



Project Groundwater
Are you flood resilient?



**RESILIENCE
& FLOOD RISK**

Flood Experience Questionnaire Summary Report

Resilience workstream

August 2026



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Project Groundwater
Are you flood resilient?

Project Groundwater is one of the Department for Environment, Food and Rural Affairs £200 million Flood and Coastal Innovation Programmes, which are managed by the Environment Agency. The programmes will drive innovation in flood and coastal resilience and adaptation to a changing climate.

Project Groundwater supports communities to be more resilient to groundwater flooding. The six-year programme is working with communities in nine high-risk flood areas of the Chiltern Hills and Berkshire Downs. It is led by Buckinghamshire Council in partnership with five other local authorities and Flood Community Groups.

Website: projectgroundwater.co.uk

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Revision History

Version	Date	Amendments
1.0	April 2026	First Issue for review by project partnership
2.0	August 2026	Amendments following feedback from project partnership



Executive Summary

This report summarises the development, delivery and outcomes of Project Groundwater's Flood Experience Questionnaire (FEQ). The FEQ was designed to address evidence gaps on groundwater flooding across nine pilot communities and to support targeted delivery of Property Flood Resilience (PFR) by identifying where impacts and risk are greatest.

Objectives

- To capture resident and business experience of flooding (including both direct and indirect impacts), with a focus on groundwater;
- Understand awareness, preparedness and existing resilience actions;
- Support PFR delivery by using the responses received to identify and prioritise properties that would benefit the most from PFR surveys and advice.

Method and delivery

- Online questionnaire with paper copies available on request and at in-person events;
- Promotion through newsletters, social media, targeted leaflet drops and community engagement events;
- Combination of quantitative analysis and thematic review of free-text responses.

Coverage and responses

- **248** responses received from within the nine pilot communities (from **276** total submissions).
- Response rates varied across communities of which there are likely to be a number of reasons which are discussed further in this report.

Headline findings

- **Groundwater is a key contributor** where flooding does occur within the pilot communities and is often a contributory factor to more visible flooding from surface water, rivers, and sewers.
- **Low risk awareness and uncertainty:** many respondents were unsure about the level of flood risk at their property, and regarding the availability of flood alert and warning services.
- **Preparedness is limited:** uptake of warning services and personal flood action plans was generally low, even among respondents who reported being previously impacted.
- **Indirect impacts are widespread**, with groundwater flooding resulting in road closures and disruption to services.
- **Low prevalence of existing PFR measures**, but there is clear interest in learning more about PFR and adopting resilience measures given the overall uptake of the FEQ.



Implications for PFR delivery

- The responses received have provided evidence to **screen and prioritise** properties for funded PFR surveys, focusing on properties that have reported being impacted by groundwater flooding.
- The findings indicate that effective resilience work must address both **property-level measures** and **community-level disruption** (notably community access and infrastructure impacts).

Recommendations and next steps

- **Continue targeted PFR delivery** using FEQ insights to focus surveys and advice where risk and impacts are greatest.
- **Strengthen communications** on flood risk, flood alerts and warnings and practical preparedness actions, tailored to the specific requirements of each community.
- **Broaden engagement** to under-represented groups (notably tenants and shorter-term residents) and communities which had lower response rates.
- **Refine future data capture activities** by simplifying and mandating key questions.

Overall, the FEQ has established a practical evidence base to inform prioritisation and delivery of PFR through Project Groundwater, while also highlighting clear opportunities to improve awareness and preparedness to groundwater flooding across the pilot communities.



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1.0 Introduction

This report has been prepared to:

- i) Explain the purpose and objectives of Project Groundwater's Flood Experience Questionnaire, referred to as the **FEQ** from hereon;
- ii) Detail the development and evolution of the FEQ;
- iii) Explain the marketing and promotion strategy and how the FEQ was publicised;
- iv) Summarise and assess the findings of the responses received; and,
- v) Discuss lessons learned and opportunities for improvement.

1.1 Project Groundwater

Project Groundwater is one of the Department for Environment, Food and Rural Affairs (DEFRA's) £200 million [Flood and Coastal Innovation Programmes](#), which are managed by the Environment Agency (EA). The programmes have been setup to drive innovation in flood and coastal resilience, and adaptation to a changing climate.

Project Groundwater has been delivered through focused workstreams, supported by numerous partners comprising of consultants and technical specialists, and working closely with the nine pilot communities located across Buckinghamshire, West Berkshire, Hertfordshire, Luton, Slough and Oxford.

Further information can be found at www.projectgroundwater.co.uk.

1.2 What is the Flood Experience Questionnaire and why is it needed?

The FEQ was developed and promoted collaboratively by RAB Consultants (Project Groundwater Resilience workstream lead), Groundwork South (Engagement workstream lead) and Buckinghamshire Council (Communications lead).

One of the Resilience workstream's core objectives is to increase resilience from groundwater flooding within the pilot communities, with the aim of increasing both awareness and implementation of physical flood resilience measures. Typically, a flood resilience project with similar goals would be focused within a targeted community or geographical area based on historic and/or modelled flood risks however, in the case of Project Groundwater, the communities are spread across a wide geographical area, with limited groundwater flood data and in some cases little or no recorded, or recent records, of historical flooding impacts.

In order to identify the areas and properties within each community which are at greatest risk of groundwater flooding, a further exercise was required to better understand the history of flooding and flood impacts, to ensure the funding available to implement resilience measures could be targeted at properties and communities where it would have greatest benefit.



It was decided the best means of obtaining the required information would be to engage directly with residents within the communities through a questionnaire; The Flood Experience Questionnaire (FEQ).

1.3 Objectives of the Flood Experience Questionnaire

The FEQ had 4 main objectives:

- i) To better understand how residents and businesses have been impacted by groundwater flooding, including (but not limited to) property, health and wellbeing, and financial impacts.
- ii) To better understand how residents and businesses have previously dealt with, or attempted to deal with, groundwater flooding – both at a property level and a community level, and to understand how effective any actions or measures have been.
- iii) To use the above data to inform the research and development of suitable and effective resilience measures to address groundwater flooding within the communities.
- iv) By identifying the areas and properties that have been impacted by groundwater flooding, the responses would also be used to help target offers for residents that would benefit most from Property Flood Resilience (PFR) surveys.

1.3.1 Measuring Success

An initial aim was set to achieve a minimum of 10 responses from residents in each community who had experience of groundwater flooding. This was felt to be a realistic goal given the challenges mentioned briefly above (Section 1.2) and discussed in further detail later in this report (Section 6.3).



2.0 Methodology

2.1 Survey Development

The development of the FEQ took place in Summer 2024.

The FEQ was drafted collaboratively between the Resilience, Communication and Engagement Workstreams, and through liaison with PFR industry professionals via the Resilience Workstream's technical working group meetings.

2.2 Format & Data Collection

To simplify the data collection and processing, it was decided the primary method for completing the FEQ would be through an online survey, hosted on the Project Groundwater website.

The survey comprised predominantly of multiple-choice questions, as well as a smaller number of open-ended questions. This format was agreed as it achieved a balance between:

- i) Minimising the time required for respondents to complete the questionnaire;
- ii) Simplifying the collation, processing and analysis of the responses received; and,
- iii) Allowing more detailed answers to be provided on specific topics.

The responses received could be subsequently automatically saved and downloaded in a spreadsheet format, stored on a secure server in order to meet the Project's GDPR obligations.

The FEQ was also released in a printed format to cater for those unable or unwilling to complete the online survey. The offer to request a paper copy was publicised with all relevant communications, with the option to collect a printed version, which included a pre-paid envelope to return the completed copy. The paper copy was also offered out at in-person engagement and drop-in events hosted by the Project. At these events residents could either take the FEQ home and return the completed copy using the pre-paid envelope or were provided the opportunity to complete the survey at the event, and with support of the Engagement Officer present if required.

It was hoped that providing these alternative options would improve uptake of the FEQ by ensuring it was accessible and catered for the needs and requirements of all residents.

2.2.1 Content

The FEQ comprised of 50 questions, split across 7 topics:

- Section 1 – Demographics
- Section 2 – Property Information – 11 Questions
- Section 3 – Flood History – 16 Questions
- Section 4 – Flood Risk – 3 Questions
- Section 5 – Property Flood Resilience – 7 Questions



- Section 6 – Indirect Flooding Impacts – 8 Questions
- Section 7 – Increasing Resilience through Project Groundwater – 5 Questions

It was not necessary to answer all questions in all sections, and the questionnaire was purposely designed such that specific questions and/or sections could be skipped if they were not relevant to the person completing it.

The full FEQ can be found in Appendix A.

2.2.2 Landlord FEQ

The project also developed a separate questionnaire designed specifically for landlords. Developing a strategy for targeting and engaging with landlords was considered important because:

- There was an awareness that some pilot communities, and properties located within the target areas within these (Section 2.3), included a large number of tenanted properties.
- Although tenants may have an interest in completing the FEQ and participating in the project, they would not necessarily have full control of the type and scope of flood resilience measures that could subsequently be implemented. A tenancy agreement may also restrict what level of engagement and actions a tenant can take at their property without their landlord's permission, which could include the offer of a PFR survey that may have followed completion of the FEQ.
- Landlords who owned property within the pilot communities may not live in the area themselves but may still have an interest in participating with the project to understand the flood risk to their properties and how they can improve flood resilience to protect the value of their assets.

The landlord questionnaire had an additional focus on the number and types of properties within their portfolio and what existing flood resilience measures and procedures, if any, they had in place to protect their property and tenants. Given landlords may own several properties within the target areas within each community, the standalone questionnaire allowed landlords to complete a single response to cover multiple properties.

The Landlord FEQ can be found in Appendix B.

2.3 Distribution & Geographical Coverage

The target audience for the FEQ was anyone (residents and businesses) historically impacted by groundwater flooding within the pilot communities.

Project Groundwater worked with Groundwork South, Lead Local Flood Authorities, Local Flood Groups and Parish Councils, to identify areas that are known to have historically been impacted by groundwater flooding. A list of these areas is provided in Appendix C.



This information was supplemented with the groundwater flood mapping developed by Jacobs as part of the project. The Jacobs mapping identifies areas of potential groundwater emergence, with three risk layers provided:

- i) Areas where groundwater is likely to be flowing overground (≥ 0 m relative to local ground level);
- ii) An accompanying flood depth layer for surface water flow pathways that may arise as a result of groundwater emergence; and
- iii) Areas where groundwater may be just below ground (≥ -2 m and < 0 m relative to local ground level).

Given the significant number of properties that are located within the more extensive model layer which identifies areas where groundwater may be just below or close to the surface, it was decided to initially focus on targeting those properties within the higher risk zone, where groundwater flooding is most likely to occur at the surface. Properties in the higher risk area:

- i) Are more likely to have experienced historic groundwater flooding; and,
- ii) Would benefit the most from groundwater flood resilience measures and advice given the greater risk identified.

To support with the marketing and promotion of the FEQ, RAB Consultants completed an exercise to estimate the number of properties located within the higher risk zones, and within the areas of known historic groundwater flooding. The Environment Agency's National Receptor Dataset (NRD) was used to estimate the total number of properties within these areas within each community.

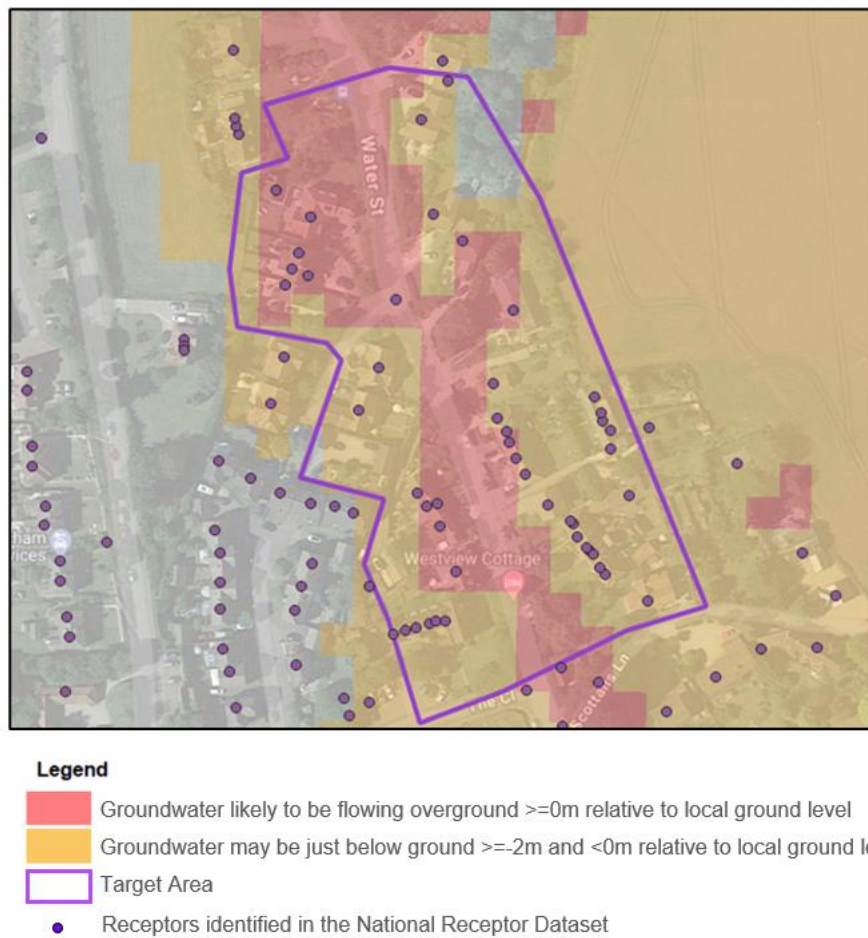


FIGURE 1 – EXAMPLE EXTRACT OF MAPPING SHOWING JACOBS GROUNDWATER FLOOD RISK LAYER AND NATIONAL RECEPTOR DATASET USED TO IDENTIFY TARGET PROPERTIES



TABLE 1: NUMBER OF TARGET PROPERTIES IDENTIFIED IN EACH COMMUNITY

Community	Properties Targeted
Pang Valley	343
Lambourn Valley	324
Kimpton	579
Chalfont St. Peter	460
Marlow	2600
Chesham	2200
Luton	9800
Hinksey Park	341
Colnbrook-with-Poyle	380
TOTAL	17,027

2.4 Programme

The nine pilot communities were divided into three Survey Areas. This was to ensure adequate time and resources for engagement, marketing and promotion could be provided for each phase, and simplify the subsequent review and screening process by reducing the potential volumes of responses to assess following each phase.

The Survey Areas were determined based on:

- i) Similarities in hydrogeology, groundwater flooding mechanisms and impacts;
- ii) Historic groundwater flood impacts and recency of groundwater flood events;
- iii) Previous levels of engagement to make time for sufficient additional campaign planning and community engagement where necessary.
- iv) Alignment with pre-planned engagement activities within the communities to avoid mixed messaging.

With respect to point iv) it was decided to swap the planned survey release in Chalfont St. Peter (originally included within Survey Area 2) with Hinksey Park, so that the survey programme accommodated the need for careful, consistent and aligned public messaging in Chalfont St. Peter through winter 2024/25 due to an ongoing flooding event.

The phased approach also enabled a staggered approach to the screening exercise to identify properties eligible to receive a PFR survey. An extended programme was necessary to deliver the planned number of PFR surveys, and the phased approach allowed the first surveys to be started whilst the final phases of the FEQ were ongoing.

Table 2 defines the agreed Survey Areas, justification for these groupings and the timescales for opening and closing the FEQ in each area.



TABLE 2: FEQ SURVEY AREAS AND PROGRAMME

Survey Area	Communities	Grouping	FEQ Window
1	Pang Valley	Hydrogeology: Chalk valleys at risk of experiencing long-duration groundwater flood events, with the emergence of historic rivers, ephemeral streams and winterbournes.	19/08/2024 – 02/10-2024
	Lambourn Valley Kimpton	- Flood Impacts: The impacts from these groundwater flooding mechanisms are expected to be the most challenging to address at both a property and community level. - These three communities are also the most rural communities.	
2	Hinksey Park	Hydrogeology: Permeable Superficial Deposits (PSD).	04/11/2024 – 12/12/2024
	Marlow Chesham	- Flood Impacts: These communities are impacted by multiple sources of flooding including from the River Thames at Hinksey Park and Marlow, and surface water flooding in all three areas. - These three urban communities have a good existing level of awareness of local flooding issues requiring fewer engagement activities.	
3	Luton Colnbrook Chalfont St Peter	- Hydrogeology: Chalk bedrock in Luton and Chalfont overlain by superficial deposits. Superficial deposits overlying London Clay in Colnbrook. - Flood Impacts: Low number of reported flood incidents in Luton albeit areas and properties are at risk from numerous sources. Chalfont St. Peter has specific localised issues with foul sewer inundation from groundwater.	20/01/2025 – 31/03/2025



Survey Area	Communities	Grouping	FEQ Window
		Levels of engagement with the Project in Luton and Colnbrook had been lower than other areas, particularly given the risks and the population sizes, so it was decided to group these communities in the final phase to allow time to plan for specific additional engagement activities to improve uptake. Chalfont St. Peter was originally planned to form part of Survey Area 2 alongside the other Buckinghamshire communities, but the decision was made to move this community to the final phase given challenges and sensitivities relating to ongoing flooding within this community during phase 2.	

2.5 Marketing & Promotion

Project Groundwater's Engagement Workstream, led by Groundwork South, worked closely with Buckinghamshire Council as the Communications lead. Prior to creation of the FEQ, the Engagement Workstream had already undertaken numerous engagement activities across all of the pilot communities, and their knowledge, contacts and working relationships would be invaluable in aiding targeted promotion of the FEQ.

2.5.1 Project Communications

The FEQ was advertised through the monthly project newsletter which is issued in the form of an e-mail for those who had previously registered an interest in receiving updates about the Project. The Project also promoted the FEQ through its social media channels on Facebook, X and LinkedIn.

2.5.2 Leaflets

There was an awareness that some residents and businesses within the target areas identified may not be aware of the Project and would therefore have had no opportunity to register to receive the updates sent through the project communications. It was therefore agreed to undertake direct marketing in the form of printed leaflets that would be posted to all properties located within each target area (Section 2.3) and additional copies left within community spaces.

Buckinghamshire Council created a number of leaflets and organised the printing and distribution of these within the target areas. An example of one of the leaflets distributed is provided in Figure 2.





Project Groundwater
Are you flood resilient?

Have you been impacted by flooding?

Please support our Flood Experience Questionnaire!

You will be helping us learn more about flooding and you could qualify for a free Property Flood Resilience Survey.

www.projectgroundwater.co.uk/FEQ

By sharing your experiences, you'll be helping our work to:

- **Increase Property Flood Resilience** to groundwater flooding
- **Reduce the risk** of groundwater flooding reaching properties
- **Improve community resilience** during groundwater flood events

 Environment Agency
 Department for Environment Food & Rural Affairs

More information on the back!

Our research will help to improve the advice available to residents and businesses at risk of groundwater flooding.

Our Goals - Why are we doing this?

- ▶ Understand how you have been impacted by groundwater flooding.
- ▶ Understand how you have previously dealt with or attempted to deal with groundwater flooding.
- ▶ Use your knowledge to help us develop new ways to be better prepared for groundwater flooding when it comes.

Free Property Flood Resilience Surveys

This questionnaire will be used to help us identify properties to receive a free Property Flood Resilience Survey to support this research. If you live in a rented property, landlord approval will be required for a Survey. You can read more about the surveys on our website.

Find out more and complete the Flood Experience Questionnaire online at:

www.projectgroundwater.co.uk/FEQ

If you would prefer a paper copy with pre-paid return, please email hello@projectgroundwater.co.uk or call Buckinghamshire Council on 0300 131 6000 and tell us your name, address and telephone number.



This questionnaire closes 31 March 2025.

 Project Groundwater is a Buckinghamshire Council initiative funded by Defra. We are part of the £150 million Flood and Coastal Resilience Innovation Programme that is managed by the Environment Agency.

FIGURE 2 – LEAFLET DEVELOPED AND DISTRIBUTED FOR SURVEY AREA 3

2.5.3 Engagement Events

In-person promotion was also undertaken as part of pre-planned engagement events during each phase of the survey. Paper copies of the FEQ were offered at these events, and Groundwork South helped run through and complete the FEQ with any attendees who requested and required assistance doing so.

In all communities, Groundwork South worked closely with existing community contacts from Town and Parish Councils, flood actions groups and environmental groups to promote the FEQ at events, meetings and through their own social media channels.

A full list of the engagement events that took place across all survey phases is provided in Table 3 below.



TABLE 3: ENGAGEMENT EVENTS WHICH TOOK PLACE ACROSS ALL SURVEY PHASES AND ASSOCIATED DATES

Community	Event	Date
Lambourn Valley	In-Person at the Lambourn Community Library	28/08/2024
Kimpton	The Kimpton Autumn Show	07/09/2024
Pang Valley	Drop-in session at Hampstead Norreys Hall & Village Shop	September 2024
Pang Valley	Newbury Show	21-22/09/2024
Lambourn Valley	In-Person at the Lambourn Community Library	26/09/2024
Hinksey Park	FEQ promoted at 2no. South Oxford Flood Action Group (SOFLAG) Meetings Drop-in session at South Oxford Community Centre	Autumn 2024
Chesham	FEQ promoted at: - Chesham and Villages Proud of Bucks Awards - Chesham Environmental Group Meetings - Chesham Environmental Group Litter Pick Drop-in session at Chesham Library	October 2024
Marlow	FEQ promoted at Marlow Late Night Shopping Drop-in session at Marlow Library	Autumn 2024
Chalfont St Peter	In-Person at the Chalfont St Peter Community Library	11/03/2025
Chalfont St Peter	In-Person at the Chalfont St Peter Community Library	29/03/2025
Colnbrook with Poyle	Due to no available public facilities, it was agreed to complete a second leaflet drop at the more high-risk flood locations.	25/03/2025
Luton	The Luton Resilience Fair at the Hat Factory	26/03/2025



2.5.4 Frequently Asked Questions

The FEQ website landing page included several Frequently Asked Questions (FAQs) to provide further clarity of the purpose and objectives of the FEQ. The FAQs could be reviewed prior to choosing to start the questionnaire. The FAQs and answers provided are included in Appendix D.

2.5.5 Promotional Videos

To support with the promotion and marketing of the FEQ, short and simple explainer videos were recorded and hosted on the Project Groundwater website and YouTube channel. Each video was no longer than 2 minutes, allowing residents to quickly learn more about the purpose and objectives of the FEQ and how they would support the Project by participating.

Why we have released our Flood Experience Questionnaire Survey:

https://www.youtube.com/watch?v=HEMZF_JuXX8

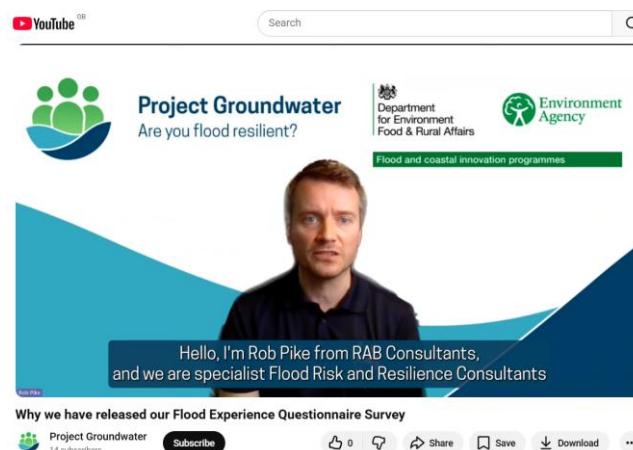


FIGURE 3 – SCREENSHOT OF EXPLAINER VIDEO RELATING TO THE FEQ.

Our Flood Experience Questionnaire Opens:

<https://www.youtube.com/watch?v=ta3DKza-Fk0>

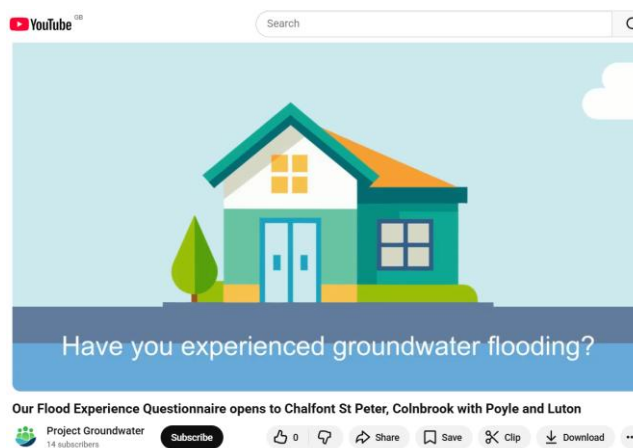


FIGURE 4 – SCREENSHOT OF VIDEO ANNOUNCING FEQ OPEN TO CHALFONT ST PETER, COLNBROOK AND LUTON (WAVE 3)



2.5.6 Webinars

The project also hosted two webinars to address specific elements of the FEQ and the planned follow-on work. The first of these was a live webinar targeted specifically at Landlords to make them aware of the Project, their obligations as Landlords to be aware of the flood risk at the properties they own, and to support their tenants if and when required during and following a flood event. The webinar also explained how the Project could benefit their properties if they completed the FEQ and should their property or properties subsequently be selected to receive a PFR survey.

In order to promote the Landlord webinar, the Project identified and contacted numerous relevant associations and estate agents, including:

- National Residential Landlords Association (NRLA)
- Southern Landlords Association (SLA) - iHowz
- Property Redress Scheme
- Tenants' Union UK
- Housing Associations
- Estate Agents

TABLE 4: NUMBER OF HOUSING ASSOCIATIONS & ESTATE AGENTS CONTACTED IN EACH COMMUNITY

Community	Housing / Community Associations	Landlord Associations	Tenant Associations	Estate Agents
Chalfont St. Peter	2	-	-	8
Marlow	6	2	3	20
Chesham	7	3	1	16
Luton	-	-	3	29
Hinksey Park	6	2	3	18
Colnbrook-with-Poyle	1	-	2	2



Resilient Landlords: Protecting Your Properties from Flooding:

<https://www.youtube.com/watch?v=DITuY4FmFkY>



FIGURE 5 – SCREENSHOT OF THE WEBINAR FOR RESILIENT LANDLORDS

Property Flood Resilience Surveys Q&A:

The project also hosted a live Question and Answer (Q&A) webinar in January 2025 to run through common queries and concerns relating to the planned Property Flood Resilience surveys, and to provide an opportunity for residents considering the offer of a PFR survey to directly ask questions to the technical experts at RAB Consultants who would be undertaking the surveys.



3.0 Data Analysis

The form and structure of the FEQ was specifically designed to strike a balance between ease and efficiency for completion, as well as to simplify the subsequent data analysis. Responses were collected through a combination of multiple choice and free-text questions, providing both quantitative and qualitative data.

Responses submitted using the form on the FEQ webpage were collated and downloaded in a single spreadsheet, which minimised the need for any arduous data processing tasks. Microsoft Excel was subsequently used to analyse the data and create charts and graphs in order to present the responses in a clear visual format. Thematic analysis was undertaken for open-ended responses.

An analysis of all 248 responses received in the pilot communities has been undertaken, identifying overall trends. Following this, a further dis-aggregated analysis has been undertaken to enable a deeper understanding of community-specific experiences. For this second stage analysis, some communities were omitted as the low number of responses received meant that no meaningful conclusions could be made.

Questions in the FEQ were not mandated, therefore some questions were left blank by significant numbers of respondents. The number of blank responses is quoted within the subsequent data analysis (as a raw number or percentage).



