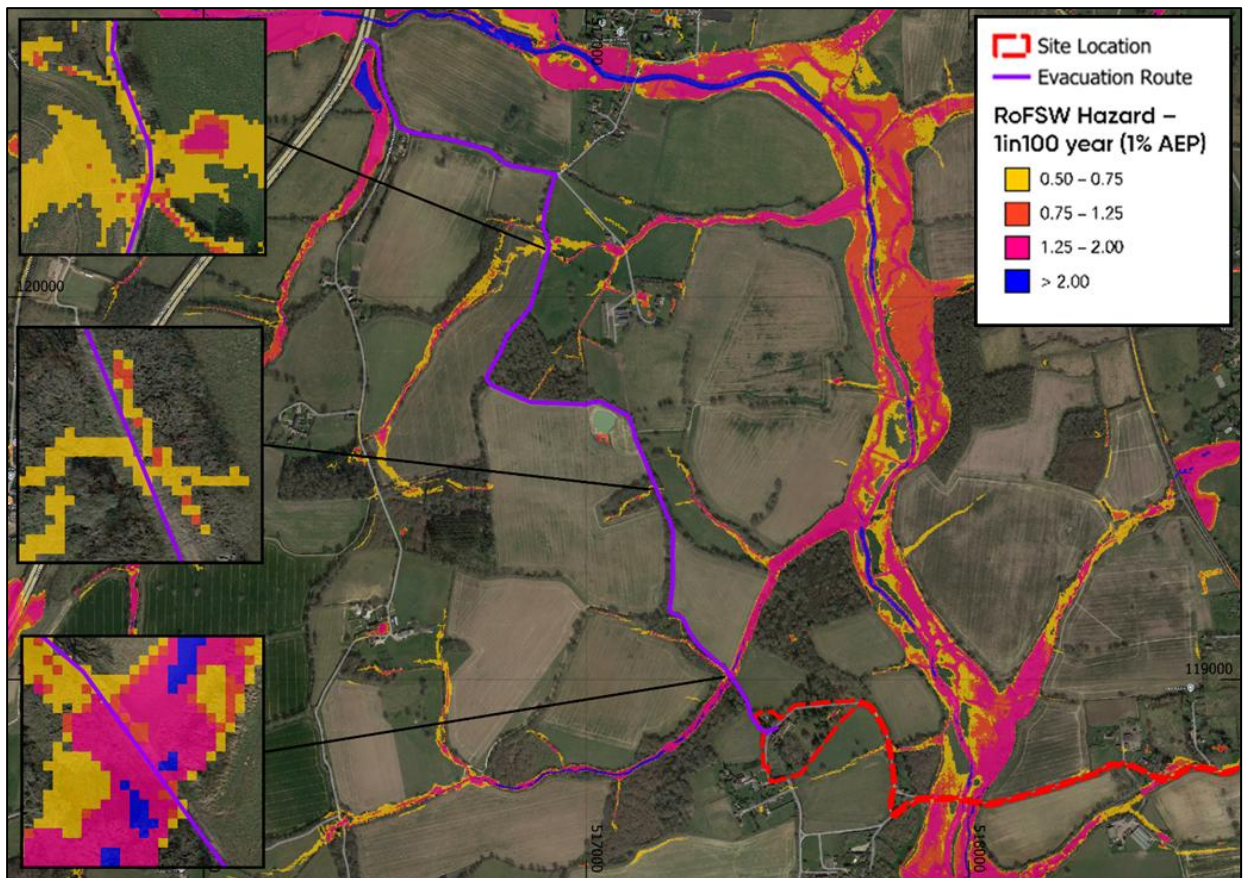


Figure 4: EA Surface Water Flood Risk Mapping 1 in 100 Year Flood Hazard (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

- 2.14. Pluvial flooding affects the evacuation route on three different sections of the proposed evacuation path. The first affected section, approximately 190m from Lock House, the hazard rating reaches between 1.25 – 2.00. However, once crossed the route is low to moderate hazard/ outside of the hazard extent. The evacuation route is affected by a hazard rating of between 0.50 – 0.75, approximately 780m from Lock house along the evacuation route, and is affected a hazard rating of between 0.75 – 1.25 approximately 1760m from Lock house along evacuation route.
- 2.15. It is recommended that the occupants of the dwellings should monitor Met Office Weather Warnings to be prepared for extreme weather events. Once the Met Office Weather Warnings are received the occupant should evacuate immediately.
- 2.16. It is noted that, the proposed development is not affected by modelled pluvial extents up to and including the 1 in 1000 year. As such, upon receipt of the Met Office Weather Warnings, if evacuation cannot be made then then refuge should be taken within the development.

3. Flood Emergency/Evacuation Plan (FEP)

Summary

- 3.1. Given the modelled flood risk to the surrounding area, prior evacuation of the site is recommended to reduce the risk to life of occupants/ site users but also reduce the strain on the emergency services.
- 3.2. Prior evacuation of the site should be sought as soon as a Flood Alert is issued by the Environment Agency.
- 3.3. This section therefore sets out the trigger events for implementing the FEP, who is responsible for what actions, and what procedures should be followed prior, during and after a flood event.

EA Flood Warnings and Met Office Weather Warnings

- 3.4. All management occupants should sign up to the EA Flood Alert Service for the "River Adur West Branch"¹.
- 3.5. This service allows dedicated flood wardens to register an address, which is at risk of flooding, along with contact details so that in the event of a flood being forecast, the management staff will be sent an alert directly to their chosen method of contact. All flood wardens and management staff should sign up to this and make this service available to all future management staff/flood wardens where applicable.
- 3.6. EA aim to provide a minimum of 2 to 12 hours of lead time for Flood Alert in fluvial areas². The area surrounding Lock House is considered to be at risk from fluvial flooding. Due to the short distance in the until the occupant is outside of the flood extent (approximately 215m), it is considered that the prior evacuation could be made upon receipt of flood alerts.

¹ <https://www.gov.uk/sign-up-for-flood-warnings>

² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/297923/Flood_Warning_-_Data_Integrity_Guide_v2_0.pdf

- 3.1. It is recommended that the occupants of the dwellings should monitor Met Office Weather Warnings to be prepared for extreme weather events. Once the Met Office Weather Warnings are received the occupant should evacuate immediately.

Trigger Events

- 3.2. Three trigger stages have been identified, namely,
- green alert (flood wardens to implement a review of the FEP procedures),
 - amber alert (state of readiness);
 - or issue a red alert (site evacuation).
- 3.3. Environment Agency flood warnings³ should be used to set evacuation triggers. There are three levels of flood warning:
- EA Flood Alert.
 - EA Flood Warning.
 - EA Severe Flood warning.
- 3.4. Flood wardens/management staff should follow the instructions in Table 1. The proposed flood evacuation procedures outlined in Table 1 should be reviewed on a regular basis.

Table 1: Evacuation Triggers and Procedures

Warning trigger	Trigger stage	Procedures
	Green Alert - Review FEP	Green Alert represents a state of readiness ahead of a potential flood situation. • Check your flood risk: https://check-for-flooding.service.gov.uk/alerts-and-warnings • Keep up to date with the latest situation - call Floodline on 0345 988 1188 or follow @EnvAgency and

³ <https://check-for-flooding.service.gov.uk/alerts-and-warnings>

Warning trigger	Trigger stage	Procedures
EA Flood Alert <i>A flood alert means you need to prepare, flooding is possible.</i>		#floodaware on X (formerly Twitter) for the latest flood updates. • Ensure residents are aware of the situation and know what to do should the situation escalate. • Have a bag ready with vital items like insurance documents and medications in case you need to leave your home. • Check you know how to turn off your gas, electricity and water mains supplies. • Plan how you'll move family and pets to safety.
EA Flood Warning <i>A flood warning means you need to act, flooding is expected.</i>  FLOOD WARNING	Amber Alert	Amber Alert means you should be prepared to act if necessary, ahead of a potential flood situation. • Move vehicles to higher ground if it's safe to do so. • Secure any materials or large loose items that may float and cause damage during a flood. • Move family and pets to safety. • Turn off gas, electricity and water supplies if it's safe to do so (never touch an electrical switch if you're standing in water)
 SEVERE FLOOD WARNING EA Severe Flood Warning <i>A severe flood warning means there is danger to life, you must act now.</i>	Red Alert	Red Alert means that you must act. • Call 999 if you're in immediate danger. • Follow advice from the emergency services and evacuate if you're told to do so. • Avoid driving or walking through flood water: just 30cm (1 foot) of fast flowing water could move your car and even shallow moving water can knock you off your feet. It may also contain heavy debris, sharp objects, open manhole covers, sewage and chemicals. • Make sure you have an emergency kit including a torch, spare batteries, mobile phone and charger, warm clothes, important numbers like your home insurance, water, food, first aid kit and any medicines and baby care items you may need. • Alert neighbours and offer help if it's safe to do so.