4.0 Results Analysis

4.1 Overall Results

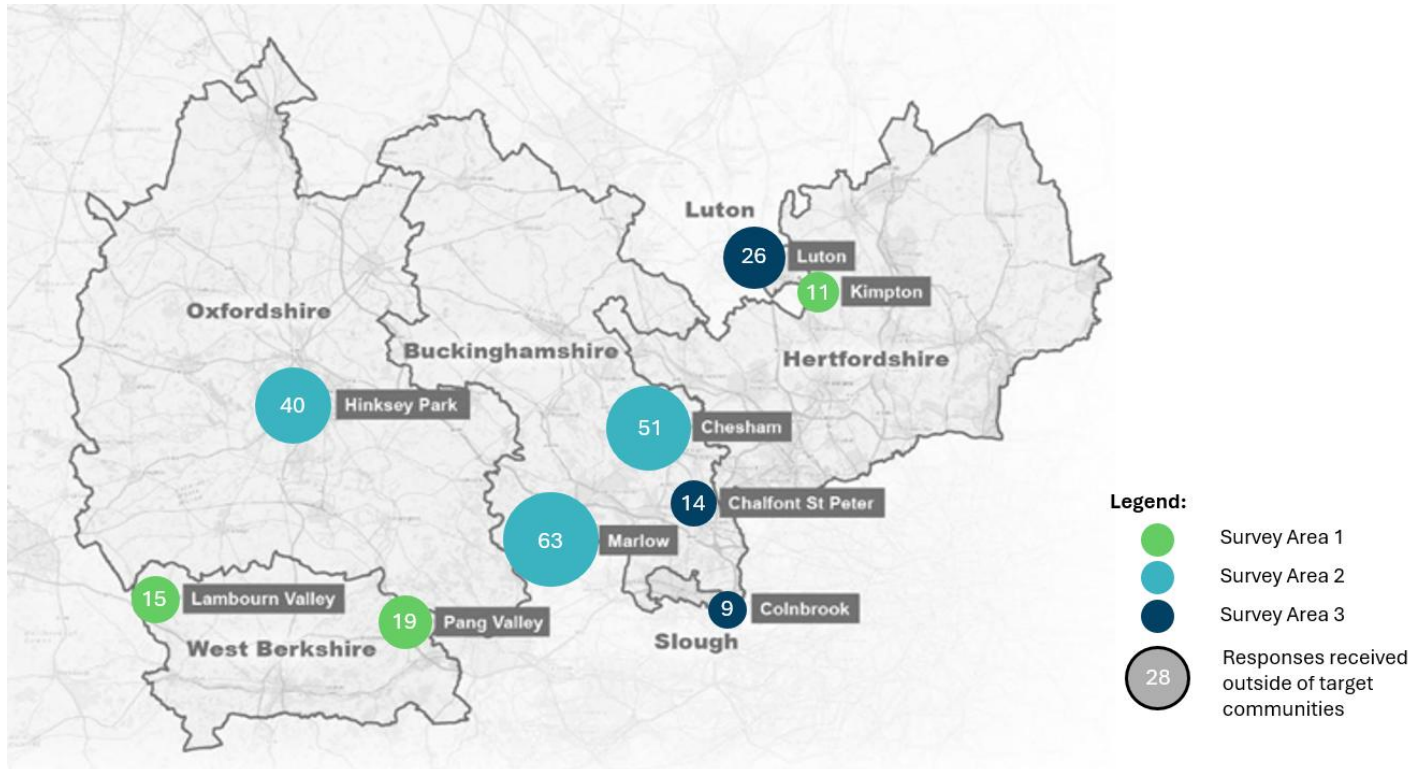


FIGURE 6 – A MAP SHOWING RESPONSE RATE ACROSS COMMUNITIES

A total of 248 FEQ responses were received across the nine communities. A further 28 responses were received from residents outside of the identified pilot communities or where addresses were unspecified. For the purposes of this work, only the responses from residents within the nine target communities have been analysed.

Response rates varied across the communities, with the lowest from Colnbrook, which only produced nine responses, and the highest from Marlow, where 63 responses were received (Figure 6). Low response rates may reflect a range of factors, including levels of awareness of groundwater flooding and Project Groundwater, competing priorities, survey fatigue, concerns regarding the purpose or use of flood-related information, specifically surrounding flood insurance, as well as broader challenges associated with community engagement. Whilst further engagement may help improve participation, the survey data alone does not allow firm conclusions to be drawn regarding the reasons for low response rates.



4.2 Tenure

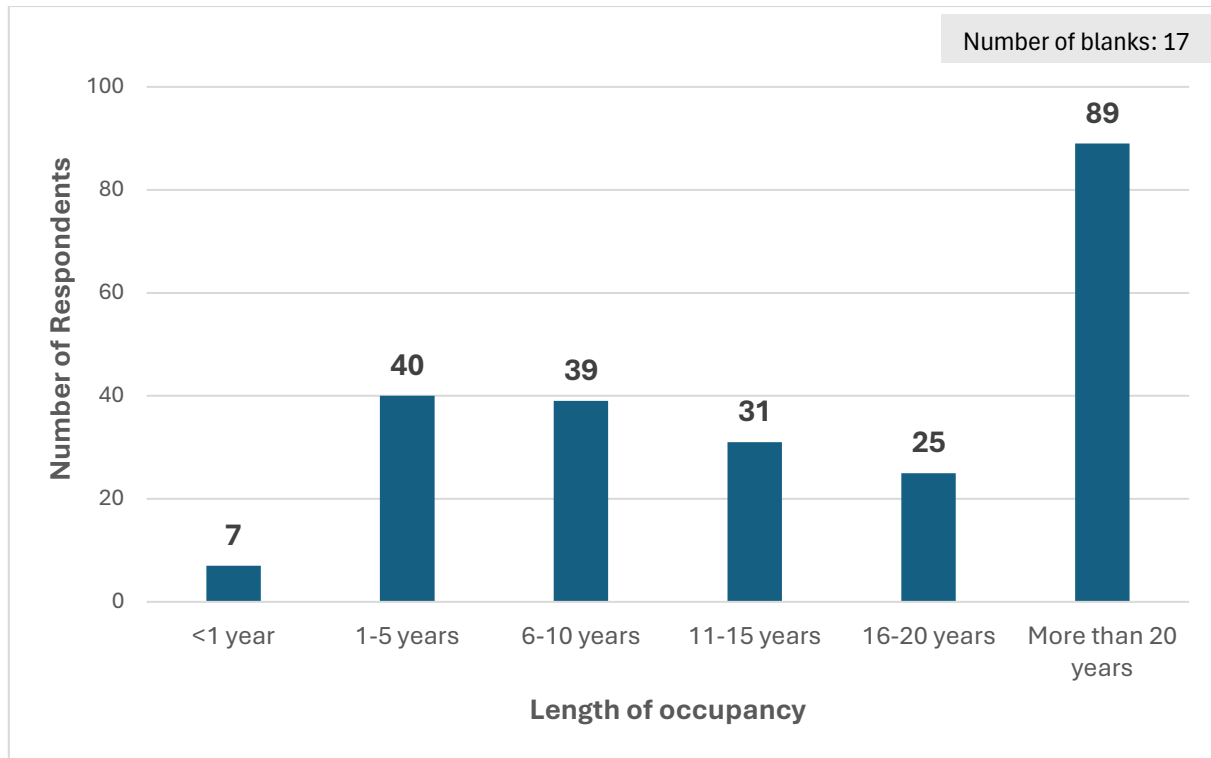


FIGURE 7 – A CHART DISPLAYING THE NUMBER OF YEARS RESPONDENTS HAVE OCCUPIED THEIR CURRENT ADDRESS.

Most respondents have been living at their current address for over 20 years, indicating stronger engagement from longer-term residents. People who have longer occupancy length are:

- More likely to have witnessed or experienced flooding either directly at their property, or within the community; and/or,
- Considered more likely to demonstrate a stronger sense of place and investment in local issues, including flood risk and resilience.

The findings suggest value in continuing to engage shorter-term residents alongside longer-term residents, where awareness and understanding of flood risk are likely to be lower.

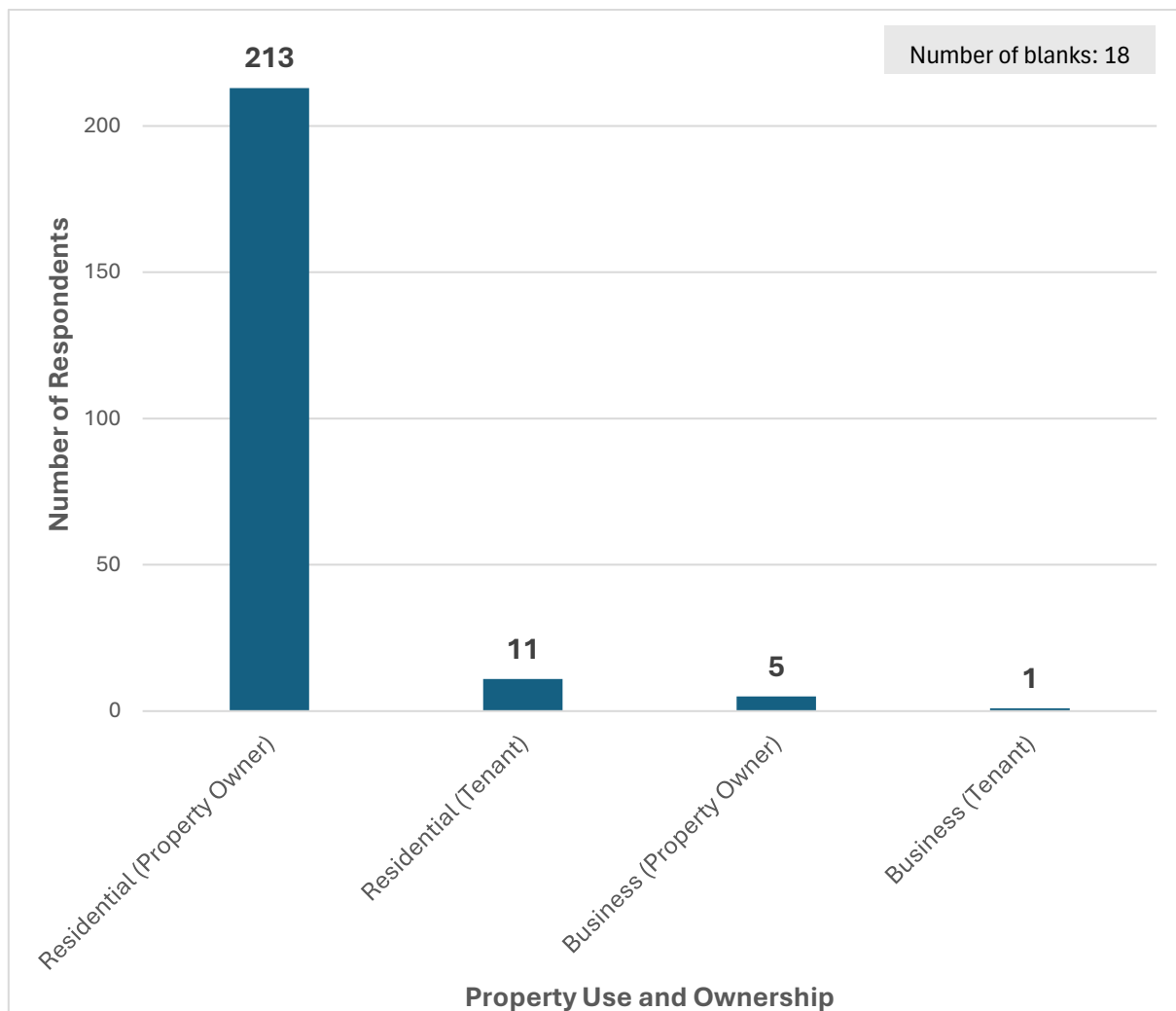


FIGURE 8 – A CHART DISPLAYING PROPERTY USE AND OWNERSHIP OF RESPONDENTS ACROSS ALL NINE COMMUNITIES.

Figure 8 displays property use and ownership across the nine communities, which demonstrates an overrepresentation of respondents that are property owners [218] as opposed to tenants [12].

In England, there are three main housing tenures: owner occupation (outright or with a mortgage), and the private and social rented sectors (including both local authority and housing association homes)¹. When looking at the subnational dwelling stock by tenure, the average owner occupation across the area outlined in Figure 6 is 62.6%, and the proportion of rented properties is 37.4%² (breakdown of results in Appendix E). When comparing this with the FEQ responses, we can see an overrepresentation of those who own their property [95%], and underrepresentation of those renting their property [5%]. Although no data is available for the nine specific pilot communities, the greater engagement from those owner occupiers is not unexpected.

¹ [Chapter 1: Profile of households and dwellings - GOV.UK](#)

² [Subnational estimates of dwellings and households by tenure, England - Office for National Statistics](#)



Property owners are more likely to want to protect their asset, feeling a greater sense of concern for their property and community. Tenants on the other hand, often feel powerless in protecting the property they live at, and therefore they may have seen less benefit in completing the FEQ resulting in lower engagement. This was highlighted as a possible constraint when distributing the survey, hence landlords were specifically targeted (Appendix B). Eight of the respondents that selected they were the property owner, later stated they did not live at the property, possibly indicating that they are landlords and rent out the property.

Furthermore, research has found that nationally, property owners on average spend longer at their property compared to those tenants³. This remains true for respondents of the FEQ, where average occupancy length for owners was found to be 18.5 years, compared to that of tenants, found to be 13.8 years (both residential and commercial).

Taken together, the higher proportion of owner-occupiers and their longer average residency further reinforce the earlier observation of increased engagement with the FEQ. Those living in a property for longer are more likely to have experienced or witnessed flooding events and feel a stronger sense of responsibility for both their property's value and the wider community. Therefore, due to the understanding that a property flood resilience survey may be offered following submission of the FEQ, greater engagement from these longer-term owner occupiers has been observed.

4.3 Knowledge of flooding

At this point it is worth reiterating that the FEQ was distributed through a targeted approach, to those properties identified to be at groundwater risk through the methods outlined in Section 2.3 above. The specific question relating to knowledge of flooding analysed here is Question 18: *'Did you know your property was at risk of flooding when you purchased it / became the tenant?'*. Results are displayed in the below Figure 9.

³ [Chapter 3: Housing history and future housing - GOV.UK](#)

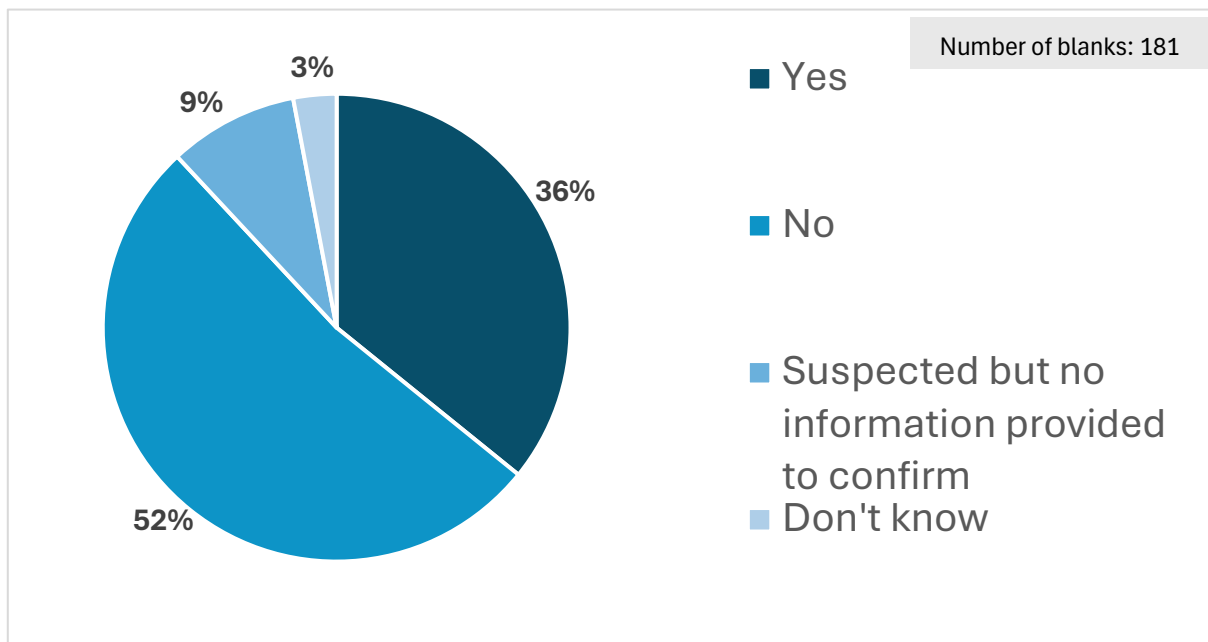


FIGURE 9 – A PIE CHART TO DISPLAY AWARENESS OF FLOOD RISK AMONG RESPONDENTS UPON PURCHASING OR BECOMING A TENANT AT THE PROPERTY

Over half of the respondents [52%] to this question were not aware of the flood risk to their property when moving in. This question was not groundwater risk specific, therefore where some respondents have answered 'Yes', this is not definite confirmation they were aware of the risk of flooding specifically from groundwater, and the awareness may in fact be of surface water or fluvial flood risks⁴.

The prevalence of respondents who were unaware of groundwater flood risk when purchasing or becoming a tenant at the property is an attribution to the lack of any detailed or publicly available groundwater risk mapping. It is likely that the awareness of the risk of groundwater flooding was raised through word of mouth, either from previous owners / tenants or members of the community that have experienced or witnessed such events.

A high proportion of respondents also left this question blank [181; 73%]. This may reflect a range of factors, including uncertainty regarding flood risk, inability to recall information provided when moving into the property or reluctance to answer. It is also recognised through wider community engagement activities that residents often express concerns regarding how flood-related information and modelling may influence future insurance availability or premiums. However, the FEQ did not specifically ask respondents why questions were left unanswered, therefore no firm conclusions can be drawn regarding the causes of non-response rates.

⁴ [Check the long term flood risk for an area in England - GOV.UK](https://www.gov.uk/check-the-long-term-flood-risk-for-an-area-in-england)



4.4 Flood History

53 respondents have reported their property has previously flooded during occupancy [21%], and 91 respondents have not previously experienced flooding [37%]. The remaining 42% left this question blank. Figure 10 shows the distribution of recurrent flood events across respondents. The graph shows no clear emerging pattern when looking at this in isolation.

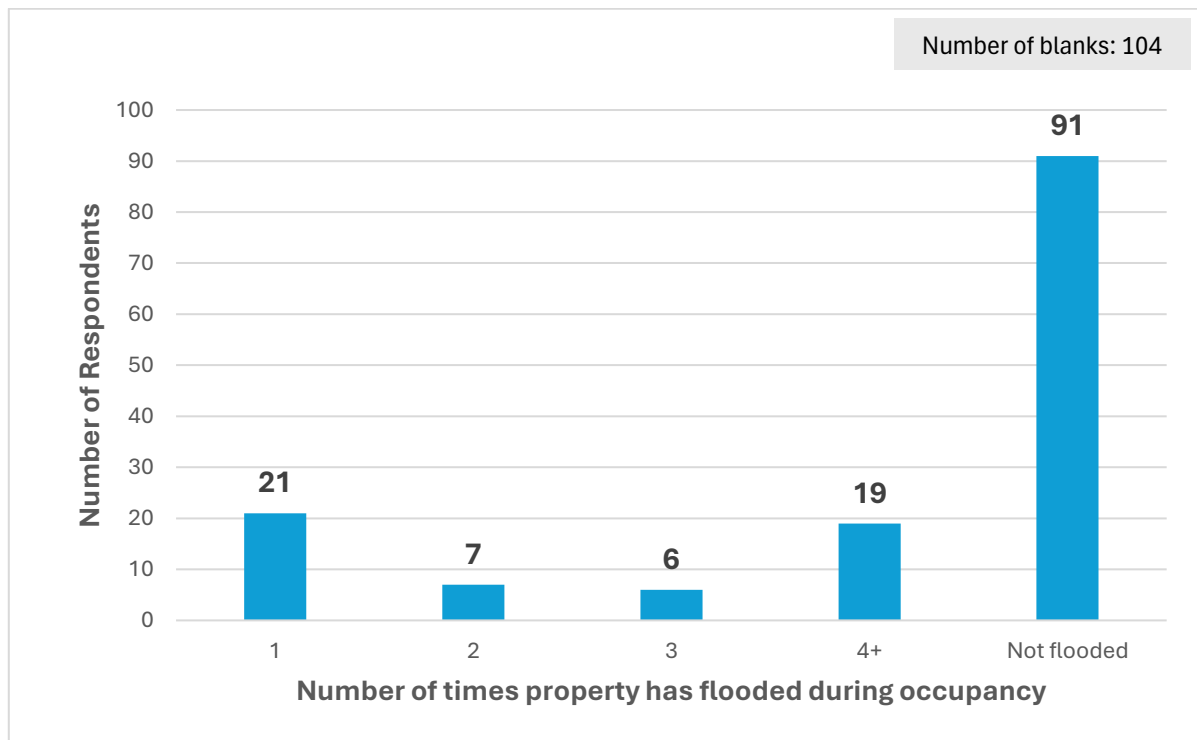


FIGURE 10 – A CHART TO SHOW THE NUMBER OF TIMES RESPONDENTS’ PROPERTY HAS FLOODED DURING OCCUPANCY



TABLE 5: RELATIONSHIP BETWEEN FLOOD FREQUENCY EXPERIENCED AT THE PROPERTY AND AVERAGE OCCUPANCY LENGTH

Number of times flooded	Number of respondents	Average occupancy length (years)
1	21	15.9
2	7	22.3
3	6	32.2
4+	19	20.2
Not flooded	91	19.8

Table 5 examines the relationship between average length of occupancy and the number of flood events experienced. The results indicate that average occupancy length increases with flood frequency up to three recorded events. However, this trend does not persist among respondents reporting four or more flood events, where the pattern becomes less consistent. Furthermore, the average occupancy length for properties with no prior flooding is not markedly lower than for those that have experienced flooding. This suggests that occupancy duration alone does not adequately explain flood experience, and that geographical or other contextual factors are likely to be influential. A more granular data analysis has been undertaken in a later Section (Section 5.3).

The two communities with the highest number of respondents reporting four or more previous flood events, Hinksey Park and Marlow, also rank within the top three in overall FEQ response rates (Figure 6). While both communities include a notable proportion of respondents without direct property-level flood experience, the earlier observation that engagement is higher among those with greater awareness of flood risk remains supported. This suggests that direct experience is not essential to drive engagement; rather it may also be influenced by:

- Witnessing flood events within the community; and/or
- Indirect or second-hand experience of flooding impacts (e.g. road closures)

Overall, these findings reinforce the idea that broader community exposure to flooding can play a key role in encouraging participation in the questionnaire, and length of occupancy plays a lesser role.

4.4.1 Source of Flooding

Of those that have reported flooding during their occupancy [53], the reported cause of flooding is variable, often with more than one flooding mechanism reported.

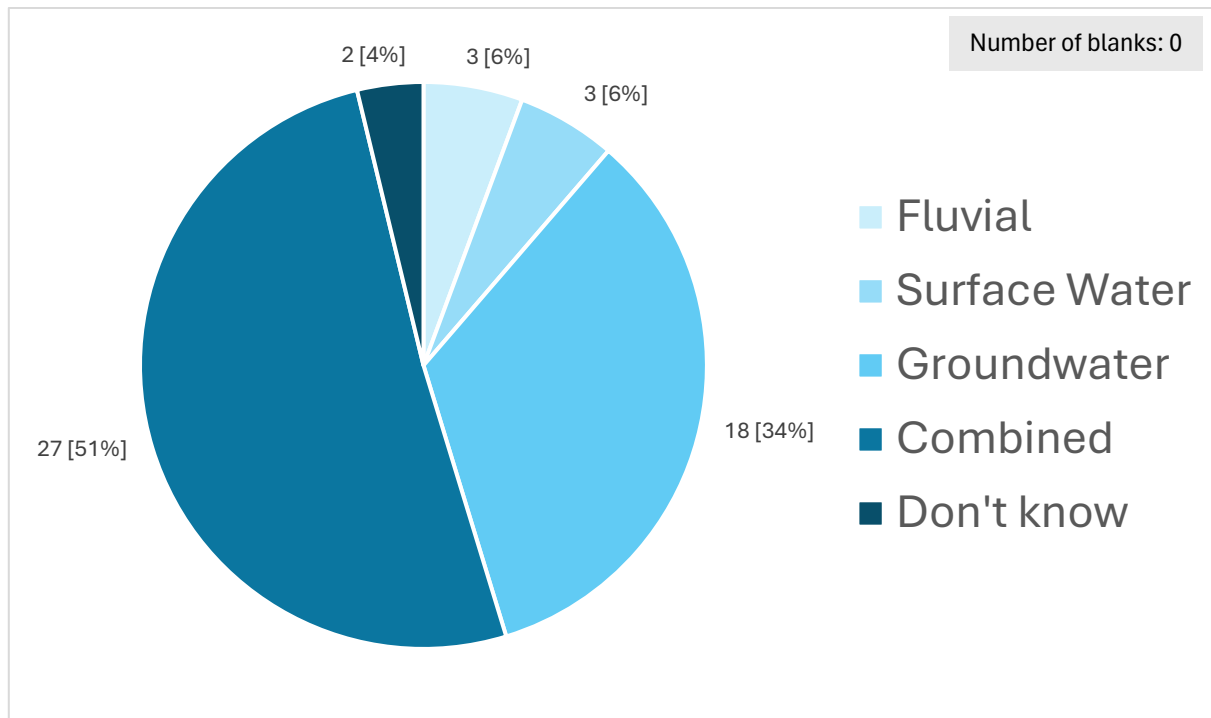


FIGURE 11 – A PIE CHART DISPLAYING THE REPORTED CAUSE OF FLOODING FOR THOSE RESPONDENTS WHO HAVE PREVIOUSLY EXPERIENCED FLOODING DURING OCCUPANCY. ‘COMBINED’ IS THE COUNT OF RESPONDENTS QUOTING MORE THAN ONE SOURCE.

Out of the 53 respondents who have experienced flooding at their property, 34% [18 respondents] identified groundwater as the sole source. This represents the most frequently reported single cause of flooding. In contrast, no respondents attributed flooding exclusively to ‘*Drains / Sewers*’, while only 3 respondents in each case attributed flooding solely to ‘*Fluvial*’ or ‘*Surface Water*’.

The most common overall response however was that flooding resulted from multiple sources, recorded here as ‘Combined’. Given the wide range of source combinations reported, a simplified analytical approach has been adopted. Rather than assessing each unique combination individually, the analysis counts the frequency with which each source was selected as a component of the combined response (see Figure 12).

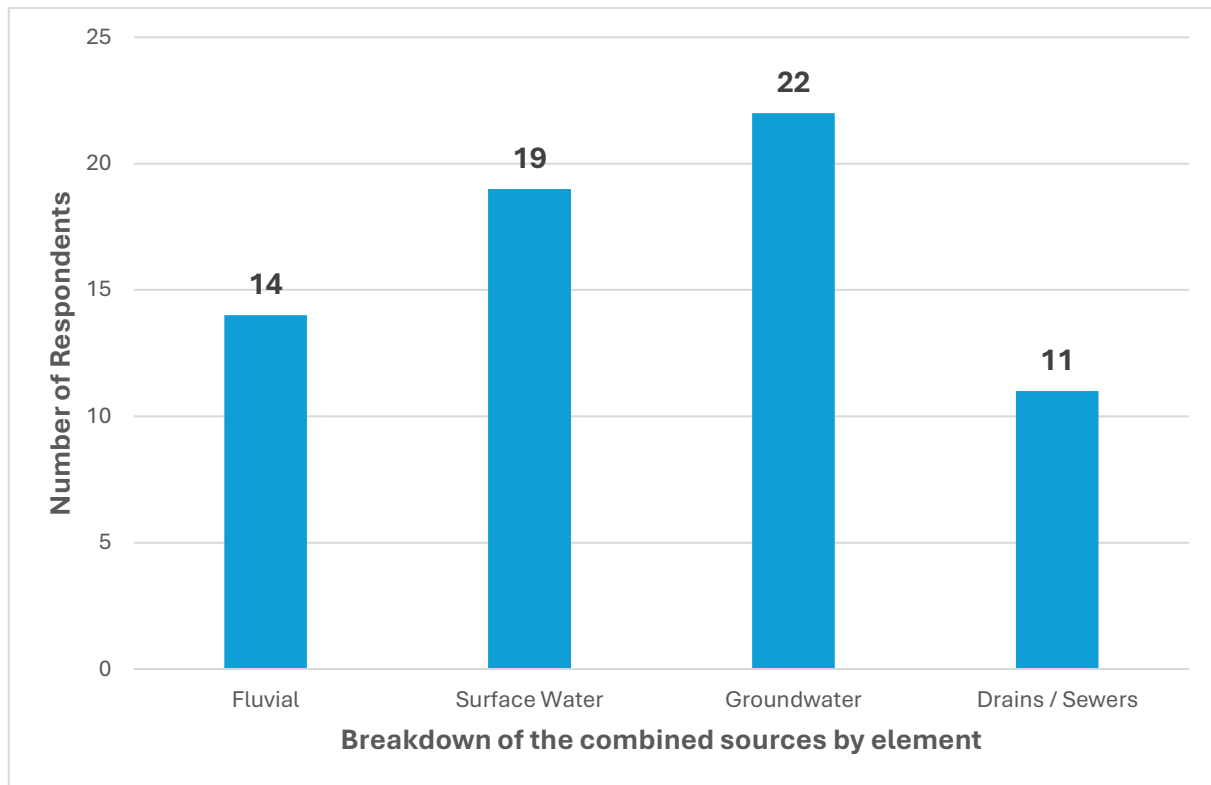


FIGURE 12 –A CHART SHOWING THE NUMBER OF THE INDIVIDUAL SOURCES REFERENCED FOR THOSE SELECTING MORE THAN ONE SOURCE (OF THE 27 WHO SELECTED MORE THAN ONE SOURCE).