Warning trigger	Trigger stage	Procedures
		Dwellings should not be re-entered until flood warning has been lifted or unless instructed by emergency services.

Responsibilities

- 3.5. It is the responsibility of the homeowner/landlord/management company to communicate this FEP to residents, occupants and visitors.
- 3.6. It is the responsibility of the individual property owners to make the FEP procedures available and communicated to tenants where appropriate. Where properties are rented, the owners should ensure the occupants have access/ means to receive Flood Warnings from NRW.
- 3.7. It is the responsibility of the individual occupants/residents to implement the FEP at the trigger event of receiving a Flood Warning or Met Office Weather Warning.
- 3.8. Where possible, occupants should seek to coordinate their evacuation of the site with the neighbouring buildings on the site. This is to keep as many people evacuating the area to Flood Zone 1 together as possible. Additional strain would be placed on the emergency services if multiple smaller groups of people were trying to evacuate an area and became stranded.

Preparation for Flood Events

- 3.9. There are a multitude of ways that property owners can prepare for the potential of a flood event. These are set out as follows:

- Important documents (such as passports and insurance certificates) can be placed into sealable polythene bags to protect them from flood water or can be placed in a high and secure location.
- Ensure that the insurance policy for the property covers for flood damage.
- Sign up to the Environment Agency's flood alert and warning service which will notify you by telephone/email/SMS when flooding is likely.
- Identify who can assist during a flood event – friends or family that can help you store possessions and stay somewhere safe when flooding is imminent. Similarly, you can look out for friends, neighbours and family who may need help themselves during a flood event.
- If there are pets within the residence, identify somewhere safe they can be taken during a flood event.
- If there are cars within the residence, identify somewhere safe they can be moved prior to a flood event. Do not attempt to move your car if it is already in flood water. Lock House and parking is located within Flood Zone 1.

3.10. In addition, it is advised you prepare a flood kit which can be quickly accessed when flooding is imminent to equip you with everything you may need. You should consider the following:

- Important documents such as passports and insurance certificates – if these cannot be safely stored within the property it would be advised to take them with you as they are expensive to replace.
- Torch – In the case that it floods at night and power is affected (Wind Up torch is preferred)
- Radio – A wind up or battery radio will help to monitor local news and weather broadcasts for the latest flooding situation.
- Batteries – Have spare batteries in order to power the torch and radio should it be required.
- Bottled Water – Water from the tap could become contaminated during a flood so bottled water should be available.

- First Aid Kit – Keep a first aid kit to hand in case of minor injuries. Put any prescription medication in your kit so that you can have easy access to it.
- Mobile Phone – Keep a fully charged mobile with you so that you can contact people in an emergency or call for help. If the phone has internet access you can use it to monitor the local news and latest flood situation.
- Waterproof Clothing – Keep wellies and rubber gloves available should you need to enter the flood water.
- Non-Perishable or Tinned Food

What to Do to Prepare/ During Flooding

- 3.11. This FEP should be communicated to and provided to all property owners and tenants. The summary (Section 4) should be displayed in communal areas and also distributed to occupants and tenants through deeds/ rental agreements/ hard copy leaflet drop.
- 3.12. The main priority during a flooding event is the safety of all site users and residents. As such a key part of protecting everyone is making sure that you are fully aware of the ongoing situation and know where to access the most up to date information. Below is a list of advised actions that should be carried out during a flood event:
- Where possible, switch off all electrical and gas appliances at the mains.
 - Monitor websites distributing flooding information including www.environment-agency.gov.uk
 - Monitor local press, radio, and regional TV.
 - Pay close attention to the advice given by emergency services and local authority. Take all of the warnings seriously and respond quickly.
 - Do not drive through flood water. Less than two feet of flood water can be enough to float a vehicle.
 - Avoid contact with flood water when possible. Flood water is typically contaminated with sewage and other hazardous substance. Wear rubber gloves and boots and wash thoroughly if you do come into contact with flood water. Do not attempt to swim through flood water.

- Do not enter a property that has been flooded unless you are sure it is structurally safe. If in doubt, have the property checked by a professional.
- Do not turn on your electrical or gas supplies until they have been checked by a professionally qualified electrician or engineer. Take care of gas leaks – do not smoke or use open flames.
- Do not use petrol or diesel generators indoors as they produce carbon monoxide.