Of the 27 respondents who reported experiencing flooding from multiple sources, 22 identified groundwater as one of the contributing mechanisms. This therefore means that out of the 53 respondents who have reported previous flood experience, 40 of those have attributed their flood source to groundwater to some extent, whether that be as the sole source, or in combination with other sources. This high proportion is notable, although not unexpected, given that the FEQ was targeted using groundwater risk mapping; as such, respondents were more likely to be located in areas predisposed to groundwater emergence.

Within this group, six respondents reported experiencing both groundwater and fluvial flooding, while a further six reported a combination of groundwater and surface water flooding. This highlights the interconnected nature of flood processes, particularly groundwater, where emergence is often not an isolated phenomenon but instead coincides with periods of sustained rainfall that also drive fluvial and surface water flooding, as well as drain / sewer flooding which can occur as a result of groundwater inundation. Many other ‘combined’ scenarios were also reported, encompassing a wide range of interactions between 2 or more of the four flood sources: fluvial, surface water, groundwater and sewers/drains.

These findings of combined flooding attributions have important implications for risk management and mitigation, as it reinforces the need for integrated approaches that consider multiple pathways simultaneously, rather than addressing flooding in isolation.



4.4.2 Direct Flood Experience

Despite 53 respondents reporting previous flood experience during their occupancy, only 26 have reported internal depths, with the remaining 26 respondents answering that ‘*no water entered the property*’. It is assumed that these respondents that do not report internal depths have experienced floodwater effecting the curtilage of their property and/or non-habitable areas such as cellars/basements or subfloor voids. The below figure displays both reported internal and external depths of the 53 respondents.

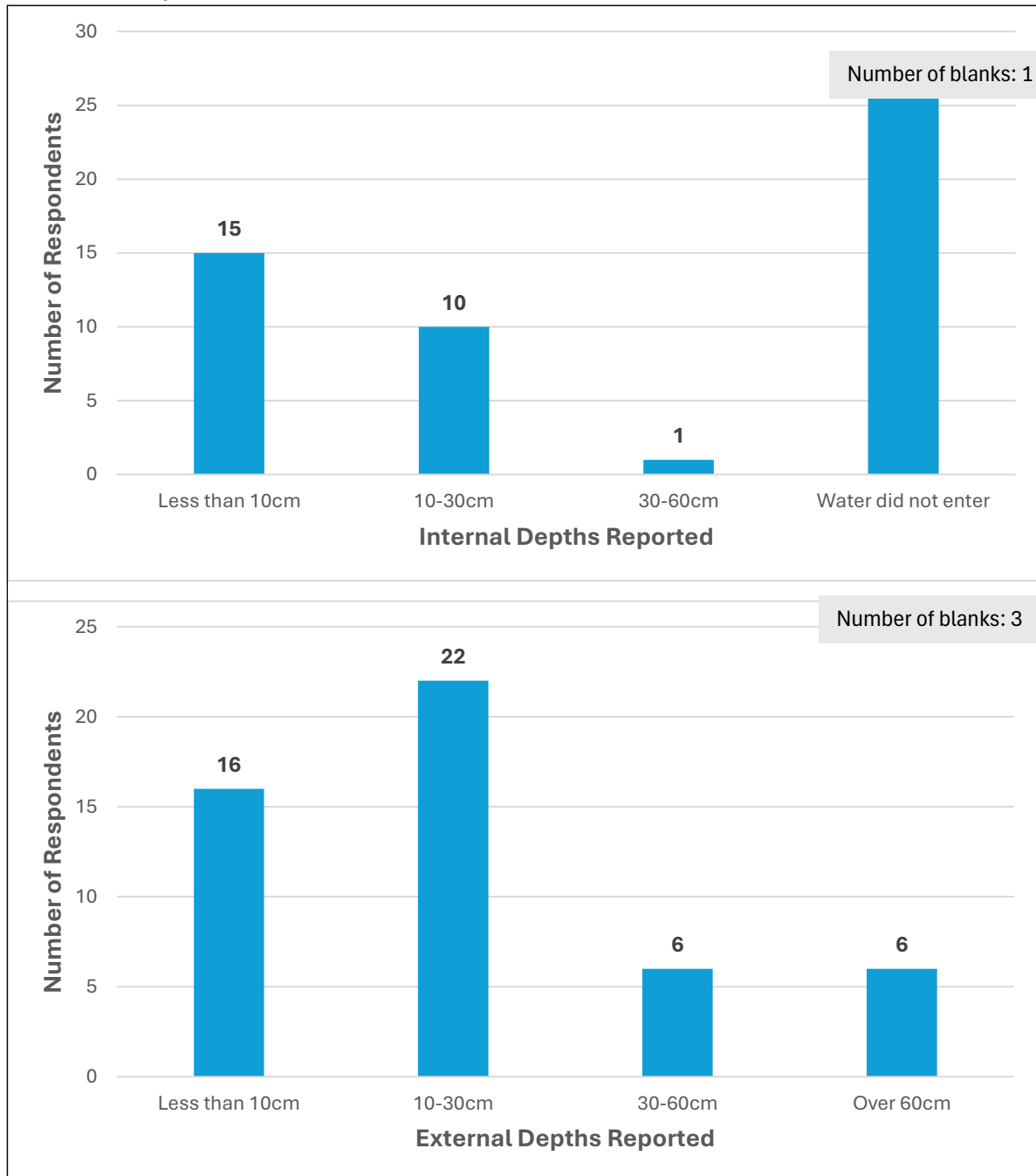


FIGURE 13 –REPORTED INTERNAL AND EXTERNAL DEPTHS OF RESPONDENTS THAT HAVE PREVIOUSLY EXPERIENCED FLOODING DURING OCCUPANCY



Most respondents who experienced internal flooding reported relatively shallower depths, with the largest number of respondents reporting less than 10cm [15 respondents], followed by 10-30cm [10 respondents], and only a single case exceeding 30cm internally.

This general pattern is broadly consistent with the external depths reported, where responses are more evenly distributed but still concentrated in the lower ranges, with the highest number in the 10-30cm category [22 respondents], and a notable proportion also below 10cm [16 respondents]. The limited number of higher-depth external depth reports (over 30cm) helps explain the predominance of shallow internal flooding. This trend may be linked to the commonly reported source of flooding, both stand-alone or as part of a combined mechanism, groundwater, which tends to result in lower, more gradual above-ground depths compared to surface water or fluvial flooding.

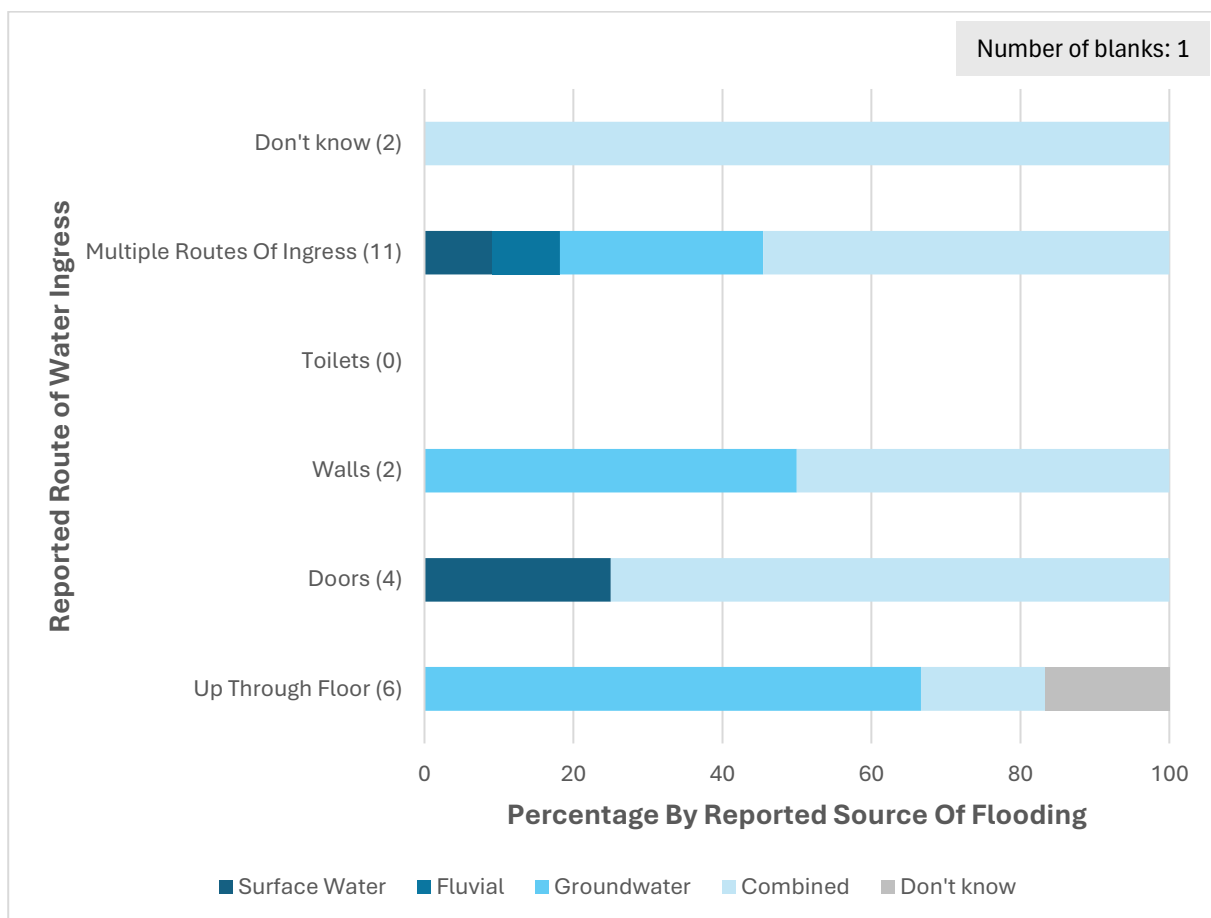


FIGURE 14 –A GRAPH DISPLAYING THE RELATIONSHIP BETWEEN REPORTED ROUTE OF WATER INGRESS AND REPORTED SOURCE OF FLOODING. WHERE MORE THAN ONE ROUTE OF INGRESS HAS BEEN REPORTED THIS IS CAPTURED UNDER ‘MULTIPLE ROUTES OF INGRESS’. THE NUMBER OF RESPONDENTS REPORTING EACH ROUTE OF INGRESS IS CAPTURED IN BRACKETS ALONG THE Y AXIS.

The distribution of reported ingress routes shows some clear patterns in how different flood sources manifest within properties, although there is variability in the data. Water entering up through the floor is most strongly associated with groundwater, accounting for 67% of responses in this category, with a further 17% linked to combine sources (of which we know is predominantly



attributed to groundwater to some extent). This aligns with expectations, as properties impacted directly by groundwater flooding will experience water rising up, exerting pressure through the floors and foundations of the building.

Water entering through doors, however, is predominantly linked to combined sources [75%], with a smaller proportion attributed to surface water. This suggests that overland flow or multiple interacting flood mechanisms are more likely to result in water breaching properties at ground level entry points.

'Multiple Routes Of Water Ingress' is also largely associated with combined sources [55%], with groundwater [27%] and surface water and fluvial flooding [both 9%], reinforcing the idea that more complex flood events tend to produce varied entry pathways.

Overall, a key trend is the strong relationship between groundwater flooding and below ground or structural ingress routes (floors and walls), while combined sources are more frequently associated with multiple or visible entry points such as doors. This supports earlier findings of generally low internal flood depths, as groundwater-driven events are less likely to produce rapid or relatively deep inundation events.

Analysis is limited by the low number of respondents that have reported internal flooding. With the low number of respondents reporting routes of ingress through walls, doors and toilets, no further analysis has been undertaken.

4.4.3 Basements and Cellars

Properties with basements, cellars or sub-floor voids (such as suspended timber or suspended concrete floor constructions) are inherently more susceptible to flood water ingress up through the ground, due to their direct interaction with surrounding ground conditions. Of the 29 respondents who reported having a basement or cellar, 14 indicated that they had previously experienced flooding within these spaces. Figure 15 presents the reported flood depths alongside the associated reported source of flooding.

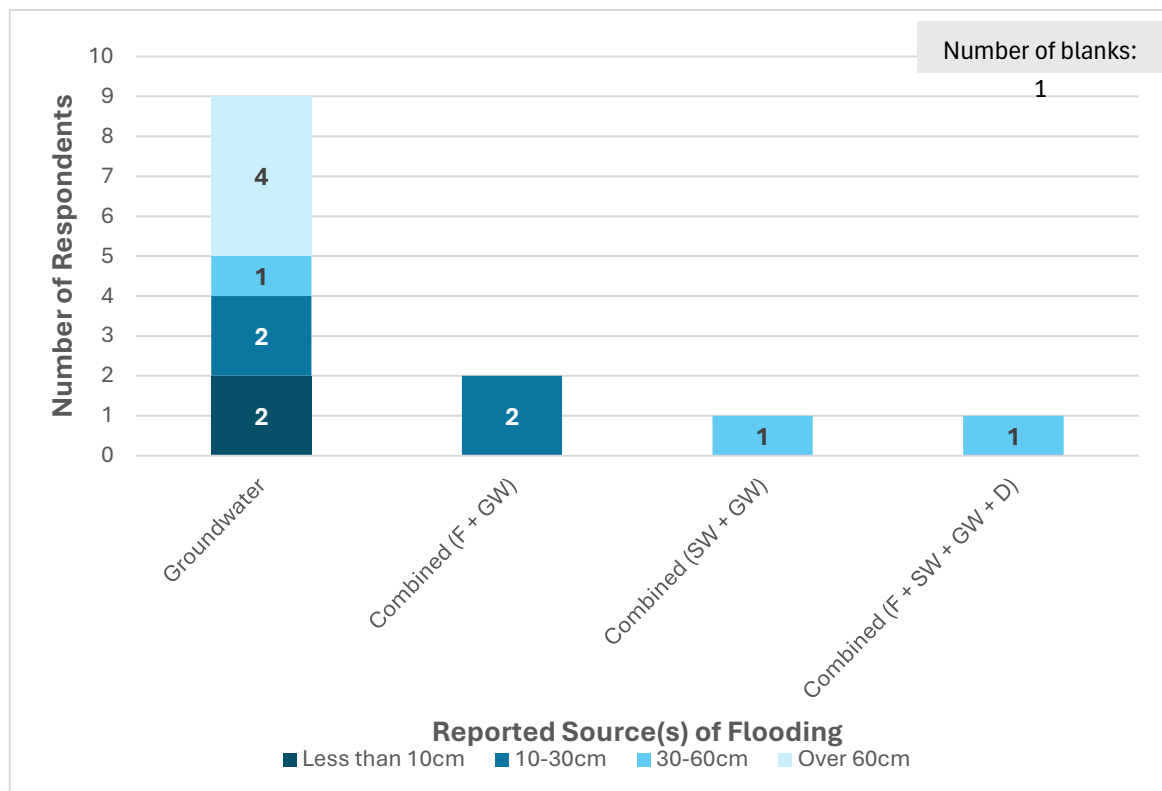


FIGURE 15 – A GRAPH TO SHOW THE INTERNAL DEPTHS WITHIN BASEMENT / CELLARS FOR THOSE RESPONDENTS WITH A BASEMENT / CELLAR AND EXPERIENCING PREVIOUS FLOOD EVENTS DURING OCCUPANCY. F: FLUVIAL; GW: GROUNDWATER; SW: SURFACE WATER; D: DRAINS/SEWERS.

A clear pattern emerges in that all reported cases of basement or cellar flooding are attributed either to groundwater alone [10 responses] or to combined sources [4 responses], with groundwater present in every instance. Notably, there are no cases where flooding which has affected basements / cellars and attributed solely to fluvial or surface water, and no respondents expressed uncertainty regarding the flood source. This strongly reinforces the role of groundwater as the dominant mechanism driving flooding in below-ground spaces.

Groundwater related flooding is observed across all recorded depth categories, from less than 10cm to depths exceeding 60cm. Notably, all instances of the most severe flooding (>60cm) are attributed exclusively to groundwater, suggesting that prolonged or significant groundwater rise can lead to substantial inundation within basements and cellars.

Although the relatively small sample size limits strength of definitive conclusions, the consistency of groundwater attribution across all cases is notable. This trend aligns with the physical behaviour of groundwater, which can rise gradually and exert sustained hydrostatic pressure on below-ground structures, leading to ingress into habitable spaces through floors and walls. The absence of surface water and fluvial attribution likely reflects the limited direct pathways for these mechanisms to affect sub-surface spaces compared to above ground parts of the property; however, as identified in earlier analysis, very few respondents reported flooding solely from surface water or fluvial sources, which limits the extent to which this observation can be robustly interpreted.



4.4.4 Flooding Impact

This section examines the impacts of flooding; initially analysing direct impacts and then moving onto indirect impacts.

4.4.4.1. Direct Impacts

Table 6 displays the number of times each aspect of a previous flood event which caused the most disruption or inconvenience was selected for those 53 respondents that have reported previous experience of flooding at their property. Some options were pre-written, with additional 'None of the above' or 'Other' options for those respondents to select if the categories listed did not adequately cover their own experience(s). Respondents were able to select more than one option, hence a count is displayed to portray the number of times each aspect was selected.

TABLE 6: FREQUENCY OF RESPONDENT SELECTIONS FOR ASPECTS OF PREVIOUS FLOOD EVENTS IDENTIFIED AS CAUSING THE MOST DISRUPTION OR INCONVENIENCE.

Q27. Reported aspect of previous flood event which caused the most disruption or inconvenience	Count
<i>'Property completely flooded and unable to live / work during flooding and reinstatement'</i>	7
<i>'Unable to use bathroom, kitchen and appliances during flood events'</i>	11
<i>'Unable to access the property'</i>	7
<i>'None of the above'</i>	16
<i>'Other'</i>	16
<i>No response (Blank)</i>	4

Of the pre-defined response options, the most frequently selected was *'unable to use bathroom, kitchen and appliances during flood events'*, cited by 42% of respondents who reported internal flooding. The remaining two pre-defined options were also selected by a notable proportion of respondents, indicating a range of significant disruptions experienced during flood events.

However, the most commonly selected responses overall were *'None of the above'* and *'Other'*. This suggests that the pre-defined categories did not fully capture the breadth of impacts experienced. To address this, qualitative analysis was undertaken on the additional information provided by respondents. The key themes identified are summarised below:



- Property damage and loss of belongings
- Prolonged drying and repair times
- Living room and other ground floor areas becoming flooded
- Access issues within the wider community
- Flooding of external areas (gardens, driveways)
- Flooded basements / cellars
- Emotional and Psychological impact
- Utility disruption
- Clean-up burden

"Lost all carpets, white goods, some furniture [...] Had to vacate to a hotel for two weeks. Took six months to remedy."

"Just fear as the water rose."

"House took six months to dry out, two ground rooms unusable for this time."

"We have to raise cellar contents above flood line & cellar becomes inaccessible except with boots."

The quotations above demonstrate how groundwater flooding can be particularly disruptive because impacts are often prolonged and difficult to predict, extending well beyond the rainfall event itself.

4.4.4.2. Indirect Impacts

Although a large proportion of the FEQ respondents have not experienced flooding at their property (91 respondents), many have suffered indirect, or secondary, impacts of flooding. This includes cases where properties were not physically flooded, but respondents experienced adverse consequences such as loss of trade/business for local shops or businesses, access issues, school closures, and longer-term health impacts that have arose as a consequence of flooding. 150 respondents answered Yes to Question 36: '*Have you been impacted by flooding indirectly*' [60%]. Figure 16 below displays the proportion of those respondents in each community reporting experience of indirect flooding impacts.

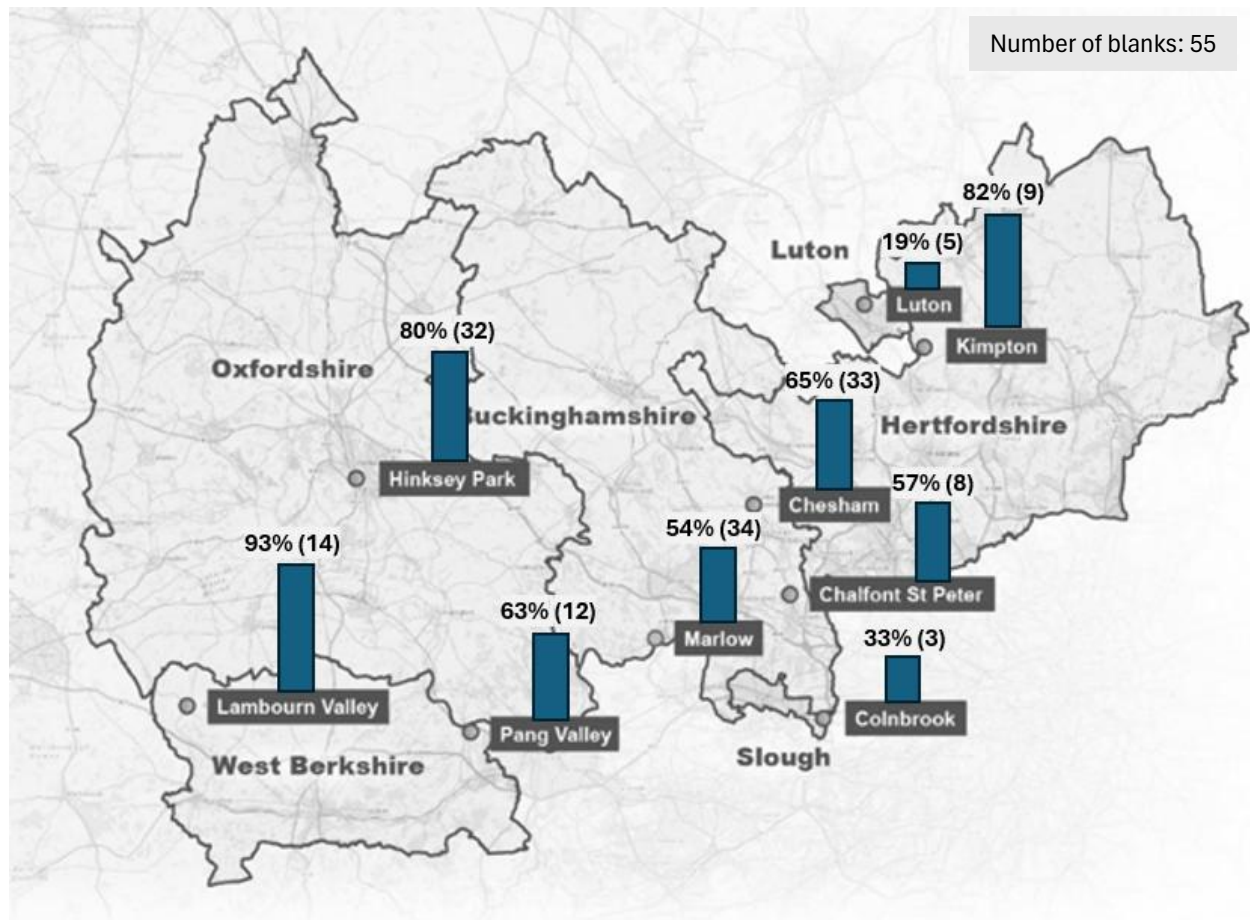


FIGURE 16 – A MAP DISPLAYING THE PERCENTAGE OF RESPONDENTS WHO ANSWERED ‘YES’ TO Q.36 ‘HAVE YOU BEEN IMPACTED BY FLOODING INDIRECTLY?’. PERCENTAGES HAVE BEEN CALCULATED OUT OF THE TOTAL NUMBER OF RESPONDENTS TO THE FEQ FROM EACH COMMUNITY, AS OPPOSED TO EXCLUDING THOSE WHO LEFT THIS QUESTION BLANK, INTERPRETING WHERE RESPONDENTS LEFT THIS BLANK AS ‘NO’ INDIRECT IMPACT.

For those who have noted experiencing indirect impact, respondents were asked to elaborate on this, again by selecting either a pre-written response, or ‘Other’, which was further specified in the following question. The table below shows the counts of selection for each pre-written indirect flood impact.



TABLE 7: FREQUENCY OF RESPONDENT SELECTIONS FOR INDIRECT FLOOD IMPACTS EXPERIENCED.

Q.37 Indirect Flood Impact	Count
<i>'Flooded roads / road closures'</i>	136
<i>'Blocked sewers / unable to use bathrooms / kitchens / appliances'</i>	47
<i>'Closure of local schools / businesses'</i>	15
<i>'Other'</i>	16
<i>No response (Blank)</i>	1

Across the nine communities, respondents reported a range of indirect impacts of flooding, reflecting that many experienced consequences even where floodwater did not necessarily enter their own property. The most frequently reported indirect impact was *'Flooded roads / road closures'*, which was selected by 91% the respondents to this question [Q.37]. This outcome highlights the widespread disruption to transport infrastructure across the communities, which in turn can impact access to work, school attendance, emergency services and delivery of goods and services.

The second most common issue was *'Blocked sewers / unable to use bathrooms / kitchens / appliances'*, selected by 31% respondents. This points to significant disruption to essential household services, likely linked to groundwater pressure and infiltration into drainage systems. Such impacts are particularly important in the context of groundwater flooding, as rising water tables can overwhelm sewer capacity or cause backflow, resulting in sanitation issues and basic household usability without visible surface flooding within the property.

A smaller proportion of respondents reported *'Closure of local schools / businesses'* however this still indicates meaningful disruption to community life and the local economy. Schools and business closures reflect both safety concerns and wider infrastructural strain, and they can have knock-on effects for childcare and community cohesion.

Lastly, a number of respondents selected *'Other'* and elaborated further on these indirect impacts not already listed. Key themes include:

- Loss of access and isolation, community disruption
- Utility disruption (electricity and drainage)
- Sewage contamination and sanitation hazards
- Localised surface flooding and property access issues
- Safety concerns, public safety risks



Indirect impacts far outweigh those that report flooding directly at their property, and this demonstrates how multi-dimensional and systemic the flood experience is across all of the nine communities. A finer-detail analysis is undertaken in Section 5.4, breaking down indirect impacts of flooding at a closer spatial level to understand more localised trends.

4.5 Existing Flood Resilience

Flood resilience refers to the ability of individuals and communities to anticipate, withstand and recover from flood events, reducing both immediate and long-term impacts. This can encompass both preparedness measures, such as signing up to flood alert / warning services and having a flood action plan, as well as physical resilience measures which may reduce water entry to properties or support faster recovery after flooding occurs.

4.5.1 Preparedness

4.5.1.1. Flood Alerts and Warnings Awareness

Fluvial flood alerts and warnings in England may come from the Environment Agency (EA), which provides the official national service (including Flood Alert, Flood Warning and Severe Flood Warning notifications by text, phone or email). Warnings can also be issued through local or specialist systems such as Project Groundwater, which is currently an 'Automated Service in Trial', which offers community-level groundwater flood alerts in specific high-risk areas⁵.

In addition, other sources of flood information in England include the Met Office (for weather warnings which may indicate flood risk), and local authority led or Lead Local Flood Authority updates, which may provide supplementary alerts for surface water or localised flooding.

The Table below outlines the extent to which formal flood alert and warning systems are available in each community, used here for context of FEQ results. The Environment Agency's ArcGIS Flood Alert and Flood Warning layers were used to build the understanding of coverage⁶. Descriptions of coverage and extents are high-level and present an indicative analysis that should not be treated as a definitive representation of coverage or extents.

⁵ [Welcome Screen](#)

⁶ https://services.arcgis.com/WQ9KVmV6xGGMnCiQ/arcgis/rest/services/EA_Flood_Alert_Areas/FeatureServer



TABLE 8: PRESENCE OF FORMAL ALERT AND WARNING SYSTEMS (ENVIRONMENT AGENCY (EA) AND PROJECT GROUNDWATER) ACROSS THE NINE PILOT COMMUNITIES. THIS DOES NOT COVER ALL FEQ RESPONDENT PROPERTIES AND IS SIMPLY AN INDICATIVE OF PRESENCE WITHIN THE COMMUNITY TO SOME EXTENT. NOTE THE ENVIRONMENT AGENCY DO NOT HAVE A FLOOD WARNING SERVICE FOR GROUNDWATER.

Community	EA Flood Alert Available?	EA Flood Warning Available?	Project Groundwater Warning Available?
Lambourn Valley	Yes – Fluvial and Groundwater	Yes – Fluvial Only	Yes
Pang Valley	Yes – Fluvial and Groundwater	No	Yes
Kimpton	Yes – Groundwater only	No	Yes
Chesham	Yes – Fluvial and Groundwater	Yes – Fluvial Only	No
Marlow	Yes – Fluvial Only	Yes – Fluvial Only	No
Hinksey Park	Yes – Fluvial Only	Yes – Fluvial Only	No
Chalfont St. Peter	Yes – Fluvial Only	Yes – Fluvial Only	No
Luton	Yes – Fluvial Only	Yes – Fluvial Only	No
Colnbrook	Yes – Fluvial Only	Yes – Fluvial Only	No

Environment Agency fluvial flood alerts⁷ are available to some extent across all nine pilot communities, with flood warnings⁸ also present in all except Pang Valley⁹. A more detailed spatial breakdown of flood alert / warning take-up is provided in Section 5.5; this section instead focuses on more general patterns across all FEQ respondents.

Question 29 asked respondents *'Is a Flood Warning or Flood Alert available for your property?'*. Respondents were able to select one or more of the following; *'Flood Alert / Warning for flooding from rivers'*, *'Flood Alert for Groundwater flooding'*, *'No'* or *'Don't know'*.

⁷ An Environment Agency Flood Alert means flooding is possible

⁸ An Environment Agency Flood Warning means flooding is expected

⁹ https://services.arcgis.com/WQ9KVmV6xGGMnCiQ/arcgis/rest/services/EA_Flood_Alert_Areas/FeatureServer

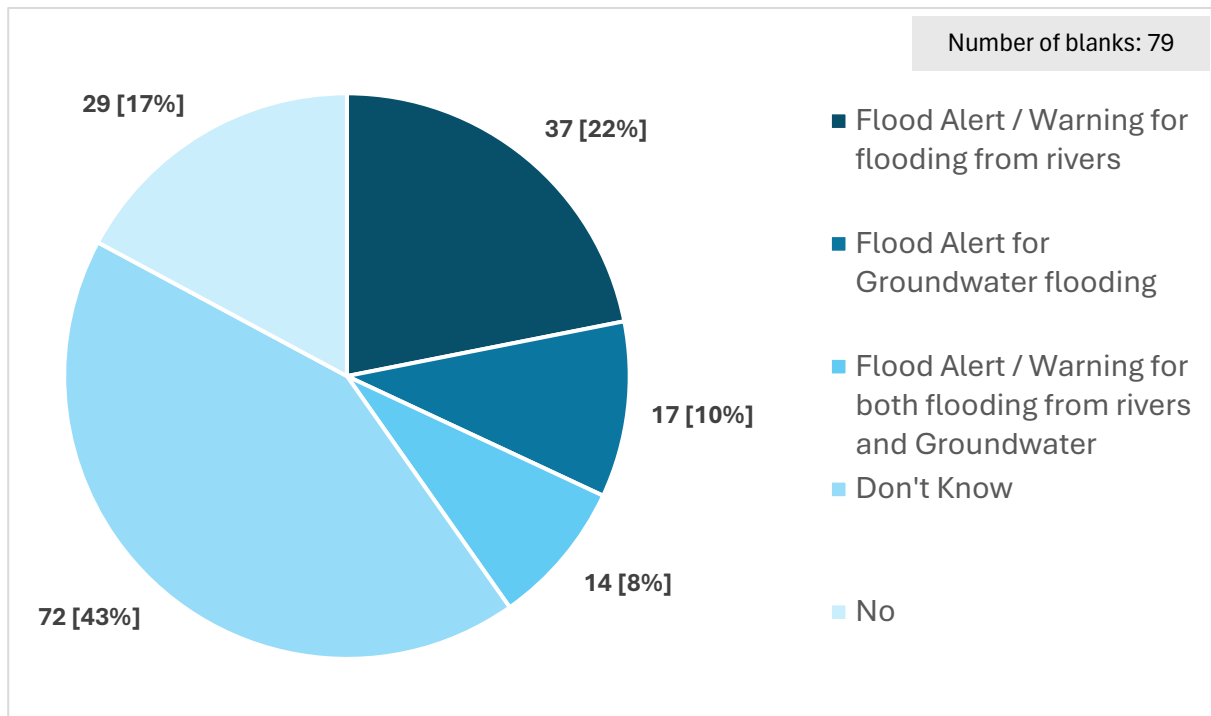


FIGURE 17 – A PIE CHART TO SHOW THE NUMBER OF PROPERTIES COVERED BY EACH TYPE OF FLOOD WARNING OR ALERT SERVICE, REPORTED BY THE RESIDENT.

Results from Figure 17 show;

- Only 40% of respondents to this question reported coverage by flood alert for fluvial and / or groundwater flooding;
- 17% of respondents stated their property is not covered by any alert / warning system
- The remaining 43% of respondents indicated they were unsure whether any service was available for their property.

When comparing these results with Table 8, which indicated Environment Agency fluvial flood alerts are available to some extent in all communities, it could indicate two things;

- A clear lack of awareness of these services; and/or
- Properties are located outside of the extent of the flood alert.

Coverage has not been verified at the individual property level, but these findings still indicate a notably low level of perceived coverage among respondents.

Additionally, 31 respondents indicate their property is covered by a groundwater alert service. 15 of these respondents are located within the three communities which have a Project Groundwater Alert available (Lambourn Valley, Pang Valley or Kimpton); 33% of all FEQ respondents in these three communities are aware of this service, which is again, a relatively low proportion. For the remaining 16 respondents reporting availability of a groundwater alert service, this likely reflects a combination of an Environment Agency groundwater alert (coverage not determined here due to a lack of mapping available and no property level comparison undertaken), misunderstanding,



informal / local alerting mechanisms, or misreporting, possibly suggesting some overestimation particularly of the groundwater alert coverage.

Overall, there is a clear dominance of uncertainty and lack of awareness of existing services available. Further engagement work should focus on raising this awareness, as a step towards increasing sign-up and consequently improving preparedness.

It is important to emphasise that Question 29 assessed awareness rather than uptake. No follow up questions asked about uptake specifically of these alerts / warnings respondents were referring to. Uptake was only asked in relation to the Environment Agency service earlier in the questionnaire (Q.19).

4.5.1.2. Flood Alerts and Warnings Uptake

Uncertainty is closely linked to risk perception. Among respondents who believe their property is at risk (Q28), 27% were unsure about alert / warning availability. This rises to 43% among those who believe they are not at risk, and 78% among those who do not know their risk status. Awareness of flood risk and awareness of alert / warning services therefore appear to be strongly correlated, with lower risk awareness associated with lower engagement overall.

Earlier in the questionnaire, respondents were asked specifically about uptake of the Environment Agency's flood warning service (Q.19). As shown in [Figure 18](#), uptake is low: although more respondents did respond 'Yes' than 'No', this equates to only 20% of all FEQ respondents.

A large proportion also left this question unanswered, which may indicate either non-engagement or lack of awareness of the service, but has been presented separately rather than absorbed within 'No' ([Figure 18](#)).

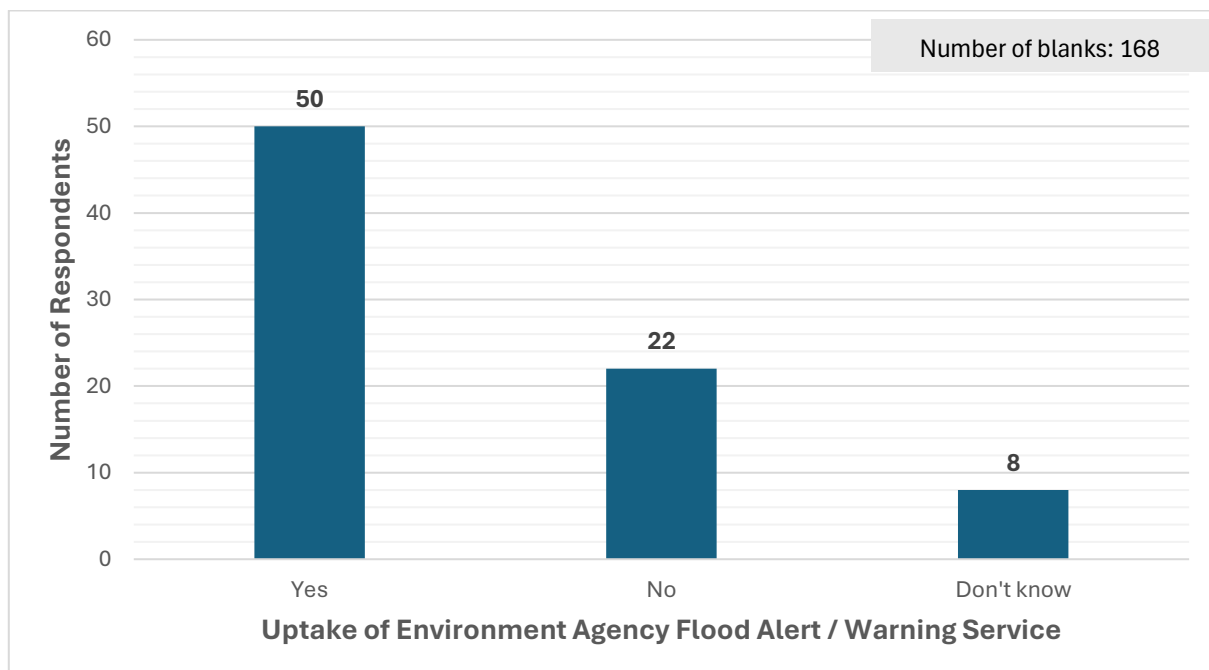


FIGURE 18 – A GRAPH TO DISPLAY WHETHER RESPONDENTS ARE SIGNED UP TO THE ENVIRONMENT AGENCY'S FLOOD WARNING SERVICE (Q.19)



Notably, 16 respondents with prior flooding experience are not signed up to receive the Environment Agency flood alerts/warnings. This may indicate

- Limited awareness of the service; and/or
- Some people may perceive the Environment Agency fluvial alerts less relevant for groundwater flooding; and/or
- Some residents may not trust the service; and/or
- Some residents, particularly those who have lived within communities long-term, may have their own proxy for when flooding is likely to occur based on previous experience, and rely on this as opposed to formal alert services.

These findings align with wider research demonstrating a strong relationship between risk awareness and engagement in protective action. For example, a study by the Red Cross¹⁰ found *“alarmingly low levels of awareness about flood risk and knowledge of how to prepare for and respond to flooding, particularly in areas with high social vulnerability to flooding”*. Additionally, government guidance consistently emphasises for people to know their risk and sign up for flood warnings¹¹. This relationship is also evident in the survey data: 83% of respondents who were aware of flood risk when moving into their property are signed up to the Environment Agency service, compared to 49% of those who were not aware at that time (Q.18).

Where the service is used, it is effective. Of the 50 respondents who reported being signed up, 62% received an alert or warning in advance of their worst flood. Most cases where no alert was received were associated with non-fluvial sources, for which warnings may not be available. Among those who did receive a warning, 94% said it provided sufficient time to prepare, demonstrating clear value for fluvial flooding. This demonstrates the effectiveness of the service where applicable, particularly for fluvial flood events, as well as highlighting the need for a widespread groundwater flood alert service.

Overall, the findings highlight a gap between provision, awareness and uptake. Improving communication around flood risk, clarifying the purpose and coverage of different alert types, particularly groundwater, and ensuring this information reaches beyond sign-up campaigns for more widespread awareness will be critical to increasing engagement. This is important not only for directly affected properties, but for wider community resilience to disruption.

¹⁰ [Public awareness and perceptions of flood risk in the UK](#)

¹¹ [Residents urged to be #floodaware - GOV.UK](#)



4.5.1.3. Personal flood action plans

Being aware of your flood risk is the first step towards taking protective action. Personal flood action plans are important to understand how to respond when a flood alert and/or warning are received, outlining the steps to be taken to minimise potential flood damage.

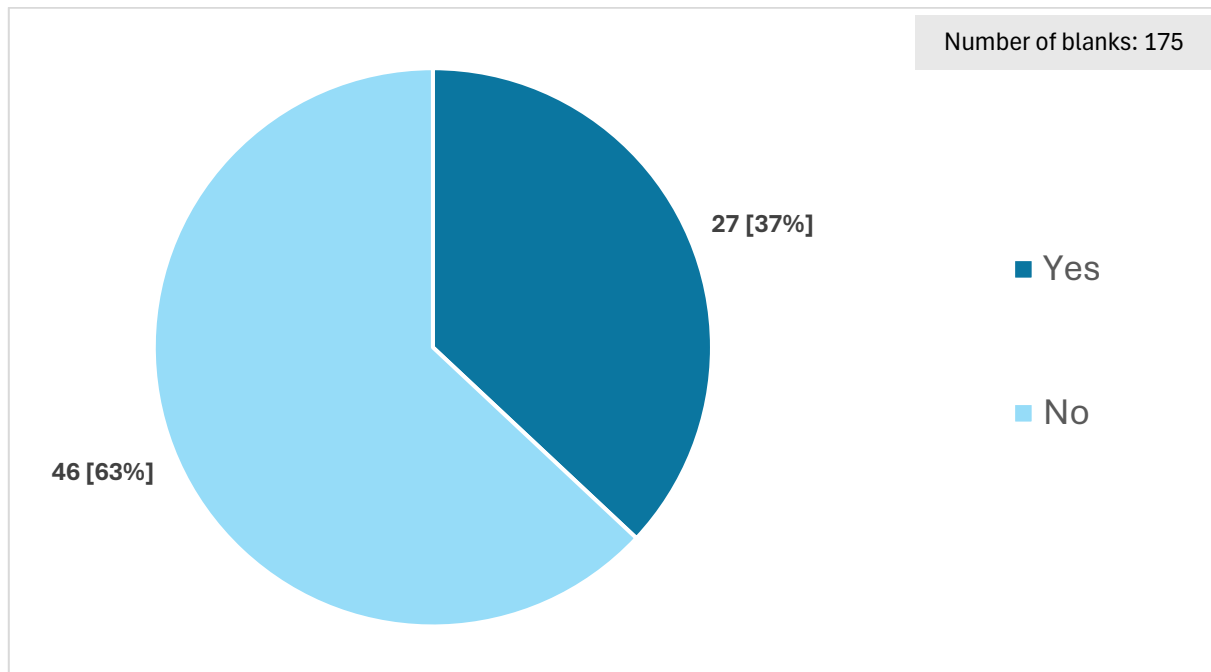


FIGURE 19 – A CHART DISPLAYING WHETHER RESPONDENTS HAVE A PERSONAL FLOOD ACTION PLAN IN PLACE (Q.22)

The pie chart above (Figure 19) indicates a low level of engagement with this question, with 175 respondents leaving it unanswered. This is an interesting outcome in itself, possibly reflecting an uncertainty about what a flood action plan entails. Among those who did respond, a majority reported not having a personal flood action plan [46 respondents; 63%], compared to 27 respondents [37%] that do (making up only 11% of all FEQ respondents).

A compelling pattern emerges when examining the relationship between prior flood experience at their property and the presence of a flood action plan. Of the 27 respondents who have a plan in place, 23 [85%] have previously experienced flooding. This aligns with expectation, as direct experience of flooding and associated damages is likely to increase risk awareness and encourage proactive protective actions.

However, this still means that the remaining 30 respondents who reported previous flooding do not have a flood action plan. Further analysis of reported internal flood depths reveals a clear trend. Among those with flood experience but no plan, 63% reported that water did not actually enter the property, suggesting impacts were limited to curtilage or non-habitable spaces. In contrast, 70% of those with both flood experience and a flood action plan reported internal flood depths. This suggests that experiencing greater flood depths, and therefore likely greater damage, is associated with a higher likelihood of adopting a flood action plan.



Findings highlight the need for increased awareness and preparedness, particularly for those properties that have experienced flooding in the past but not to such an extent water reaching within habitable spaces. Individuals who have experienced flooding, or live in at-risk areas, should be encouraged to develop a flood action plan to enable a timely and effective response to flood warnings or imminent risk.

No further questions were asked to understand what these personal flood action plans contain therefore no further analysis has been undertaken.

4.5.2 Existing Property Flood Resilience measures

The questionnaire also explored the extent of existing physical resilience measures at respondents' properties, either to resist water entry and/or aid recovery following a flood event. In the questionnaire, no question was simply asked whether respondents do or do not have flood resilience measures, rather the question '*What measures do you have installed?*' was posed (Q.31). Therefore, for the purposes of this analysis, where this question has been left blank, this is interpreted as having no existing resilience measures.

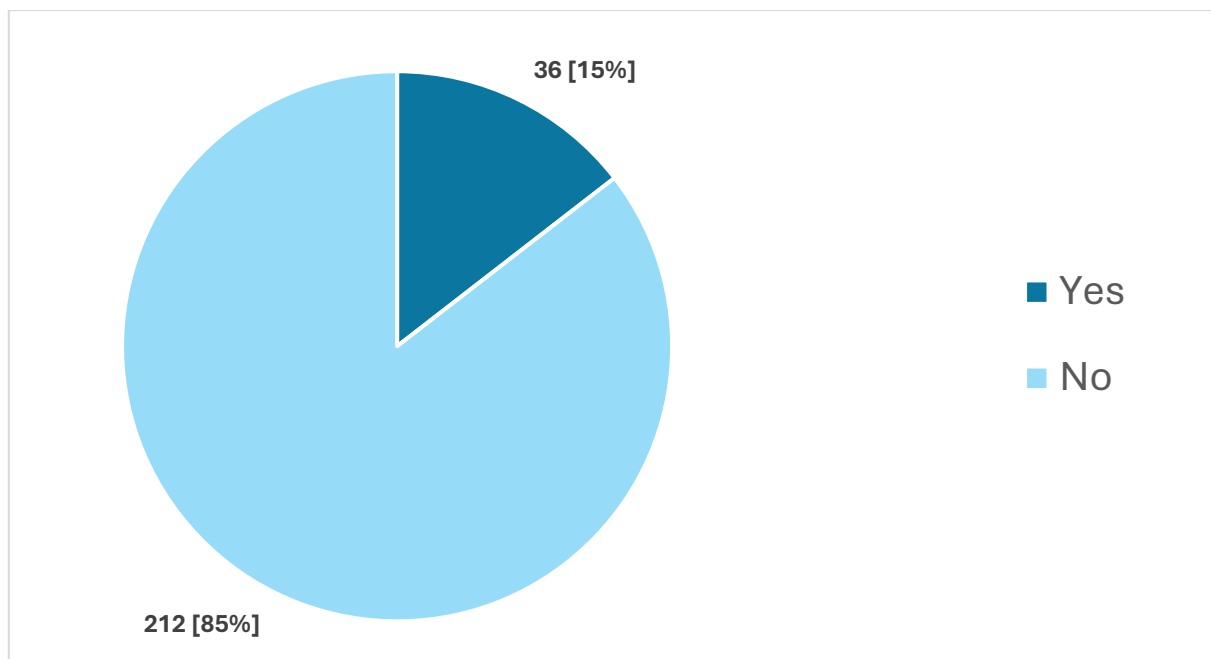


FIGURE 20 – PIE CHART TO DISPLAY WHETHER RESPONDENTS HAVE REPORTED EXISTING FLOOD RESILIENCE MEASURES AT THEIR PROPERTY.

Most respondents do not have any flood resilience measures in place: 212 [85%] reported no measures compared to just 36 [15%] who do. Among those with measures installed, 22 [61%] have previously experienced flooding at their property. Of the remaining 12 respondents who reported having measures but no prior flooding, 8 [67%] have identified their property to be '*at risk of flooding*' (Q.28). This portrays again the link between awareness of the risk faced by the property as well as experience of flooding and making steps towards protective action, in this case having property flood resilience measures at the property.



4.5.2.1. Types of Existing Resilience Measures

Table 9 below summarises the range of measures mentioned by respondents and frequency this option was selected. These have been grouped under the following types:

- **Resistance:** Resistance products and measures that resist water entry to the building such as flood doors, airbricks and water-resistant paint/mortar etc.;
- **Reduce:** Products and measures that reduce the impact and manage the water that may still leak or seep through the building fabric and/or flood resistance products e.g. sump and puddle pumps, cavity drainage systems, tanking etc.;
- **Realign:** Realigning the pathway of floodwater through off-building physical structures such as boundary walls, embankments, landscaping, or raising the receptor which includes raising floors, changing to a less vulnerable use;
- **Recoverability:** materials, products, and construction methods that prevent the internal fabric of the property from being unduly damaged by floodwater and allow it to recover quickly after a flood e.g. flood recoverable kitchen units, floor coverings, doors, skirtings, raised electrical sockets etc.; and
- **Drainage improvements.**



TABLE 9: EXISTING RESILIENCE MEASURES REPORTED BY RESPONDENTS, AND THE NUMBER OF TIMES THEY WERE SELECTED BY RESPONDENTS. IT SHOULD BE NOTED THAT MANY RESPONDENTS SELECTED MORE THAN ONE MEASURE.

Type of Resilience Measure	Measure	Total number reported
Resistance	Flood barriers	13
	Flood doors	2
	Anti-flood airbricks / Air Brick Covers	12
	Non-Return Valves	3
	Toilet Bung	5
Pumping (Reduce)	Sump pump	13
	Deployable pump	9
	Wall tanking / waterproofing	3
Realign (off-building)	External flood wall	5
	External flood embankment or landscaping	4
Recoverability	Flood recoverable flooring	8
	Flood recoverable walls / plasterboard	3
	Flood recoverable skirting	3
	Flood recoverable kitchen	3
	Raised electrical sockets	8
Drainage	Improved drainage systems or storage	4
N/A	Other	5

Resistance and pumping measures are the most commonly reported, with flood barriers, airbricks covers and sump pumps appearing most frequently. These are typically widely promoted options in property flood resilience, and consistent with the dominant flood mechanisms across the study areas of groundwater.

For those respondents selecting 'Other', there was a subsequent free text question to allow further details to be provided. Themes outlined by respondents include:

- Elevated floor levels and raised access



- Sandbags
- Holes within concrete floor filled
- Improved water proofing at utility entry points
- “Well-draining garden”
- “[...] knocked down part of our building and rebuilt to gain side access so water can run down side”

These descriptions, together with [Table 9](#), display the broad range of resilience measures implemented by respondents. Property flood resilience is not a one size fits all approach; the measures implemented depend on factors such as building characteristics, cost, and type and experience of flooding, meaning properties often adopt different strategies to improve resilience.

4.5.2.2. Funding of Existing Resilience Measures

Property Flood Resilience measures may be funded through a number of mechanisms in England; private funds, insurance, local authority grant schemes and Environment Agency funds. Funding mechanisms used to implement existing flood resilience measures varies across respondents, with some combining multiple funding sources. It is also worth noting that all of the respondents that have existing resilience measures are property owners rather than tenants, further reinforcing the earlier point that tenants are often powerless in having resilience measures installed at the properties they live in.

Figure 21 shows the split of streams used by respondents to fund the existing resilience measures.

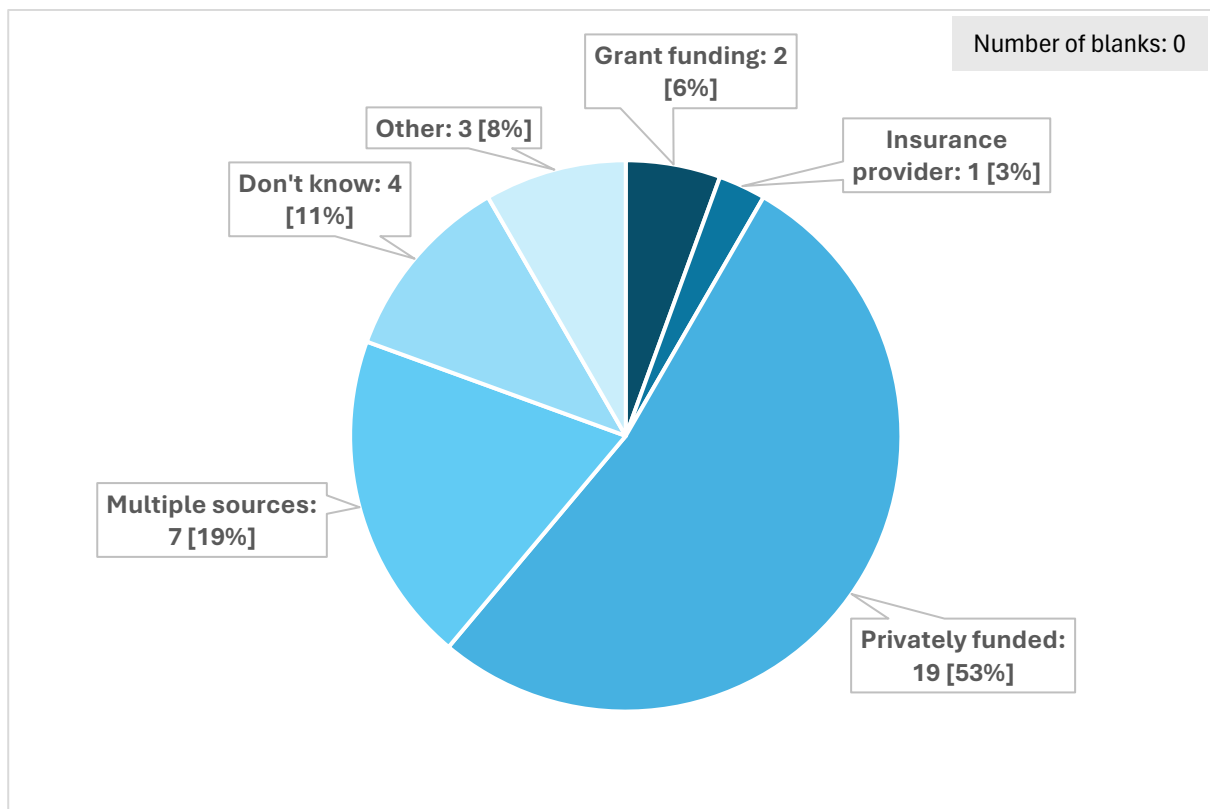


FIGURE 21 – A PIE CHART TO SHOW FUNDING STREAMS UTILISED BY THOSE RESPONDENTS WITH EXISTING FLOOD RESILIENCE MEASURES.

Over half of homeowners who have implemented flood resilience measures have relied entirely on private funding [53%]. This indicates that, for the majority of respondents in this group, personal financial resources remain the primary means of funding physical protection and adaptation efforts. Extending this trend further, every case in which multiple funding sources were used still included at least some level of private contribution. Whilst this demonstrates a willingness to invest in resilience, it also raises questions regarding affordability and access to initiatives such as Build Back Better or grant funding. Additionally, the number of responses where funding streams were supplemented with private funds highlights the limited extent to which these streams of funding often cover.

By contrast, funding from grants and insurance providers accounts for only 25% of responses, whether used alone or alongside other funding streams. This comparatively low proportion suggests either limited uptake of these external funding mechanisms, potential barriers in accessing them, or constraints in their availability.

Particularly of note is only one response noted resilience measures funded through their insurance provider entirely, and a further three noted resilience measure funded through insurance provider and other streams (always supplemented with private funding). Flood Re drives Build Back Better (BBB); this initiative is a joint effort between the UK Government and the insurance industry which is aimed at providing homeowners with up to £10,000 for flood resilience measures when recovering post-flood. However, this is only available to properties built before 2009 and excludes



certain leasehold and all commercial properties. Critically, any householders unable to gain insurance means that they cannot access BBB and therefore do not receive that support in improving the resilience of their homes post-flood. This highlights the need for alternative, non-exclusionary support for properties identified to be at risk of flooding or those that have experienced historic flood events, for example through local grant or Environment Agency Schemes.

An assessment of properties built from 2009 onwards within areas identified as being at risk of groundwater flooding through modelling undertaken as part of Project Groundwater has not been undertaken. Therefore, it is not possible to determine how many respondents' properties are ineligible for the BBB scheme or whether this contributes to the low number of respondents who reported receiving funding for property flood resilience measures through this mechanism.

Overall, the data points to a strong reliance on self-funding among homeowners, with external financial support playing a more supplementary and less dominant role in enabling resilience measures. This may also explain the low number of respondents who do have resilience measures in place, even if they are aware they are at risk or have experienced flooding at their property previously.

4.5.2.3. Effectiveness of Existing Resilience Measures

It is important to include analysis of the effectiveness of existing measures for a number of reasons; some measures may be past their design life or operational lifespan, poorly suited to the specific property or flood risk mechanisms, or insufficient to cope with depths or prolonged flood durations, an issue that is particularly prevalent in cases of groundwater flooding. Question 33 of the FEQ asked: '*How effective were your existing flood resilience measures?*'. Figure 22 displays the results.