Proposed Flood Evacuation Route and Access/ Egress

- 3.13. It may not be possible to ensure that the designated evacuation route is safe from flooding.
- 3.14. Due to the short distance in the until the occupant is outside of the flood extent (approximately 215m) and the Flood Alert Service provided between 2 and 12 hours lead time between a Flood Alert being issued and possible flooding occurring, it is considered that the prior evacuation could be made upon receipt of EA Flood Alert.
- 3.15. Nevertheless, it is highly recommended that upon receipt of an EA Flood Alert occupants should evacuate the site.

Places of Safe Refuge

- 3.18. Once occupants and site user have followed the proposed evacuation route to Flood Zone 1, they should seek alternative accommodation arrangements in Flood Zone 1.
- 3.19. This may require seeking accommodation with nearby relatives or friends. Alternatively, this may require evacuees to seek accommodation in holiday lets or hotels.

On Site Safe Refuge

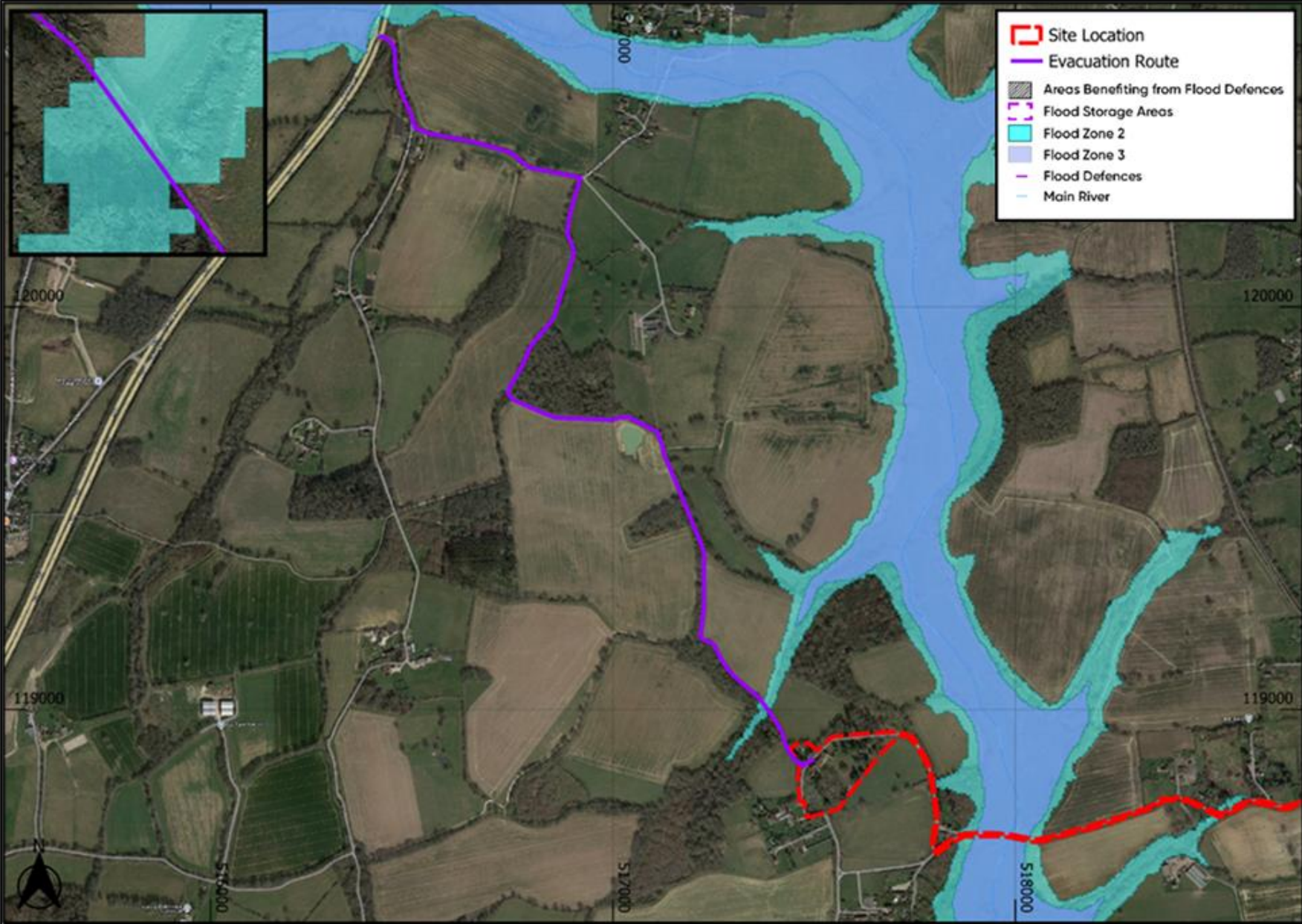
- 3.20. It is possible that occupants can be within the development during a flood event due to it being within Flood Zone 1. However, it is stressed that prior evacuation upon receipt of a flood warning should be considered the best option. Due to the short distance in the until the occupant is outside of the flood extent (approximately 215m) and the Flood Alert Service provided between 2 and 12 hours lead time between a Flood Alert being issued and possible flooding occurring, it is considered that the prior evacuation could be made upon receipt of flood warnings.
- 3.21. If flooding has already occurred along the proposed evacuation route or users have not evacuated within 10 hours of an EA Flood Alert being issued, it may not be safe for evacuees to