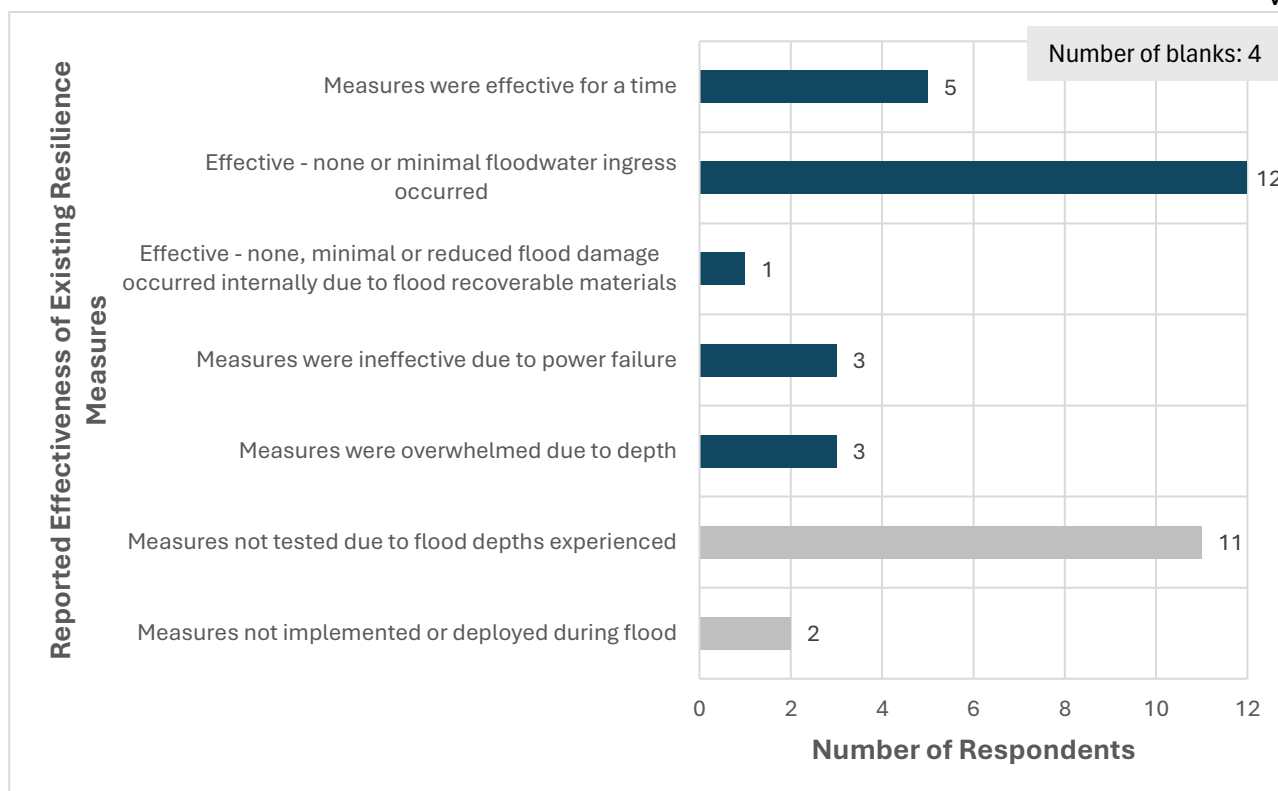


FIGURE 22 – A BAR GRAPH DISPLAYING THE REPORTED EFFECTIVENESS OF EXISTING RESILIENCE MEASURES

The graph is colour coded to display positive (green), negative (red), and neutral (grey) responses. Respondents were able to select multiple options therefore the graph reflects a count of the number of times each option was selected.

The wide range and combinations of resilience measures reported, alongside variation in their assessed effectiveness, limits the ability to make direct comparisons and identify clear trends between specific types of measures (Table 9), and their performance (Figure 22). This limitation is further exacerbated by the relatively low number of respondents with existing resilience measures. Accordingly, analysis of effectiveness is based on the 32 respondents who report having resilience measures and responded to this question.

Overall, responses were mixed but generally positive. Measures were reported as fully effective 13 times, with a further 5 reports of measures being 'effective for a time'. Of these, 3 respondents stated reasons for their eventual failure: due to power failure and/or being overwhelmed due to the depth of flood water.

This is particularly relevant in the context of groundwater-related flooding. In such cases, resistance and pump systems can be compromised by prolonged flooding duration, which the measures may not be designed to withstand. This underscores the need for careful consideration when designing Property Flood Resilience when groundwater is a primary mechanism.

4.6 Health and Wellbeing impacts



The following section turns to look at the health and wellbeing impacts. Flooding can have significant impacts on health and wellbeing, including both physical health risks (such as injury, contamination, and illness) and wider psychological effects such as stress, anxiety and trauma. These impacts are increasingly recognised as an important area of study, particularly surrounding the mental and emotional burden of flooding, and can include both those directly and indirectly impacted by flooding. The impacts can include people who witness flooding, or those who live with the ongoing worry and uncertainty of living in at-risk areas. As such, this analysis looks at responses across all FEQ respondents, not just those who report previous flood experience, to reflect the broader and more diffuse nature of health and wellbeing impacts associated with flooding.

Question 38 of the FEQ asked: *‘Has your personal health and wellbeing, including emotional and mental health, been impacted as a result of the flooding experienced?’*. Figure 23 displays the results.

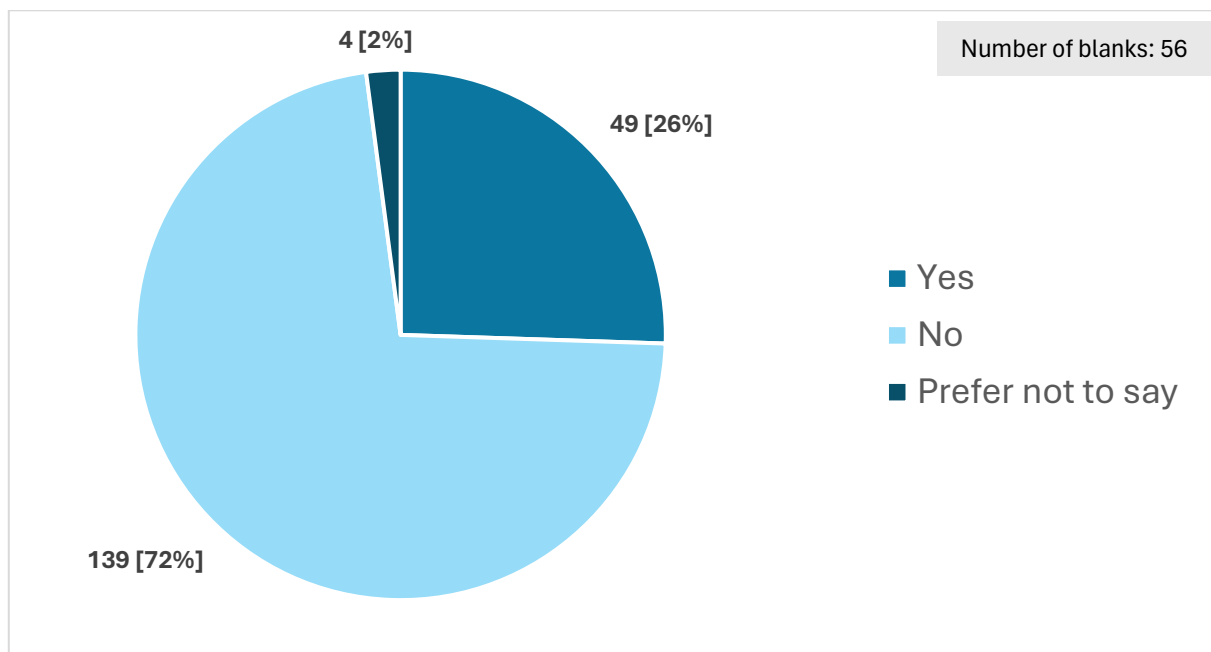


FIGURE 23 – A PIE CHART SHOWING RESPONDENTS WHO HAVE EXPERIENCED HEALTH AND WELLBEING IMPACT AS A RESULT OF FLOOD EXPERIENCE

Of those that responded to this question, the majority have not reported any impact on their personal health and wellbeing [72%], although a notable number have answered ‘Yes’ to this question [49; 26%].

An analysis of the relationship between reported health and wellbeing impacts (Q.38) and previous flood experience at the property during occupancy (Q.12) does not indicate a clear trend, with no evidence that those who have been directly flooded are more likely to report mental or physical health impacts than those who have not amongst respondents. Similarly, no consistent relationship is observed between indirect flood exposure (Q.36) and reported health effects, suggesting that impacts are highly variable and not solely determined by exposure type or



severity. Instead, the extent of health and wellbeing impacts may be influenced by a range of individual and contextual factors including depth, duration and extent of flooding, level of disruption, pre-existing health conditions, personal resilience and perceived risk or ongoing anxiety about future flooding.

For the 49 that have reported impact to their personal health and wellbeing, the below Figure displays how many of those have received medical support.

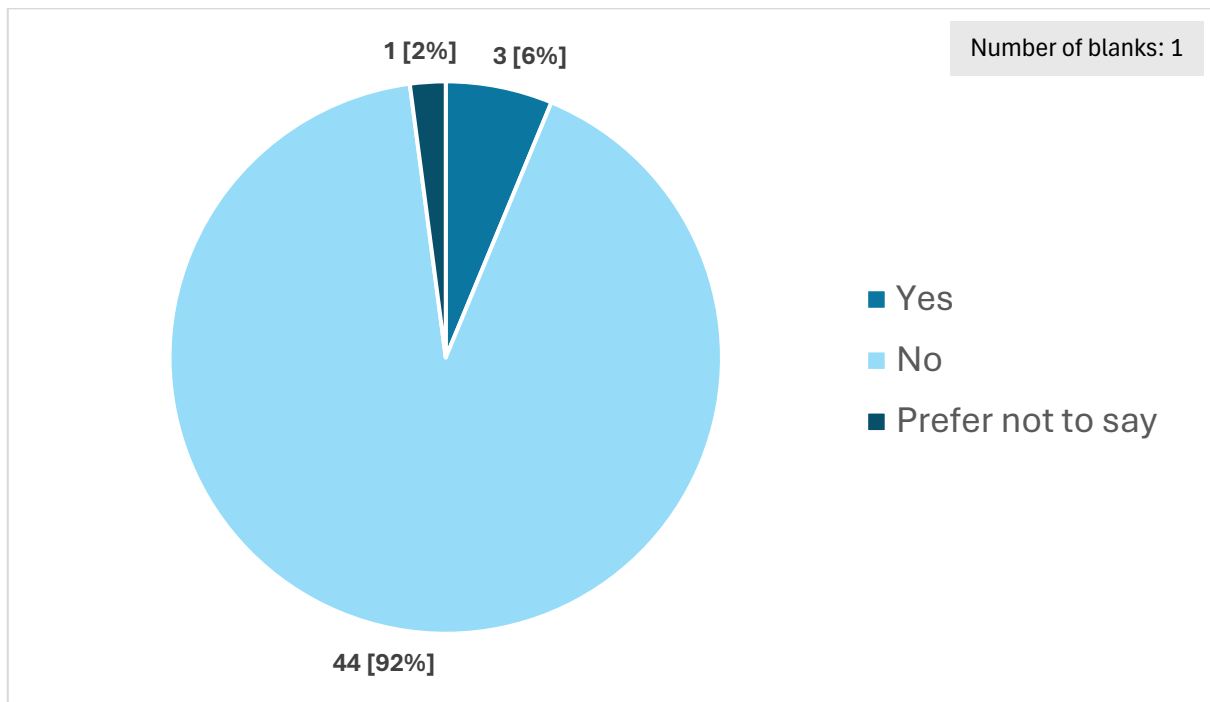


FIGURE 24 – A PIE CHART DISPLAYING WHETHER THOSE RESPONDENTS REPORTING IMPACT TO THEIR PERSONAL HEALTH AND WELLBEING HAVE RECEIVED ANY MEDICAL SUPPORT.

It is clear from Figure 24 that very few people have received medical support to help them through the impact flooding has had on them. Although 3 respondents have reported receiving support [6%], 44 [92%] of respondents have not received any support. There may be several reasons for this;

- There is not the support available
- Individual does not want to receive support / does not feel it is needed;
- Fear that impact felt does not warrant seeking support;
- Lack of awareness of what support is available;
- Long wait times;
- Potential costs if seeking support from private services.

As a result, a significant proportion of flood affected individuals rely on informal support networks such as family and friends, or community groups rather than formal medical intervention, highlighting the importance of these support networks.



4.7 Flood Insurance Details

Flood insurance plays a critical role in managing the financial consequences of flooding, providing a mechanism through which households and businesses can recover more quickly from damage and disruption, with a lesser financial burden. However, access to and affordability of flood insurance is not uniform, and coverage is shaped by factors such as property location and insurer policies, making it an important area of further examination within the wider context of flood resilience and recovery. Respondents to the FEQ were asked to expand on their flood insurance cover, including experience of obtaining this and any issues in receiving pay-outs (Qs. 9-11). Figures 25-27 display the results.

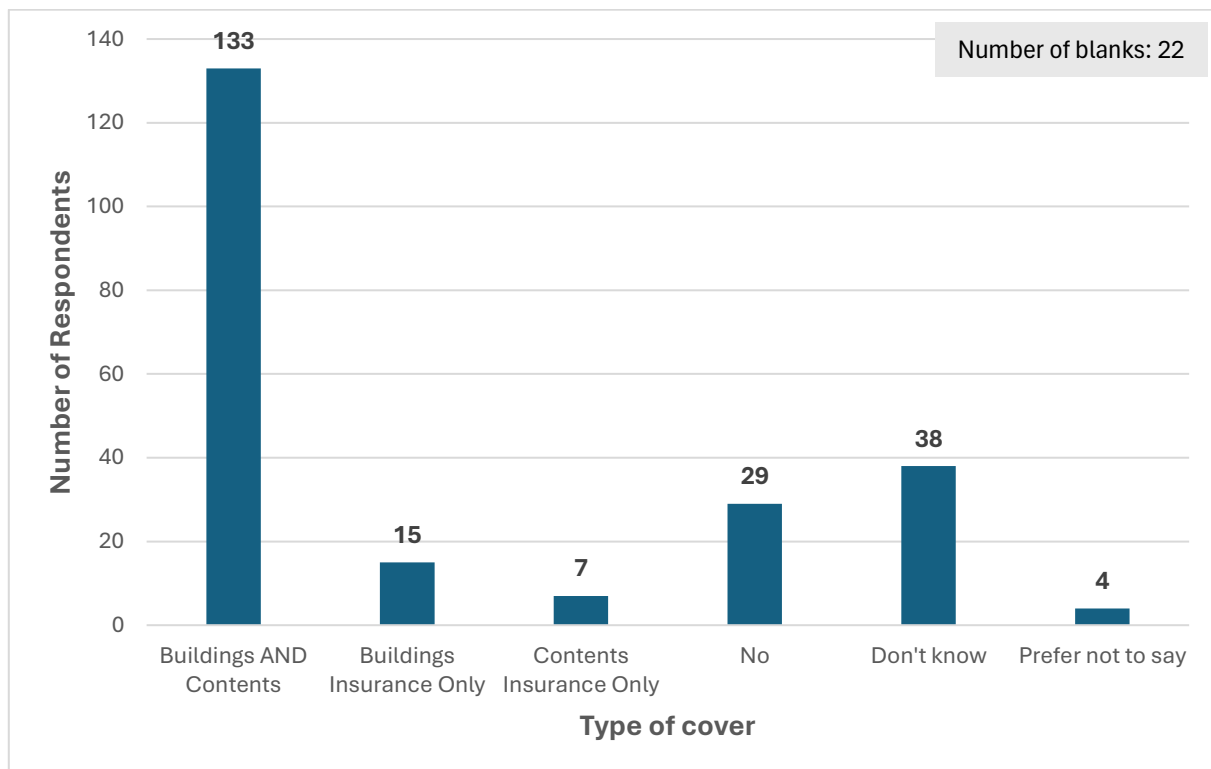


FIGURE 25 – A BAR CHART TO SHOW NUMBERS OF RESPONDENTS WHO HAVE EACH TYPE OF FLOOD INSURANCE COVER.

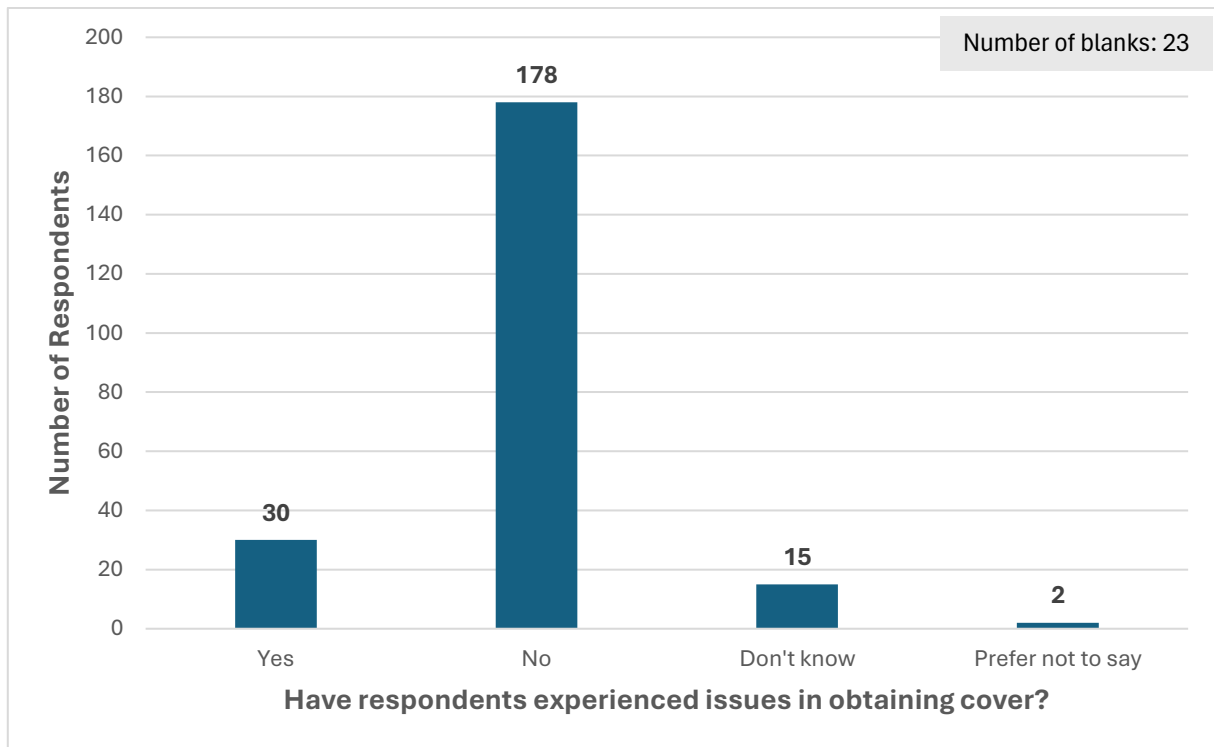


FIGURE 26 – A BAR CHART DISPLAYING IF RESPONDENTS EXPERIENCED ISSUES IN OBTAINING FLOOD INSURANCE COVER (BUILDINGS OR CONTENTS) DUE TO THE PROPERTY’S FLOOD HISTORY OR FLOOD RISK

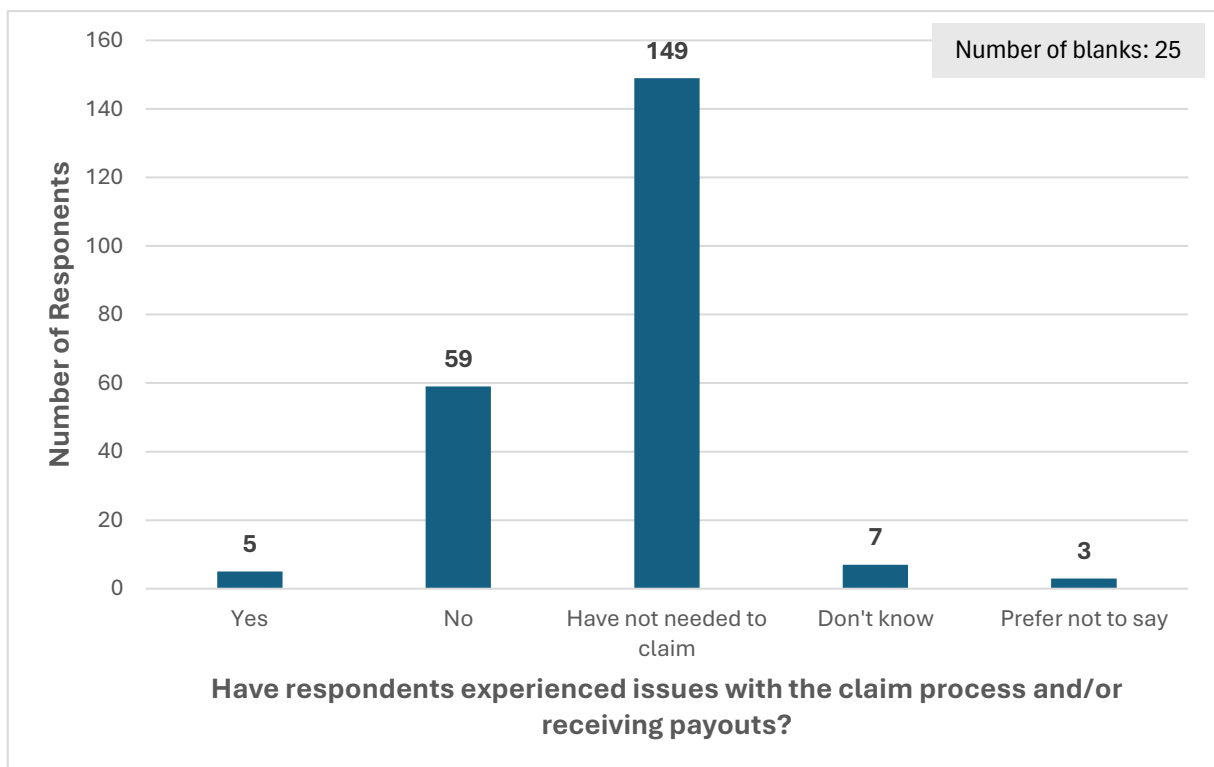


FIGURE 27 – A BAR CHART DISPLAYING IF RESPONDENTS SOUGHT TO CLAIM FOR A PAYOUT FROM INSURER FOLLOWING A FLOOD EVENT, AND IF THEY HAVE EXPERIENCED ISSUES WITH THE CLAIM PROCESS AND/OR RECEIVING PAYOUTS



Most respondents who answered this question appear to have some level of flood insurance cover:

- A clear majority [133, 59%] have both buildings and contents cover, indicating relatively comprehensive protection.
- Smaller groups rely on partial cover [15 buildings only; 6%, 7 contents only; 3%].

However, a notable minority either lack cover [29; 13%] or are uncertain [38; 17%], suggesting gaps in awareness, access to insurance or understanding of policy provisions.

Whilst most respondents did not report difficulties obtaining insurance, 30 respondents [13%] stated that they had experienced challenges. This is a notable proportion and may underestimate the true scale of difficulties, particularly when considering the number of respondents who selected 'Don't know' or left insurance related questions unanswered. Insurance is a frequently raised concern during community engagement activities undertaken through Project Groundwater, with residents often expressing uncertainty regarding the implications of flood risk information and modelling on future insurance availability and affordability.

The findings also highlight potential differences between tenure groups. As identified earlier in this report, tenants were underrepresented within the FEQ responses. For some tenants, insurance arrangements may be managed by landlords, freeholders or management companies, meaning occupants may be unaware of the extent of cover in place, including whether flood damage is covered. Consequently, levels of uncertainty regarding insurance may be greater than the survey results alone suggest.

Groundwater flooding presents additional challenges within the insurance landscape. Compared to fluvial and surface water flooding, groundwater flood risk information is less widely available and less consistently represented within publicly accessible flood mapping. As a result, property-level groundwater exposure may not always be fully understood by either insurers or policy holders. In some circumstances, policies may contain exclusions or limitations relating to water entering a property through the ground, potentially leaving houses underinsured despite holding building and/or contents cover.

Only five respondents [2%] reported difficulties receiving an insurance payout. Whilst this is encouraging, interpretation should be cautious as most respondents [149; 67%] reported never having made a claim. Consequently, the survey provides limited evidence regarding the effectiveness of claims processes, claim outcomes or the affordability of insurance following a flood event. In practice, many of the challenges associated with flood insurance emerge after a claim has been made, when households may experience increased premiums, higher excesses, reduced cover options or difficulties securing continued cover.

These findings provide valuable insight into household insurance experiences, particularly given the limited national scale evidence currently available regarding flood insurance affordability, accessibility and claims outcomes. Whilst the FEQ suggests that many respondents currently have some level of flood insurance protection, it also highlights important areas of uncertainty and potential vulnerability.



To gain a further understanding of individuals' experiences, respondents were asked to provide further detail regarding flood insurance following Question 11: Please provide any further detail you are comfortable to share regarding your experiences regarding your insurance provider. Some qualitative analysis has been undertaken to draw out key themes identified as well as some demonstrative quotes.



Dramatic cost and premium increases

“When our policy came up for renewal it suddenly increased to almost double” – Marlow resident.

“insurance companies [...] provided quotes 3-5 times higher than a quote without flood insurance” – Marlow resident.

Difficulty finding coverage

“My insurer was fine until last year, then I got a letter stating they wouldn’t insure me in the future” – Chesham resident.

Groundwater flooding exclusions

“It wasn’t clear to me until recently that my current insurer did not cover groundwater flooding” - Hinksey Park resident.

“Our insurance introduced a clause whereby flooding due to a slow build up was not covered i.e. groundwater” – Kimpton resident.

Insurers’ view of risk

*“[...] when the additional flood defences were constructed at *area*, the insurance companies all said there was an increased risk of flooding and hence hiked prices significantly upwards even though the flood defences had lowered the probability of flooding [...] computer system stated otherwise” – Marlow resident.*

“insurance companies did not take [flood resilience measures] into consideration” – Marlow resident.



Positive experience

“Our insurers and underwriter [...] were both very helpful and no problems with payment” – Marlow resident.

“When flooded [insurance provider] ensured that repairs and reinstatement were all covered and we had excellent service” – Marlow resident.

Insurance was one of the most frequently discussed issues raised during community engagement activities undertaken by Project Groundwater. Whilst the FEQ provides valuable insight into local experiences, national evidence regarding insurance coverage, affordability, claims outcomes and uptake of resilience measures remain limited. There remain significant gaps in national-scale data concerning insurance affordability, claims success rates and time taken for pay-outs.

In summary, respondents reveal complex landscape, facing escalating premiums, coverage difficulties, and disconnect between actual property-specific risks and insurers assessments. While some do have positive claims experiences, the overall trend shows increasing challenges in obtaining affordable, comprehensive flood coverage.

4.8 What does resilience mean?

The term climate resilience is being used increasingly in recent years. Although the term is ever evolving and sometimes contested as a term, the concept is important; the ability of a system, community or society exposed to climate hazards to absorb and ‘bounce back’ or recover from the effects of a climatic hazard. A climate-resilient system is able to respond in a timely and efficient manner, without having disastrous or long-lasting negative effects on said system, community or society¹².

Question 35 of the FEQ asked respondents: ‘*What does the term flood resilience mean to you?*’. This was a free text question, with no further prompts. Although 99 respondents left this question blank, 149 respondents did provide some response. The word cloud displayed in [Figure 28](#) shows the key themes pulled out of these responses, with the size of each theme representative of the number of times this was mentioned.

¹² [Climate Resilience Definitions | UKGBC](#)

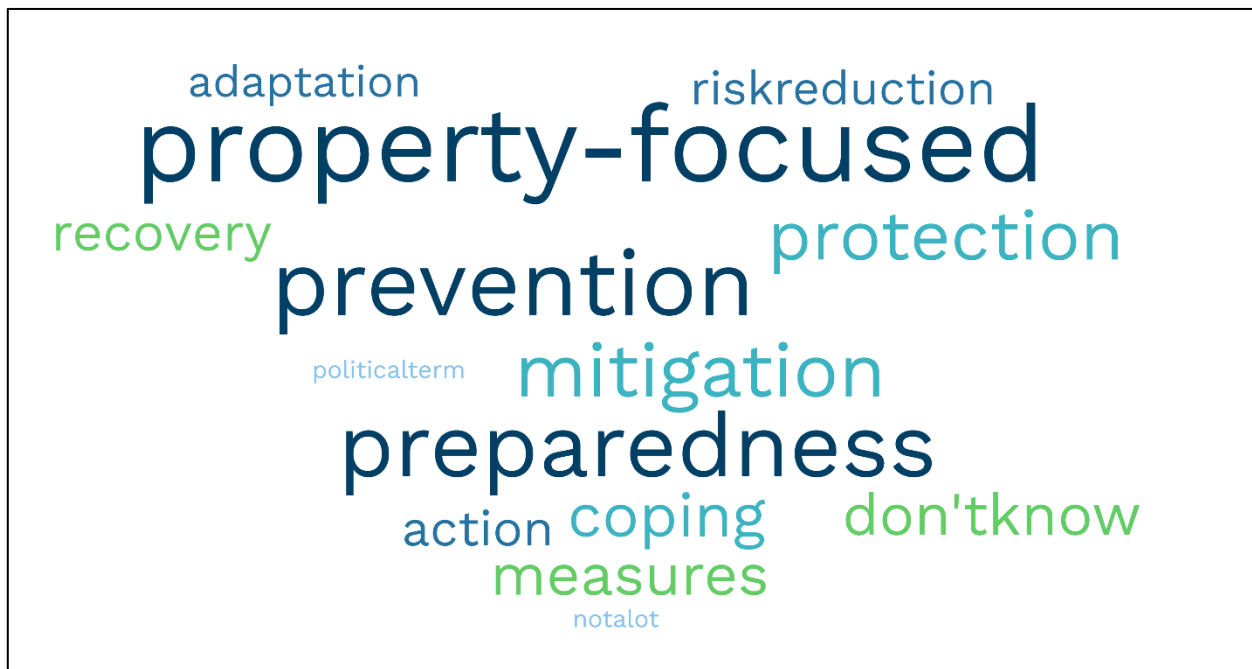


FIGURE 28 – WORD CLOUD SUMMARISING KEY THEMES DRAWN OUT OF FREE TEXT ANSWERS WHEN RESPONDENTS WERE ASKED WHAT RESILIENCE MEANS TO THEM

Property-centric thinking clearly dominated the responses; people have often interpreted flood resilience very personally at the home level as opposed to community or system level. However, this is not unexpected given the framing of the question, asking not for a definition but for what the term means at the personal level. There is also a notable divide between a prevention-oriented mindset (focused on stopping flooding), and a more resilience-oriented perspective (emphasising the ability to cope with and recover from flood events), alongside some emerging recognition for the need for adaptation.

Although the question was relatively broad, it elicited valuable insights into how the concept of 'flood resilience' is understood. While a small number of responses reflected scepticism or uncertainty, the overall tone was positive, suggesting that respondents generally recognise the importance of the concept and are receptive to its underlying principles.



4.9 Interest in Property Flood Resilience.

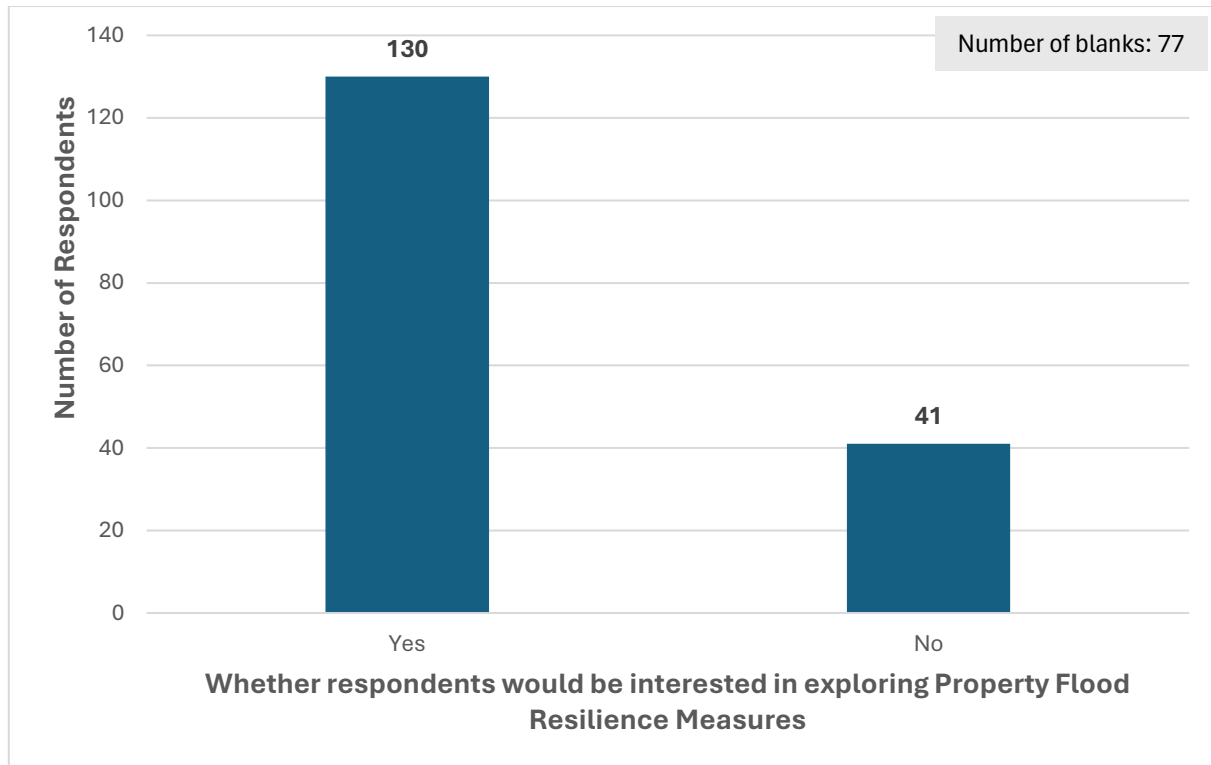


FIGURE 29 – A GRAPH TO DISPLAY RESPONSES WHEN ASKED IF RESPONDENTS WOULD BE INTERESTED IN EXPLORING WHAT FLOOD RESILIENCE MEASURES MAY BE SUITABLE FOR THEIR PROPERTY (Q.43).

Interest amongst respondents in exploring Property Flood Resilience measures which may be appropriate for their property was relatively high. A total of 126 respondents gave permission to be contacted with further information about potentially receiving a Property Flood Resilience survey. This highlights a clear willingness amongst respondents to enhance their resilience to flooding and to learn more about potential measures that could be implemented.



5.0 Comparative Analysis Across Community Groups

Building on the initial analysis of all 248 questionnaire responses, this section adopts a more spatially focused approach to explore how flood experiences and perceptions vary across different communities. While the aggregated results provide a valuable overarching picture, disaggregating the data enables more nuanced trends and locally specific insights to emerge, supporting the development of more targeted future engagement work. For the purpose of this analysis, communities have been organised into three comparative groupings based on shared characteristics, with results presented to enable comparison between these groupings and against the overall dataset.

The three groupings are as follows:

- Wave 1 communities; Pang Valley, Lambourn Valley and Kimpton are considered together, reflecting their shared geology characteristics and initial phase of engagement. These communities will be known as Group A from here on in.
 - Total number of responses to the FEQ from Group A: 45.
- The Buckinghamshire communities of Chesham, Marlow and Chalfont St Peter are analysed as a collective. These communities will be known as Group B from here on in.
 - Total number of responses to the FEQ from Group B: 128.
- Hinksey Park makes up the third group as a stand-alone due to its distinct hydrogeological setting and flood mechanisms, particularly in association with the Permeable Superficial Deposits within the floodplain, where the water table is known to be in good continuity with levels within nearby rivers including the River Thames. This will be referred to as Hinksey Park.
 - Total number of responses to the FEQ from Hinksey Park: 40.

Due to the differing total number of responses across the three groupings, results here are displayed as percentages for ease of cross-group comparisons.

Colnbrook and Luton are excluded from this section due to the relatively low number of respondents reporting prior flood experience, which limits the robustness and reliability of any area-specific analysis.



5.1 Tenure

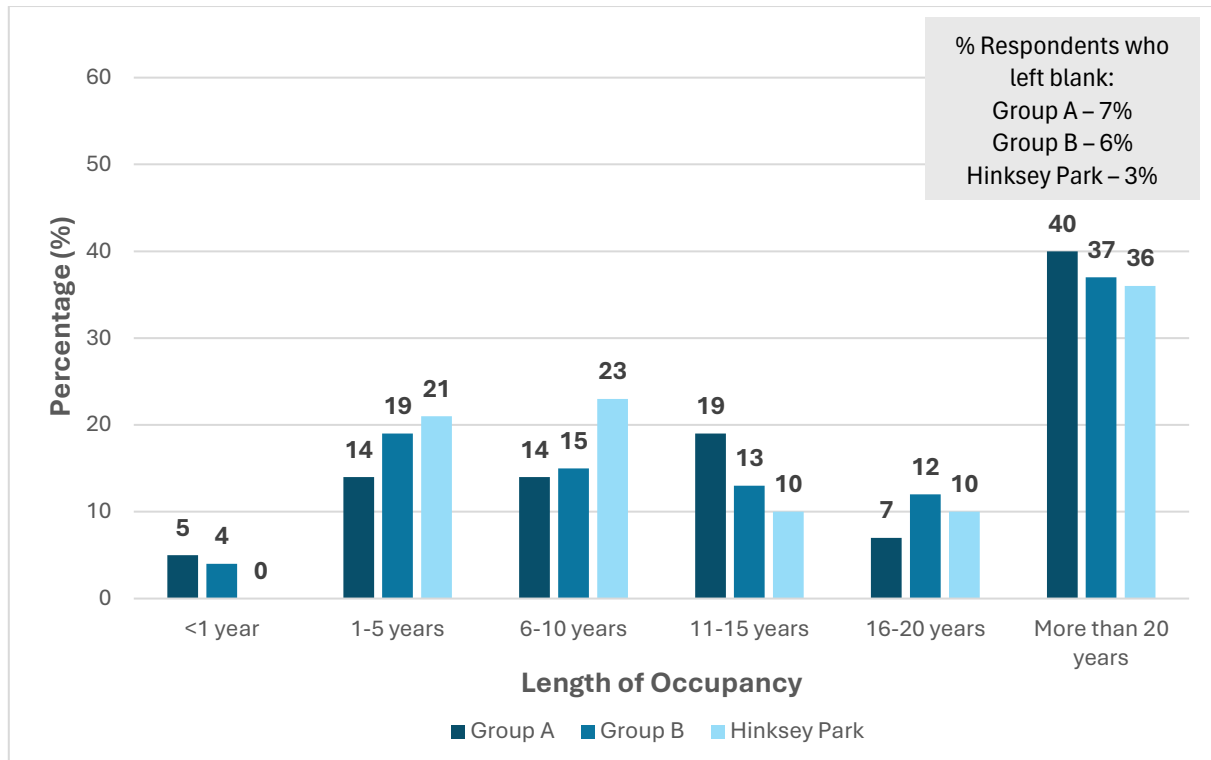


FIGURE 30 – A GRAPH DISPLAYING THE NUMBER OF YEARS RESPONDENTS HAVE OCCUPIED THEIR CURRENT ADDRESS ACROSS EACH GROUPING, DISPLAYED AS A PERCENTAGE OF THOSE THAT RESPONDED TO THIS QUESTION (BLANKS EXCLUDED). NOTE PERCENTAGES ROUNDED TO NEAREST INTEGER.

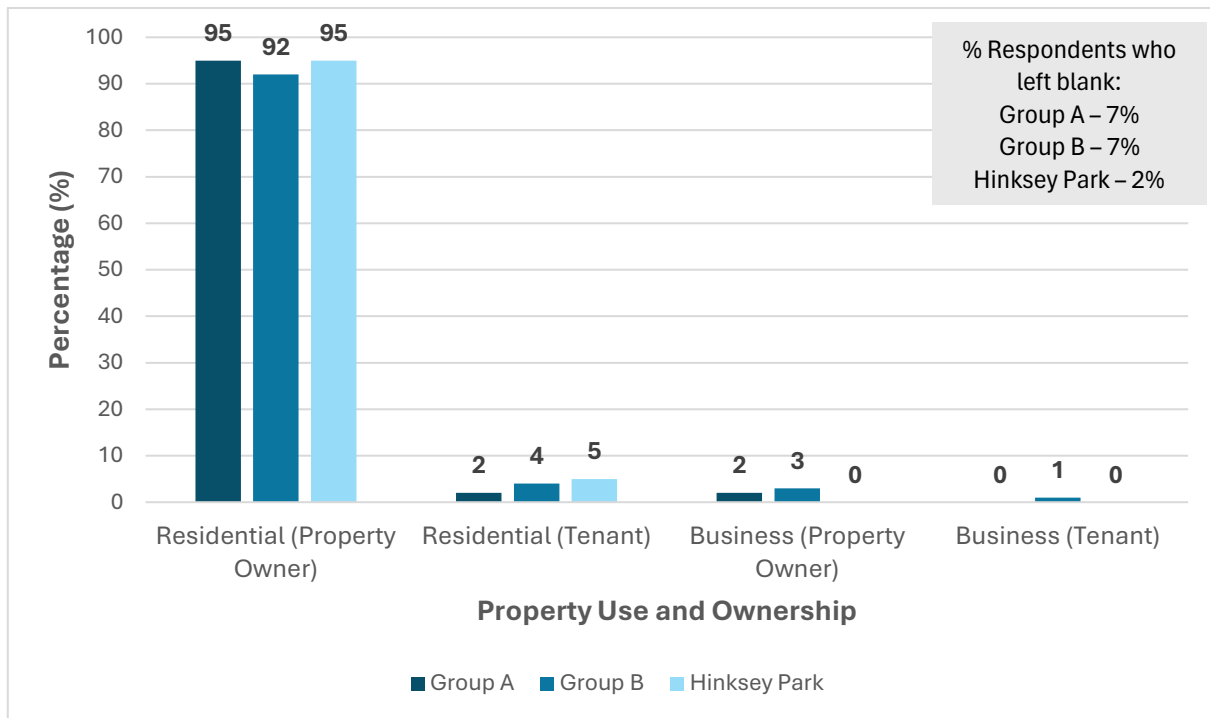


FIGURE 31 – A GRAPH TO SHOW TENURE TYPE ACROSS GROUPING DISPLAYED AS A PERCENTAGE OF THOSE THAT RESPONDED TO THIS QUESTION (BLANKS EXCLUDED). NOTE PERCENTAGES ROUNDED TO NEAREST INTEGER.

Across all three groupings, the overall trend in both Length of Occupancy and Property Use and Ownership identified in Section 4.2 is broadly maintained, with a high proportion of residents in each group having lived at their property for extended periods, and an overrepresentation of those Residential Property Owners compared to tenants and businesses. This is included here to contextualise the following data analysis for the three groupings.



5.2 Knowledge of flooding

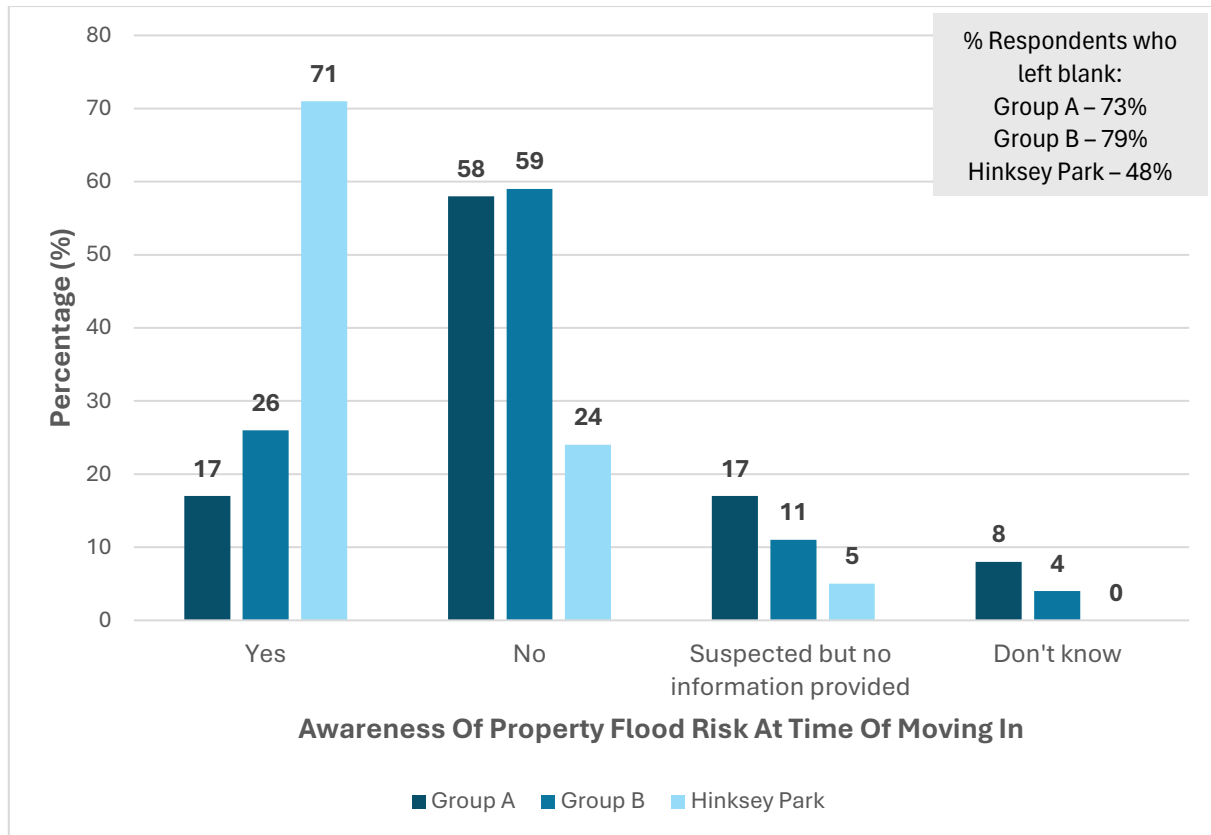


FIGURE 32 – A GRAPH TO SHOW WHETHER RESPONDENTS WERE AWARE OF THE FLOOD RISK AT THEIR PROPERTY WHEN MOVING IN, SPLIT BY GROUPING AND DISPLAYED AS A PERCENTAGE OF THOSE THAT RESPONDED TO THIS QUESTION (BLANKS EXCLUDED). NOTE PERCENTAGES ARE ROUNDED TO NEAREST INTEGER.

The overall finding in Section 4.3; that over half of respondents were not aware of their flood risk when moving into their property, is similar to the trend observed for both Group A and B, however Hinksey Park displays an awareness which far exceeds the overall trend.

Group A displays a relatively high percentage of respondents who were unaware of the flood risk but does however have a notable proportion selecting both '*Suspected but no information provided*' and '*Don't know*'. This indicates a degree of partial awareness or uncertainty rather than complete lack of knowledge, which is higher than the overall trend. This may reflect the well-established history of groundwater flooding in chalk catchments, where local knowledge and community action play an important role in raising awareness, but with an absence of any formal or definitive information for residents to confirm their risk.

The percentage of those respondents who were unaware of their flood risk when moving in also exceeds the overall trend of low awareness for Group B. There is a lower proportion of '*Suspected*' and '*Don't know*' responses, suggesting uncertainty is less prevalent here. This may reflect the more complex and less visible nature of groundwater flooding in these areas, combined with a reliance on fluvial flood information, which may not fully capture groundwater risk. It is also



worth noting, particularly for Groups A and B, that the percentage of those that left this question blank [73% and 79% respectively], again only further demonstrates a likely uncertainty around knowledge of the flood risks faced by their property when moving in, particularly that of groundwater.

Hinksey Park shows a markedly different pattern, with a substantially higher proportion of 'Yes' responses compared to both Groups A and B, and the overall trend. The absence of 'Don't know' responses and relatively low 'Suspected' responses, as well as the relatively low proportion of those leaving this question blank, further suggest greater clarity or confidence in this awareness. This heightened awareness is likely linked to the more visible and frequent interaction between groundwater and fluvial systems in the area due to the permeable superficial deposits present, and the way in which properties have been constructed to accommodate the known flood risks (i.e. elevated ground floor areas and flood voids). The proximity of the River Thames is likely also to play a role in awareness given the potential for large flood events from this source.

Despite this, there is still a notable dominance of respondents who remain unaware of flood risk when moving into their properties, even in Hinksey Park where the trend is relatively positive. This highlights a continued need for targeted engagement and improved communication around where and how this information can be accessed, particularly where visibility of such flood events may be low.

5.3 Flood History

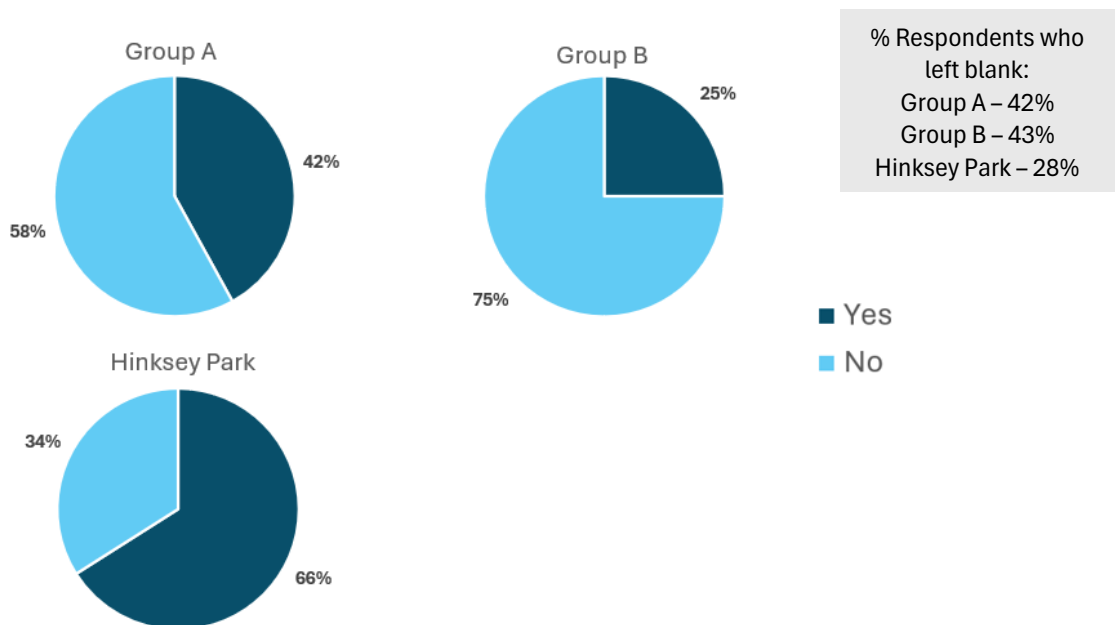


FIGURE 33 – PIE CHARTS DEMONSTRATING WHETHER RESPONDENTS HAVE EXPERIENCED FLOODING AT THEIR PROPERTY DURING THEIR OCCUPANCY, SPLIT BY GROUPING AND DISPLAYED AS A PERCENTAGE OF THOSE THAT RESPONDED TO THIS QUESTION (BLANKS EXCLUDED). NOTE PERCENTAGES ARE ROUNDED TO NEAREST INTEGER.



In Section 4.4, results showed a minority of respondents had reported experiencing flooding during their occupancy [37%] however, [Figure 33](#) shows significant variance around this across the three groupings.

Hinksey Park shows the highest proportion of respondents reporting flooding, far exceeding the overall trend. This likely reflects its hydrogeological setting, where groundwater levels are closely linked to the river systems and can respond rapidly to prolonged rainfall, increasing the likelihood of flooding.

Group A also shows a moderate proportion of respondents with flood experience, slightly exceeding the overall dataset. Given the known susceptibility of chalk catchments to groundwater flooding, this mostly aligns with expectations.

Group B shows the lowest proportion of respondents reporting flooding, falling below the overall trend. This may reflect a combination of factors, including more localised flood pathways.

Table 10 below presents the average flood duration reported by respondents that have experienced flooding at their property.

TABLE 10: THE AVERAGE FLOOD DURATION FOR THOSE RESPONDENTS WHO HAVE EXPERIENCED FLOODING ACROSS GROUPINGS

Grouping	Average flood duration (days)
Group A	33
Group B	21
Hinksey Park	11

Average flood duration varies notably between the three groupings, reflecting differences in local geology and flood mechanisms. Group A reports the longest average flood duration of 33 days. This is consistent with their shared chalk geology, where groundwater flooding can persist for extended periods due to slow drainage and sustained high water tables.

Group B shows a shorter average duration of 21 days. While groundwater flooding is still a key mechanism, more variable local conditions and interactions with other sources (e.g. surface water or drainage) may lead to shorter, less sustained events on average.

Hinksey Park records the shortest average duration at 11 days. This likely reflects its distinct hydrogeological setting, where permeable superficial deposits are in close hydraulic continuity with nearby rivers. In this context, floodwater levels are more responsive to river conditions, allowing water to recede more quickly once levels drop, resulting in shorter flood durations overall.

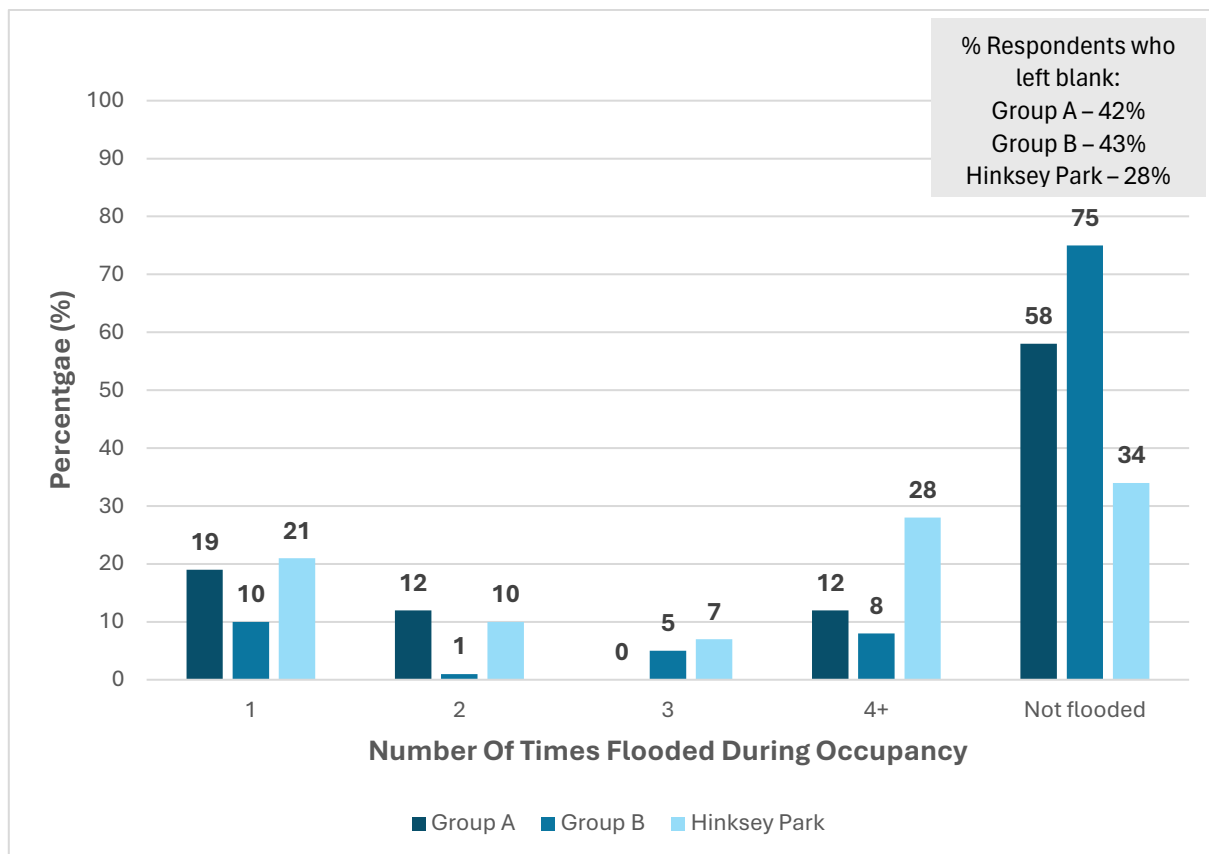


FIGURE 34 – A CHART DISPLAYING THE NUMBER OF TIMES RESPONDENTS HAVE EXPERIENCED FLOODING AT THEIR PROPERTY DURING THEIR OCCUPANCY, SPLIT BY GROUPING AND DISPLAYED AS A PERCENTAGE OF THOSE THAT RESPONDED TO THIS QUESTION (BLANKS EXCLUDED). NOTE PERCENTAGES ARE ROUNDED TO NEAREST INTEGER.