enter flood water. In such a scenario, to mitigate the risk to life, safe refuge must be sought within the property itself, and the emergency services must be notified.

- 3.22 However, it is extremely important to note that prior evacuation should be sought before flooding occurs.
- 3.23 Do not wait for flooding to occur to react. It should be reiterated that prior evacuation is the preferred option and safe refuge on site should only be sought in the very worst case scenario where flooding occurred, and the refuge on site is to mitigate the risk to life.

4. Summary for Site Occupants and Users

Property:	Lock House, Lock Lane, Patridge Green, RH13 8EG		
Risk summary:	The entirety of the building is located within Flood Zone 1; that is, land assessed as having a less than 1 in 1,000 (0.1%) annual probability of flooding from fluvial and tidal sources. The building footprint is at 'Very Low' risk of surface water flooding based on EA's Flood Risk from Surface Water mapping. The surrounding area is located within Flood Zone 2 and 3. Prior evacuation of the site should be sought as soon as a Flood Alert is issued by the Environment Agency.		
Preparedness:	Recommended evacuation route:		
- Prepare a flood kit (first aid, medication, torch, warm clothes, wellington boots, long-life food) - Make a list of emergency contacts and consider alternative options for accommodation. - Review FEP periodically - Sign up to the EA Flood Alert Service			
Flood warning actions:			
FLOOD ALERT Flooding is possible, be prepared.	You should check the details of the forecast and consider taking steps to minimise impacts for you and your household. This can include moving important or sentimental items to a higher location, and ensuring your flood kit is up-to-date in case evacuation is necessary. Be prepared to evacuate if required.		
FLOOD WARNING Flooding is expected – immediate action is required.	Continue to monitor the forecast. Turn off power, gas and water if safe to do so. Grab your flood kit. If flooding has not already occurred, evacuate your property following the route indicated to a safe area. <u>Do not wait for a severe warning to act</u> , evacuated your property following the agreed evacuation route. Fluvial: Travel north on Clothalls Lane, though approximately 25m of Flood Zone 2. Once this is passed the route is only in Flood Zone 1. From Clothalls Lane, travel west on Bassels Lane, which connects to the A24 which provides routes to the wider area Pluvial: Travel north on Clothalls Lane, and west on Bassels Lane, which connects to the A24 which provides routes to the wider area. These routes should be used by site users unless advised otherwise by emergency flood responders.		
SEVERE FLOOD WARNING Severe flooding with danger to life	If flooding has not yet occurred and you have yet to evacuate, you should evacuate your property following the route indicated if safe to do so. Floodwater can be dangerous, not only hide trip and fall hazards. Do not attempt to walk through floodwater - if the evacuation route is flooded, remain within your property and seek assistance from emergency services. Follow the advice of emergency flood responders		
The emergency services (blue light responders) become the first responders during a flood event. The instruction they give should be followed at all times, even if it contradicts the details of this FEP report.			
Flood wardens and management staff should be signed up to the following: Environment Agency flood warning service https://www.gov.uk/sign-up-for-flood-warnings			



Seek prior evacuation as soon as a Flood Warning is issued. If flooding has already occurred, do not attempt to walk through floodwater, seek refuge on an upper floor of the building.

IN AN EMERGENCY, CALL 999.

Emergency Contacts:		Emergency cut-off locations:	
Electricity provider:		Electricity cut-off location:	
Gas provider:		Gas cut-off location:	
Water Company:		Water cut-off location:	
Insurance Company:		Insurance policy number:	
Managing Agent:		Location of Flood Kit:	