In the earlier Section 4.4 (Table 5), length of occupancy alone does not explain the number of floods experienced across communities. This suggested that geographic and local contextual factors likely play and more significant role in influencing flood frequency.

The distribution of flood frequency across the three groupings highlights clear differences in both the likelihood of experiencing flooding and the recurrence of events, when compared to the overall trend outlined in Section 4.4.

As explained above, most respondents from Hinksey Park have experienced flooding during their occupancy. This is reinforced by the distribution of repeat flood events. Hinksey Park has by far the highest proportion of respondents reporting 4 or more flood events [28%], more than double that of Group A and B. This strongly suggests a pattern of frequent and recurring flooding, with relatively few respondents in this group also leaving this question blank.

Group A presents a more balanced distribution. While the majority report no flooding [58%], broadly in line with the overall trend, there is a relatively even spread across the number of flood events (excluding 3). This pattern is consistent with the episodic nature of groundwater flooding in chalk catchments, where events are typically linked to prolonged wet periods rather than frequent, repeated occurrences.



Group B not only has the highest proportion of properties unaffected, but also the lowest proportion of repeat flood events. This places Group B below the overall trend for flood frequency, suggesting more localised or less persistent flood mechanisms.

In total, 48 respondents across Group A, B and Hinksey Park have experienced flooding (11, 18 and 19 respectively).

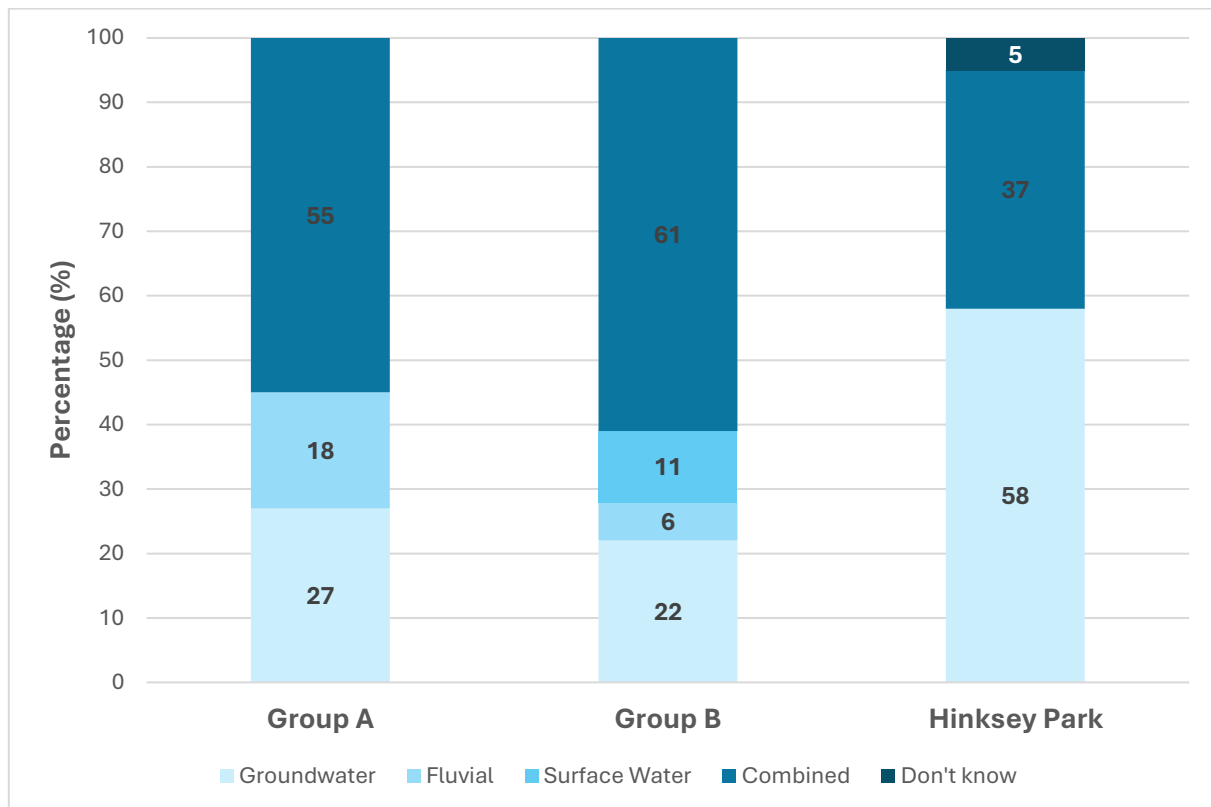


FIGURE 35 – A BAR STACKED BAR CHART TO SHOW THE SOURCES OF FLOODING REPORTED BY RESPONDENTS BY GROUPING, DISPLAYED AS A PERCENTAGE OF RESPONDENTS WITHIN EACH GROUP THAT HAVE EXPERIENCED FLOODING (NO BLANKS). NOTE PERCENTAGES ARE ROUNDED TO NEAREST INTEGER.

Figure 35 shows the reported cause of flooding for those respondents that have experienced flooding during their occupancy in each grouping. Group A displays a proportion lower than the overall trend attributing previous flooding solely to groundwater, but a greater proportion attributing this to fluvial sources. Similarly, Group B also has a lesser proportion of respondents attributing previous flooding solely to groundwater, but a greater proportion attributing flooding to Surface Water. Hinksey Park on the other hand, displays a majority of respondents attributing flooding solely to groundwater, which far surpasses the overall trend.

Although responses may provide a useful indication of flood risk in each area, they should be interpreted with some caution, as they are influenced by respondents' perceptions and understanding of flooding processes. Broadly, the patterns are consistent with expectations: in Group B, communities are urban, where surface water flooding is more likely. However, respondents are likely to attribute flood sources based on what they directly observe. For example,



where groundwater emerges and subsequently flows across the surface, it may be misidentified as surface water flooding.

In contrast, respondents in Hinksey Park appear to demonstrate a stronger confidence in attributing flooding to groundwater. This is likely influenced by local topography, where garden characteristics make emergence of groundwater more visible, with water relatively regularly rising above garden levels to create pond-like features. As a result, attribution in Hinksey Park may more accurately reflect the underlying flood mechanism. Overall, while the data provides a helpful high-level indication of flood risk and source attribution across groupings, variations in local understanding and visibility of flood processes should be considered when interpreting these findings.

‘Combined’ flood sources make up notable proportions across all three groupings: Table 11 looks at the breakdown of which sources were selected when respondents attributed flooding to more than one source.

TABLE 11: BREAKDOWN OF THOSE ATTRIBUTING FLOODING TO MORE THAN ONE SOURCE, CAPTURED AS ‘COMBINED’ IN FIGURE ABOVE. THE TABLE DISPLAYS THE COUNT EACH SOURCE WAS SELECTED BY RESPONDENTS.

	Groundwater	Fluvial	Surface Water	Drains/Sewers	Total
Group A	5	2	5	2	6 [55%]
Group B	8	4	9	7	11 [61%]
Hinksey Park	7	5	3	2	7 [37%]

All but 4 respondents selecting more than one source of flooding (classed as combined), include groundwater flooding as a contributing source. Therefore, the dominance of groundwater within those selecting more than one source remains true.

Hinksey Park has a much lower proportion of respondents attributing flooding to multiple sources than the overall trend [51%]. This further strengthens the argument that this community is very aware of the flood mechanisms, and flooding from other sources has been reported to have occurred much less frequently.

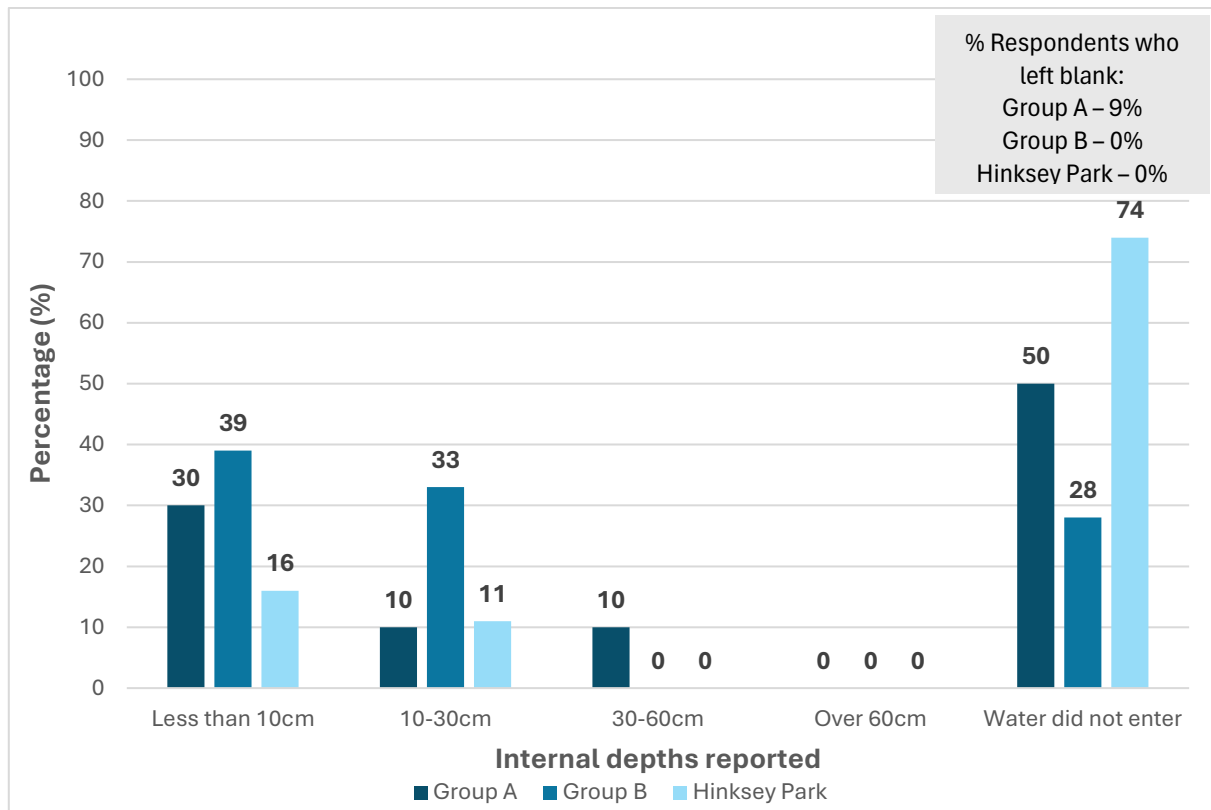


FIGURE 36 – A GRAPH DISPLAYING INTERNAL DEPTHS REPORTED BY RESPONDENTS BY EACH GROUPING, DISPLAYED AS A PERCENTAGE OF RESPONDENTS WITHIN EACH GROUP THAT RESPONDED TO THIS QUESTION (BLANKS EXCLUDED). NOTE PERCENTAGES ARE ROUNDED TO THE NEAREST INTEGER.

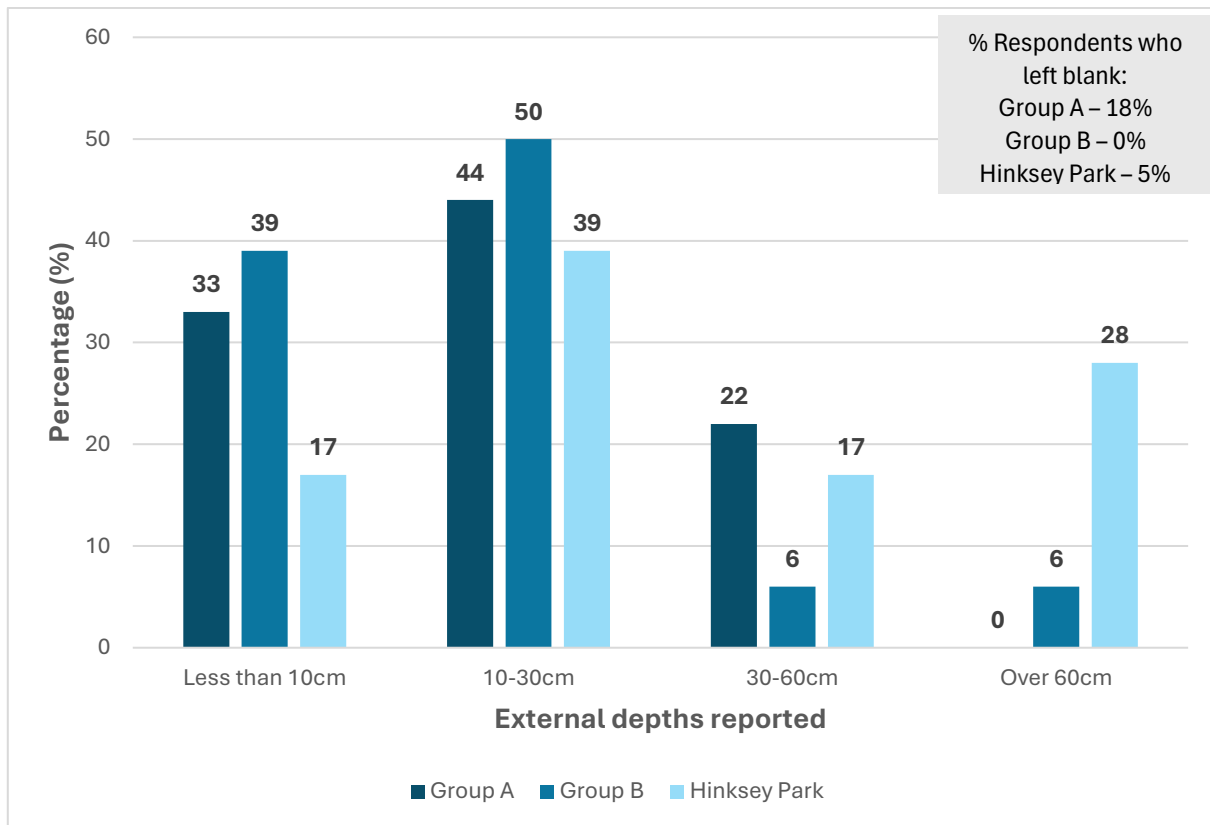


FIGURE 37 – A GRAPH DISPLAYING EXTERNAL DEPTHS REPORTED BY RESPONDENTS BY EACH GROUPING, DISPLAYED AS A PERCENTAGE OF RESPONDENTS WITHIN EACH GROUP THAT RESPONDED TO THIS QUESTION (BLANKS EXCLUDED). NOTE PERCENTAGES ARE ROUNDED TO THE NEAREST INTEGER.

Hinksey Park shows a dominant proportion of respondents reporting that no water entered their property, despite earlier evidence of more frequent flood events (Figure 33 and Figure 34). This proportion is higher than both Group A and B, as well as the overall trend. Where internal flooding is reported, it is generally limited to the lower depth categories. Similarly to the explanation above, this is likely attributable to the topography around properties in Hinksey Park. The gardens with valley-like features are often situated much lower than the rear elevations, with properties having extensive voids beneath ground floor areas. Therefore, these areas fill up when groundwater levels are high but often do not quite reach great enough depths to impact the dwellings directly. This also provides explanation for the greater external depths in Hinksey Park compared to Group A and B communities, with respondents likely reporting the external depth at the local depressions in their garden as opposed to immediately adjacent to the property elevation above floor level.

In contrast, Group A and Group B report comparatively higher proportions of respondents reporting greater internal depths. This aligns with the higher attribution of flooding to fluvial and surface water sources in these areas, where rainfall-driven runoff and river responses can generate deeper out of bank flows, which is subsequently likely to increase the risk of ingress through above-ground apertures.



5.4 Indirect Impacts

Figure 16 – A map displaying the percentage of respondents who answered ‘yes’ to Q.36 ‘Have you been impacted by flooding indirectly?’. Percentages have been calculated out of the total number of respondents to the FEQ from each community, as opposed to excluding those who left this question blank, interpreting where respondents left this blank as ‘no’ indirect impact. Figure 16 presented a breakdown of how many respondents in each community report indirect flood impacts. In this section however, the focus is on comparing these impacts across the three defined groupings. Figure 38 therefore summarises the data into three pie charts, illustrating the proportion of respondents within each grouping who reported experiencing indirect impacts of flooding.

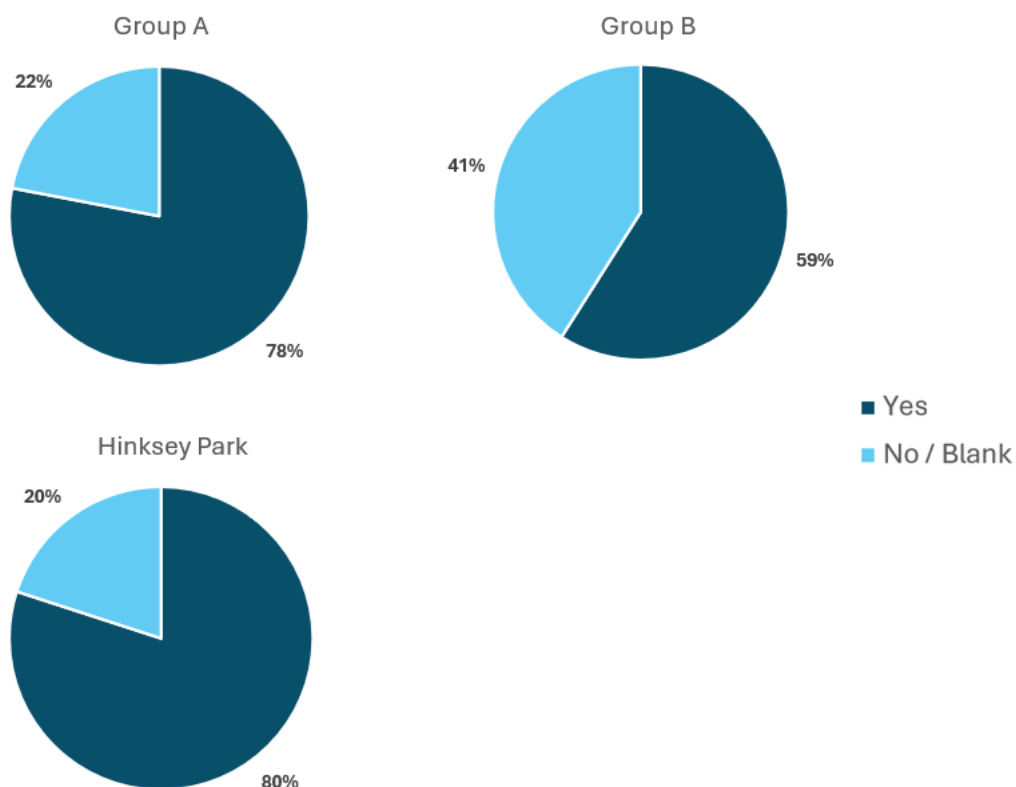


FIGURE 38 – PIE CHARTS TO SHOW WHETHER RESPONDENTS HAVE EXPERIENCED INDIRECT IMPACTS OF FLOODING WITHIN EACH GROUPING, DISPLAYED AS A PERCENTAGE OF ALL RESPONDENTS IN EACH. WHERE RESPONDENTS HAVE LEFT THIS QUESTION BLANK, WE HAVE INTERPRETED THIS AS NO INDIRECT IMPACTS EXPERIENCED. NOTE PERCENTAGES ARE ROUNDED TO NEAREST INTEGER.

All three groupings show varying proportions of respondents reporting indirect flood impacts, but in each case these impacts remain clearly dominant. This reinforces the widespread nature of flooding consequences across the study areas, demonstrating that disruption is not limited to properties directly affected by floodwater. Instead, impacts extend more broadly across communities, particularly through issues such as access, utilities and closures of local services and amenities. Table 12 shows are more detailed breakdown of how many times respondents selected each indirect impact (pre-written) within each community.



Project Groundwater
Are you flood resilient?



Flood Experience Questionnaire
Summary Report
August 2026
v2.0



TABLE 12: A DISPLAY OF THE NUMBER OF TIMES EACH INDIRECT IMPACT OPTION WAS SELECTED BROKEN DOWN BY COMMUNITY. NOTE RESPONDENTS WERE ABLE TO SELECT MORE THAN ONE OPTION.

		Number of respondents who have reported indirect impacts	Count		
			Flooded roads / road closures	Blocked Sewers / unable to use bathrooms / kitchens / appliances	Closures of local schools / businesses
Group A	Lambourn Valley	14 [93%]	13	6	1
	Pang Valley	12 [63%]	10	8	1
	Kimpton	9 [82%]	9	0	0
Group B	Chesham	33 [65%]	33	2	1
	Marlow	34 [54%]	26	14	0
	Chalfont St Peter	8 [57%]	8	4	4
Hinksey Park		32 [80%]	31	11	8

Across all communities, ‘*flooded roads / road closures*’ is consistently the most frequently reported indirect impact, selected by a large majority of respondents within each area. This mirrors the overall trend, reinforcing the impact of transport disruption as a key consequence of flooding. The consistently high reporting across all groupings suggests that even where direct property flooding is limited, the wider community continues to experience significant disruption through loss of access and connectivity.

‘*Blocked sewers / inability to use household facilities*’ is also reported across most communities, although with greater variability. Higher counts in areas such as Pang Valley and Marlow may reflect the interaction between groundwater and drainage infrastructure, where elevated groundwater levels can reduce sewer capacity or cause backflow. However, there is no clear pattern between this indirect issue and frequency or reported sources of flooding, indicating that impacts of groundwater flooding on drainage infrastructure is likely to be a localised issue.



Reports of '*closure of local schools / businesses*' are comparatively lower across all communities, but still present, particularly in Hinksey Park and Chalfont St Peter. While less frequently selected, these impacts indicate broader socio-economic disruption.

Overall, no grouping displays any trend which stands out from the overall trend, but the analysis further demonstrates that indirect impacts are both widespread and multi-dimensional. Transport disruption remains the most dominant and consistently reported issue. The variation in other impact types across communities likely reflects differences in local infrastructure, flood mechanisms, and the interaction between flooding and built systems.

5.5 Flood Alerts and Warnings

Table 8 in Section 4.5.1.1 displays the availability of flood alerts and warnings across all communities. This analysis will look at uptake of these across the groupings.

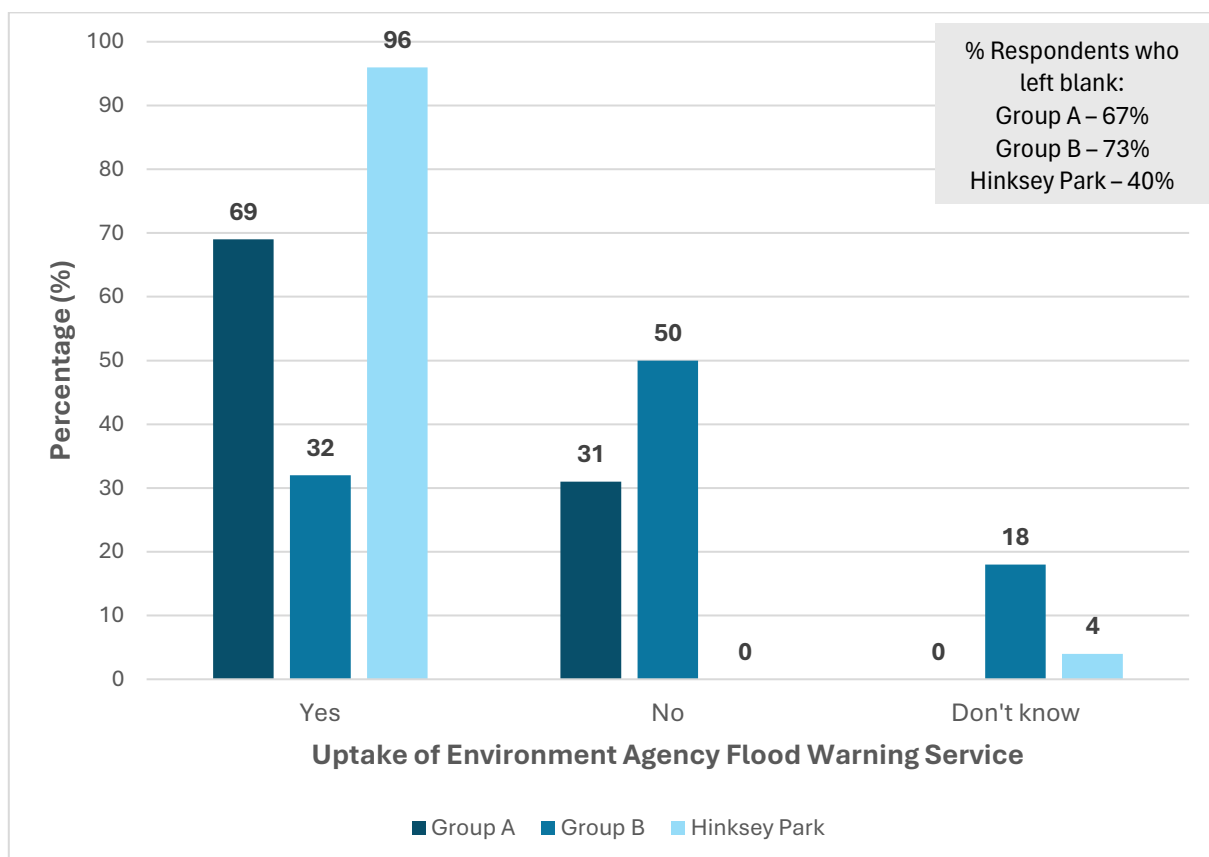


FIGURE 39 – A GRAPH TO SHOW WHETHER RESPONDENTS ARE SIGNED UP TO RECEIVE THE ENVIRONMENT AGENCY FLOOD WARNING SERVICE, SPLIT BY GROUPING AND DISPLAYED AS A PERCENTAGE OF RESPONDENTS WITHIN EACH GROUP THAT RESPONDED TO THIS QUESTION (BLANKS EXCLUDED). NOTE PERCENTAGES ARE ROUNDED TO THE NEAREST INTEGER.

Figure 39 highlights variation in uptake of the Environment Agency flood warning service across the three groupings, while also reinforcing the broader trend of low engagement identified in Section 4.5.



There is a clear difference between the groupings. Hinksey Park shows the highest level of uptake. This makes up 58% of all those respondents in Hinksey Park (including those that left this question blank), which is notably higher than both Group A (20%) and Group B (32%), and also exceeds the overall uptake observed across all respondents in Section 4.5 (20%).

Group A shows the lowest level of uptake, despite being located in areas with known groundwater susceptibility and groundwater alert services. Group B shows a moderate level of uptake, slightly exceeding the overall trend.

These differences are likely linked to variations in flood risk awareness, proximity to visible sources of flooding e.g. River Thames, and the perceived relevance of Environment Agency services. As identified earlier, Hinksey Park has a much higher proportion of respondents aware of their flood risk when moving into their property. In this setting, the strong hydraulic connectivity between groundwater and fluvial systems means that the Environment Agency fluvial alerts may act as a more meaningful indicator of overall flood risk, increasing their perceived usefulness and encouraging uptake.

In contrast, in Group A and to some extent group B, where groundwater flooding is more dominant or less visibly connected to river systems, Environment Agency alerts may be perceived as less directly relevant. This combined with the lower overall awareness of flood risk is likely contributing to lower levels of sign-up.

TABLE 13: A DISPLAY OF THE NUMBER AWARENESS OF THE GROUNDWATER ALERT SERVICE IN THOSE COMMUNITIES WHERE THIS IS AVAILABLE

Community (with GW alert available)	No. respondents aware of Groundwater Alert availability [Q.29]	% of respondents in community aware
Lambourn Valley	6	40%
Pang Valley	4	21%
Kimpton	5	45%
Chesham	4	8%

Awareness of groundwater alerts varies widely between communities. However, these figures should be treated as indicative only, as the analysis is based on community-level availability rather than coverage at the individual property level. As a result, some properties within these communities may not be included within the alert areas, meaning the data does not fully represent actual access to and 'lack of awareness' of alerts. On this basis, no further detailed analysis has been undertaken.

5.6 Existing Property Flood Resilience

Lastly, this section will look at the proportion of those with existing Property Flood Resilience across each grouping.

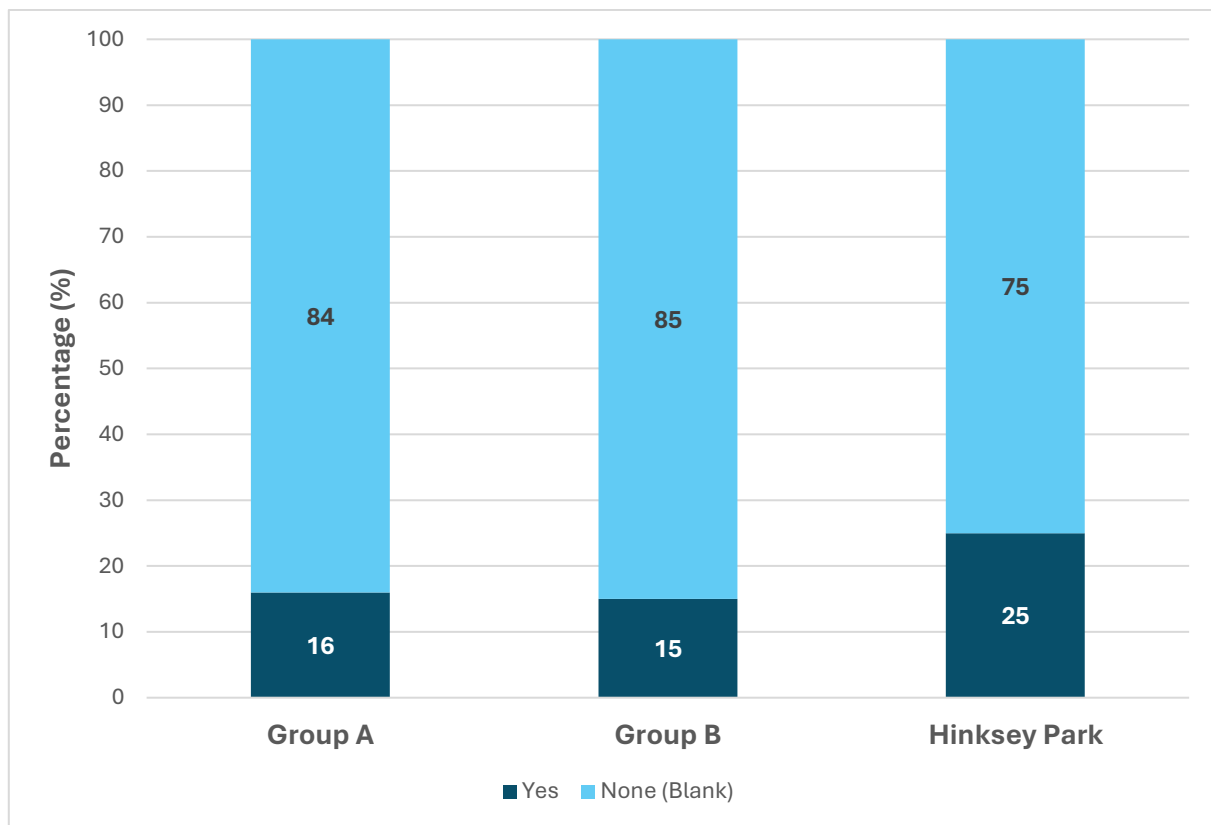


FIGURE 40 – A STACKED BAR CHART TO DISPLAY WHETHER RESPONDENTS HAVE EXISTING FLOOD RESILIENCE MEASURES INSTALLED, DISPLAYED AS A PERCENTAGE OF THOSE WITHIN EACH GROUPING. DUE TO FRAMING OF THE QUESTION, BLANKS INDICATE NO EXISTING MEASURES. NOTE PERCENTAGES ARE ROUNDED TO THE NEAREST INTEGER.

Figure 40 shows the proportion of respondents within each grouping who report having existing flood resilience measures in place, with blanks interpreted as no measures installed due to the framing of the question (Q.31).

Across all three groupings, the majority of respondents do not have any resilience measures in place, reflecting the overall trend identified in Section 4.5. This suggests that, despite evidence of flood risk and previous flood experience, uptake of physical resilience measures remains relatively low.

Hinksey Park shows a comparatively higher proportion of respondents with measures installed than groups A and B and the overall trend. This aligns with earlier findings of higher flood frequency (Figure 33 and Figure 34) and greater awareness of flood risk (Figure 32) in this area. This also may provide some further explanation for why internal depths reported in Hinksey Park were relatively low, especially compared with the external depths reported. The more frequent and visible nature of flooding is likely to act as a stronger driver for taking protective action, particularly where impacts are experienced repeatedly over time.



Group A shows a moderate level of uptake, which may reflect the episodic nature of groundwater flooding. While residents may be somewhat aware of the risk, the less frequent occurrence of severe events may reduce the perceived urgency to invest in resilience measures.

Group B shows the lowest proportion of respondents with existing measures, consistent with its lower reported flood frequency and smaller proportion of respondents directly affected by flooding. This suggests that both experience and perceived risk are key drivers in prompting action to improve property-level resilience, whether through individuals' private investment or external funding streams linked to identified risk or previous flooding event (e.g. Environment Agency or Insurance).

Overall, the pattern observed reinforces the relationship identified earlier in the report between flood experience, risk awareness and the adoption of resilience measures. It also highlights a significant opportunity for targeted engagement to encourage uptake where residents are able, particularly in areas where risk exists but this has not yet been translated into protective action.



6.0 Discussion

6.1 Uptake

The FEQ received a total of 276 responses, which included 28 responses from residents outside of the nine pilot communities.

The initial aim to obtain 10 responses from residents that had experienced groundwater flooding within each community was not quite met. Greater than 10 responses were received in eight of nine communities, with only Colnbrook-with-Poyle not meeting this target (nine responses), however not all responses related to residents that had experienced groundwater flooding (see Section 4.0).

There are clearly significant differences in the level of engagement achieved across the communities. This is likely to be a result of:

- Property numbers; specifically, the number of properties located within areas at risk of groundwater flooding that were targeted. A significantly larger number of properties were identified to be at risk within the urban communities (Hinksey Park, Marlow and Chesham) and therefore a larger number of residents were contacted and engaged.
- Flood history; a number of the communities have not recently been impacted by groundwater or other sources of flooding. Awareness of flooding and different flood mechanisms therefore differs significantly across the communities. Engaging residents that may have not previously flooded is often challenging because the risk is only theoretical in the mind of the residents, and addressing these risks is therefore often not considered a high priority. Residents who may have experienced the challenges of flooding are far more likely to acknowledge the risk and seek to take preventative measures to reduce future impacts.
- Demographics; as discussed in the Results Analysis (Sections 4.0 and 5.0), some communities have a much larger tenanted population, who are less likely to engage with the Project given they do not own their own property and do not have as great of a vested interest to protect it.

6.2 Responses

Despite the challenges discussed above, the FEQ was still successful in obtaining a large volume of valuable data that helped the Project to identify properties that would benefit most from Property Flood Resilience (PFR) measures. This approach to identifying eligible properties for a PFR survey has been innovative in itself, which was wholly reliant on public engagement and residents self-reporting the flood history and flood risks at their property through the FEQ.

The FEQ needed to find a balance between its length, content and complexity, whilst ensuring the responses would provide the minimum data required to enable the subsequent PFR eligibility screening exercise to be completed. It was pleasing that most respondents completed the majority



or all of the sections of the questionnaire that were relevant to their experiences, which allowed the subsequent screening to be progressed. Project Groundwater is extremely grateful for everyone who participated and completed the FEQ.

6.3 Lessons Learned

Whilst engagement with groundwater flooding remains challenging, particularly where flood events are infrequent or poorly understood, the FEQ achieved 248 responses across nine pilot communities and generated a valuable evidence base that previously did not exist. The results demonstrate a strong level of community willingness to share experiences and contribute towards improving local flood resilience.

These findings reinforce the importance of viewing community engagement as a long-term process rather than a one-off activity. Building awareness, trust and participation require sustained effort over time and presents an important opportunity for future legacy activities beyond the completion of Project Groundwater in 2027.

Drawing on the implementation of the FEQ, this section reflects on the key lessons learned and considers how alternative approaches may have influenced participation and outcome. It should be noted that the observations presented are based on reflections from the project team and interpretation of the survey results, rather than being informed by specific feedback from respondents or the wider communities.

6.3.1 Accessibility

The FEQ was made available online, and in paper format. Residents could request a paper copy from Buckinghamshire Council using the contact details provided on the promotional materials, or when attending in-person engagement events.

Promotional materials and leaflets were also made available in alternative languages given English was known not to be the first language of residents in all community areas. The online questionnaire could also be translated using integrated translation tools within the respondent's web browser to aid completion.

It is considered the FEQ was made accessible to all and that little more could have been done in this regard which may have improved uptake rates.

6.3.2 Format

The structure and format of the FEQ was purposely designed to strike a balance between obtaining a good quantity and quality of responses, whilst not overburdening those completing it with a lengthy and overly complex survey form. This was achieved by creating a survey structure which included optional sections based on the respondents' individual circumstances and experiences.

Multiple-choice questions were preferred to:



- i) Reduce ambiguity and misinterpretation of the question;
- ii) Simplify the subsequent data analysis; and,
- iii) Ensure the questionnaire was relatively quick and simple to complete.

The FEQ included a number of questions with free-text answers to ensure respondents had the opportunity to explain their specific circumstances and experiences in greater detail should they wish to do so.

The majority of questions were optional, which meant that those responding could skip questions and provide incomplete responses. This was a deliberate approach to try to avoid respondents failing to complete or submit the questionnaire altogether if they felt put-off by the number of questions, and/or considered the questions were irrelevant to their own experiences. Although most respondents fully completed most or all of the sections that were relevant to themselves, this could have been improved by increasing the number of mandatory questions.

6.3.3 Marketing & Promotion

As detailed in Section 2.5, significant effort was made to promote and market the FEQ using a variety of methods. Despite these efforts there was still relatively poor attendance at webinars and at a number of in-person engagement events.

Potential reasons for low engagement level given the considerable promotional effort may include:

- i) The Project's own branding; Given the general lack of knowledge or understanding of groundwater, particularly in communities that have not been recently impacted by groundwater flooding, or impacted altogether, the Project Groundwater branding may not have felt relevant to some residents and discouraged engagement. Residents may have felt reluctant to respond if they believe they have been impacted by other sources of flooding, or if they simply do not know the source(s) of flooding that impact their property. The FEQ may have benefitted from being publicised as a more generic flood survey and potentially using more familiar Environment Agency or Local Authority branding.
- ii) The Project's number of technical workstreams; Given the scale and breadth of Project Groundwater, Groundwork have needed to undertake continuous engagement on multiple different technical issues. With ever changing demands, priorities and requirements of each workstream, it is likely to have been difficult to maintain momentum of messaging regarding specific issues and objectives, and this could have led to confusion within communities and discouraged uptake. The structure of the Project with numerous technical workstreams led by different external partners, has meant the approach and programme has not always been aligned across the whole project. On a typical PFR project the client would have closer control and oversight of the engagement activities and may have laid groundwork for months or years in advance to bring communities on a journey to increase and maintain uptake at the point of delivery.



- iii) The Project's wide geographical area means it may have been difficult to maintain consistent levels of engagement in some areas when local priorities rightly change due to ongoing issues and challenges that may arise over a Project of this length. Promotion of the FEQ may therefore have rightly needed to be a lower priority at certain times, but given the tight timescales to allow the follow-on work to proceed, there was little flexibility afforded within the survey timescales.
- iv) Previous survey engagement completed through the Community Readiness Survey; This survey undertaken at the outset of the Project obtained some similar types of information and residents may therefore have felt they had already engaged with the Project on these matters. The Community Readiness Survey predated RAB Consultants' involvement with Project Groundwater, and with greater foresight and planning there could have been better alignment to avoid the need for an additional questionnaire in the form of the FEQ.

6.3.4 Data Protection

A common challenge with flood resilience projects is resident concerns about how their information and data may be used, and potentially shared with third parties. Residents are often concerned the work completed may draw attention to previously unknown or unreported flooding issues. This often relates to concerns that home insurance providers will use flood risk information shared or generated through their participation with the project to justify increased premiums. This scepticism often remains despite reassurances regarding the required data protection measures, and that the flood risk data used within these assessments is typically already publicly available and accessible to insurance providers. Unfortunately, there is little that can be done in this regard to ease residents concern without further engagement and awareness across the flood risk sector.

6.3.5 Timing

Timing is always a key challenge for any flood risk project, as levels of engagement can vary significantly depending on whether flooding is considered a relevant issue:

- i) A number of the communities had not flooded recently, or had flooded within living memory, as a result of groundwater, and this naturally has led to less interest from residents in some areas.
- ii) The first wave of the questionnaire was released in late summer / early autumn, before the peak of the flood season, and at a time of year when groundwater flooding is not typically a significant issue. Groundwater flooding is therefore likely to have been a lower priority for these communities. Unfortunately given the project timescales and the need to avoid delays to the follow-on work, including the PFR surveys, it was not possible to delay the survey into late winter / early spring, when groundwater flooding is typically more prevalent.
- iii) The timing of the FEQ also may not have aligned with other ongoing engagement activities being delivered through the Project. This may have caused some confusion



amongst residents. Ideally the Resilience Workstreams objectives and deliverables would have been embedded earlier within the Project programme so that communities were aware of the opportunities that would arise through the project and allowed these to be better established at the point where the FEQ was initially promoted. This approach could also have included closer collaboration with the Project's other technical workstreams to enable greater alignment with the wider overall programme, milestones and deliverables and to avoid mixed messaging.

- iv) There were opportunities that may have been missed to promote the FEQ when engagement and uptake may have been greater. For example, there was an extremely well attended event in Chalfont St. Peter in early 2024 (prior to the FEQ going live) due to an ongoing flooding event and issues surrounding its management. The residents who attended this event are far more likely to have engaged with the Project on their experiences of flooding given the strength of feeling on the local flooding issues at the time. Creation and publication of the FEQ could have been expedited to secure better uptake in this area.

6.3.6 Programme

As touched upon previously, many PFR projects will lay the groundwork through community engagement over several years, which helps communities to understand why PFR has been identified as preferable option. An extended programme for the FEQ would have allowed longer and sustained engagement which would have improved uptake. Unfortunately, the Project was constrained by its own timescales which meant this was not possible.

However, the programme that was set out was deliberately dynamic and flexible within the target end date, to ensure local issues and sensitivities could be accounted for. This included delaying the opening of the FEQ in Chalfont. St Peter, by moving this community to wave 3 of the survey, to avoid confusion with other ongoing work and messaging from the Project relating to ongoing flooding challenges during the wave 2 period.

6.3.7 Incentives

During development, the option of including incentives for completing the FEQ was discussed but discounted on cost and feasibility grounds. Uptake of the FEQ may therefore have been influenced on the basis there was no guaranteed incentive for participation; funding for a limited number of PFR surveys had been secured, but the survey offer was dependent on a subsequent screening and eligibility exercise being completed. Despite funding for the installation PFR measures also subsequently being secured, there was no guarantee at the outset of the availability of this funding and if it would be able to benefit every property that received a PFR survey. This messaging was perhaps confusing when promoting the FEQ given the Project was hopeful, but unable to provide certainty at the time, on the eligibility for surveys and funding for measures.



7.0 Next Steps

7.1 PFR Surveys

The FEQ responses were reviewed to identify properties eligible to receive a PFR survey and report. These surveys were fully funded by Project Groundwater and formed a core deliverable for the Resilience workstream. Simple minimal eligibility criteria were set out to identify properties to be offered a PFR survey with the intention of maximising the number of properties that would benefit. The eligibility criteria was as follows:

- The property must be located within one of the pilot communities

AND

- The property has experienced direct or indirect groundwater flooding impacts.

AND/OR

- The property is located within an area shown to be at risk of groundwater flooding on the hazard mapping developed by Jacobs.

Funding was secured for a total of 108 PFR surveys across the 9 pilot communities.

7.2 PFR uptake challenges

Despite the funding available, and a far larger number of FEQ responses initially received, a total of only 71 PFR surveys were subsequently completed. There is considered likely to be number a reasons for this:

- Respondents choosing not to confirm their interest in the PFR survey to the specific question in the FEQ.
- Ineligible properties
 - Some FEQ responses provided insufficient information (skipped optional questions) meaning it was not possible to accurately screen the property's level of risk and priority / eligibility for a survey.
 - Some properties were simply at low / negligible risk of flooding from all sources with no historic flooding reported and therefore did not meet the eligibility criteria.
- Availability
 - The end of the survey programme meant PFR surveys followed in late spring / summer 2025. Homeowner availability is typically lower in summer months when holiday periods can limit days on which surveys can take place.
 - Some residents moved home between responding to the FEQ and receiving the PFR survey offer.



8.0 Conclusion

Project Groundwater's Flood Experience Questionnaire (FEQ) was designed to fill key evidence gaps on groundwater flooding across the Project's nine pilot communities and to support targeted delivery of Property Flood Resilience (PFR) measures. The FEQ was developed collaboratively across the Resilience, Engagement and Communications workstreams. The survey could be completed online, but paper copies were also available by request and at in-person events. Significant time and effort was put into the promotion and marketing of the FEQ, which included project newsletters, social media, targeted leaflet drops and community engagement activities.

Overall, 276 responses were received (248 of which were from residents within the pilot communities). The responses captured insights regarding both direct and indirect impacts of flooding and highlighted that groundwater is both a primary flooding mechanism and a contributory factor to other flooding mechanisms experienced within the pilot communities. The results also underline the significant disruption caused by flooding within the community and not just at the property level, with road closures and utility service interruptions widely reported. Despite the risks and challenges reported, the responses show awareness and preparedness for groundwater flooding were generally low, with many respondents unsure about their own level of risk, limited uptake of warning services, and few existing personal flood plans in place. There are few numbers of properties with existing resilience measures in place, but the number of responses indicated there is a strong interest in learning more about PFR.

While the FEQ met its core purpose, response rates varied between communities and are likely to reflect a combination of factors. Whilst awareness and understanding of groundwater flooding may have influenced participation, wider engagement experience demonstrates that perceptions of flood risk, concerns regarding insurance implications, previous experiences of engagement activities and individual circumstance may also affect willingness to participate. Lessons learned include the importance of sustained, locally tailored engagement over longer periods; simplifying key questions and reducing blank responses by making more questions mandatory. In hindsight improvements could have been made to ensure the messaging was clear and resonated beyond just groundwater which could have increased uptake.

The FEQ findings have already informed the project's eligibility screening for funded PFR surveys, helping to prioritise properties where there is clear evidence of direct, and indirect, groundwater impacts. Building on this, the next steps are to use the findings of the FEQ to support strengthening communications on flood risk, alerts and warnings and practical preparedness; and to help focus future engagement on groups and locations where response rates and awareness were lowest. The FEQ has provided an evidence base to better target investment, improve understanding of groundwater flooding impacts, and support longer-term community resilience across the pilot areas.



Appendix A: Flood Experience Questionnaire

About this questionnaire

As part of the Project Groundwater research project, this questionnaire has been developed to increase our understanding of the existing levels of resilience within your community.

The responses to this survey will help shape the research and innovation to be undertaken as part of the project, with the aim to identify and implement measures that will increase resilience from future groundwater flood events.

For further information regarding Project Groundwater, please visit www.projectgroundwater.co.uk.

The survey will take approximately 10 to 20 minutes to complete. All questions are optional, but completing the full survey will assist us much further in our research and development.

Your responses to this survey are extremely valuable to our research. Appropriate measures will be taken to ensure data security, and confidentiality:

- All responses to this survey are strictly confidential
- Responses will be reported in aggregate form only.
- No individual responses will be singled out or reported in a manner that could identify the participant.
- The data collected will be stored in a secure database and only be accessible to the research team.
- On receipt of this completed hand-written questionnaire, the data will be input into the online system within five working days, and the paper copy will be destroyed.

Section 1 – Demographics

Title

- ☐ Mr
☐ Mrs
☐ Miss
☐ Ms
☐ Other (please self-describe): _____

Full Name



Address:

Postcode _____

Section 2 – Property Information

1. Is your property a residential dwelling or business?

If it is multiple use, we just require the use on the ground floor

- ☐ Residential
- ☐ Business

2. Are you a property owner or tenant?

- ☐ Property owner
- ☐ Tenant

3. How long have you occupied the property?

Please enter '0' if less than 1 year.

_____ Years

- ☐ I do not live at the property

4. From the list below, which best describes your property type?

- ☐ Detached
- ☐ Semi-detached
- ☐ Mid terrace
- ☐ End terrace
- ☐ Link detached
- ☐ Ground floor flat
- ☐ Basement flat
- ☐ Flat above the ground floor
- ☐ Non-domestic property

5. What is the property wall construction?

Please provide your best guess if you are unsure. Please select multiple answers if the building comprises varying construction, if for example it has been extended.

- ☐ Brick cavity wall



- ☐ Solid brick / block wall
- ☐ Traditional (historic) timber frame
- ☐ Modern timber frame
- ☐ Other – please specify if known: _____

6. What is the property's foundation/floor construction?

Please provide your best guess if you are unsure. Please select multiple answers if the building comprises varying construction, if for example it has been extended.

- ☐ Solid concrete
- ☐ Suspended timber
- ☐ Suspended concrete
- ☐ Other – please specify if known _____

7. Does your property contain a cellar or basement?

- ☐ Yes – a habitable cellar or basement
- ☐ Yes – a non-habitable, but accessible cellar or basement
- ☐ Yes – an inaccessible cellar or basement
- ☐ No
- ☐ Unsure / suspected

8. Is your property listed by Historic England?

- ☐ Yes
- ☐ No
- ☐ Don't know

9. Do you have flood insurance cover?

- ☐ Yes – buildings insurance only
- ☐ Yes – contents insurance only
- ☐ Yes – buildings and contents insurance
- ☐ No
- ☐ Don't know
- ☐ Prefer not to say

Many home insurance providers do not allow claims for damage caused by groundwater flooding. We strongly recommend you check with your insurance provider that groundwater flooding is covered, and whether you can be signed up for the Build Back Better initiative. The Build Back Better initiative is government-backed and provides homeowners of properties built before 2009 with the opportunity to install property flood resilience measures potentially up to the value of £10,000 when undertaking repairs and reinstatement works to their properties after a flood. More information can be found on FloodRe's website (www.floodre.co.uk), who administer the initiative.



10. Have you had any issues with obtaining insurance cover (buildings or contents) due to the property's flood history or flood risk?

- ☐ Yes
- ☐ No
- ☐ Don't know
- ☐ Prefer not to say

11. If you have sought to claim for a payout from your insurer following a flood event, have there been any issues with the claim process and/or receiving payouts?

- ☐ Have not needed to claim
- ☐ Yes
- ☐ No
- ☐ Don't know
- ☐ Prefer not to say

Please provide any further details you are comfortable to share regarding your experiences regarding your insurance provider.

Section 3 – Flood History

12. Has the property flooded during the occupancy?

This could be internal flooding, but also flooding that has taken place immediately adjacent to the building.

- ☐ Yes
- ☐ No

If you have answered No, Skip to section 4.

Only answer the rest of this section if your property has previously flooded.

13. How many times have you been flooded?

- ☐ 1



- ☐ 2
- ☐ 3
- ☐ 4+

The following questions are in relation to the worst flood event

The 'worst' event will be subjective to different people, and could be the one that lasted the longest, was the most disruptive, or required the largest insurance payout.

14. When was the worst recent flood event?

_____ month _____ year

15. How long did the worst flood event last?

Please provide an estimation if you are not sure. If the flooding was less than 1 day, please respond with 0 weeks, 1 day.

_____ weeks _____ days

Explanations of different causes of flooding:

- **Rainfall (surface water)** - Surface water flooding occurs when rainwater or melted snow builds up on the ground, causing nearby areas to flood.
- **From rivers, lakes, streams (fluvial)** - Fluvial water flooding occurs when rivers or streams overflow, flooding nearby areas.
- **From the ground (groundwater)** - Groundwater flooding occurs when the water level in rocks and soil rises, and causes flooding at the surface.
- **From drains, or sewers** - Sewer flooding occurs when drains or sewers reach capacity as a result of inundation from water at the surface or infiltration from groundwater, resulting in water backing up through pipes and emerging at the surface or within properties.

16. What caused the flooding?

Select all relevant options.

- ☐ Rainfall (surface water)
- ☐ From rivers, lakes, streams (fluvial)
- ☐ From the ground (groundwater)
- ☐ From drains or sewers



- ☐ Property is at risk of flooding, but the source(s) of flooding are not known
- ☐ Don't know

17. Did your cellar or basement flood during the worst flood event?

- ☐ Yes
- ☐ No
- ☐ Don't know
- ☐ No cellar or basement

If you are able to provide any further information regarding how you have previously been impacted by flooding, or any further comments you may have, please use the box at the end of the survey. On the online survey you can upload photos. If you would like to share photos, you can email them to us at hello@projectgroundwater.co.uk and let us know you'd like them to be considered with your Flood Experience Questionnaire.

18. Did you know your property was at risk of flooding when you purchased it / became the tenant?

- ☐ Yes
- ☐ No
- ☐ Suspected, but no information was provided to confirm
- ☐ Don't know

You can check whether an Environment Agency Flood Warning or Alert is available for your property using the online service: www.fws.environment-agency.gov.uk/app/olr/home

19. Are you signed up for the Environment Agency's flood warning?

Select all that apply

- ☐ Yes
- ☐ No
- ☐ Don't know

20. Did you receive a Flood Alert or Warning in advance of the worst flood event?

- ☐ Yes
- ☐ No
- ☐ Not signed up to receive Flood Alerts



21. Did the Flood Alert or Warning provide enough time for you to prepare for the flood?

- ☐ Yes
- ☐ No
- ☐ Not signed up to receive Flood Alerts

22. Do you have a personal flood action plan?

- ☐ Yes
- ☐ No

23. How has floodwater entered your property during previous flood events?

Select all that apply

- ☐ Through outer doors
- ☐ Through outer walls
- ☐ Through a partition wall of a neighbouring property – the wall between two terraced or semi-detached properties, that joins them together
- ☐ Came up through a solid concrete floor
- ☐ Came up through airbricks and/or a suspended timber floor – water coming out of toilets, baths, showers, sinks, or other appliances
- ☐ Don't know
- ☐ Did not enter the property

24. How high has water reached inside the property and ground floor level?

- ☐ No water entered the property
- ☐ Water ingress but less than 10cm/4 inches
- ☐ 10cm / 4 inches
- ☐ 10 – 30cm / 4 – 12 inches
- ☐ 30 – 60cm / 12 – 24 inches
- ☐ 60cm+ / 24 inches +

25. How high has water reached outside the property?

We are looking for areas immediately adjacent to your property, such as outside walls.

- ☐ Up to 10cm / 4 inches
- ☐ 10 – 30cm / 4 – 12 inches
- ☐ 30 – 60cm / 12 – 24 inches
- ☐ 60cm+ / 24 inches +

26. How high has water reached in your cellar or basement?



- ☐ No cellar or basement present
- ☐ Up to 10cm / 4 inches
- ☐ 10 – 30cm / 4 – 12 inches
- ☐ 30 – 60cm / 12 – 24 inches
- ☐ 60cm+ / 24 inches +

27. Which aspect of the flood event caused the most disruption or inconvenience?

Please select all that apply.

- ☐ Property is completely flooded and unable to live / work during flooding and reinstatement
 - ☐ Unable to access property
 - ☐ Unable to use bathroom, kitchens and appliances during flood events
 - ☐ Other (please specify)
-
-

- ☐ None of the above

Section 4 – Flood Risk

Only answer this section if your property has not previously flooded and you have not answered Section 3.

28. Do you know whether your property is at risk of flooding?

- ☐ Yes, it is at risk of flooding
- ☐ No, it is not at risk as far as I am aware
- ☐ Don't know

Explanations of different causes of flooding:

- **Rainfall (surface water)** - Surface water flooding occurs when rainwater or melted snow builds up on the ground, causing nearby areas to flood.
- **From rivers, lakes, streams, or canals (fluvial)** - Fluvial water flooding occurs when rivers or streams overflow, flooding nearby areas.
- **From the ground (groundwater)** - Groundwater flooding occurs when the water level in rocks and soil rises and causes flooding at the surface.
- **From drains, or sewers** - Sewer flooding occurs when drains or sewers reach capacity as a result of inundation from water at the surface or infiltration from groundwater, resulting in water backing up through pipes and emerging at the surface or within properties.



You can check whether an Environment Agency Flood Warning or Alert is available for your property using the online service: www.fws.environment-agency.gov.uk/app/olr/address

29. Is a Flood Warning or Flood Alert available for your property?

Select all that apply

- ☐ Yes – Flood Alert / Warning for flooding from rivers
- ☐ Yes – Flood Alert for groundwater flooding
- ☐ No
- ☐ Don't know

30. Do you have a personal flood action plan?

- ☐ Yes
- ☐ No

Section 5 – Property Flood Resilience

Only answer this section if you have existing Property Flood Resilience measures installed at your property.

31. What measures do you have installed?

Select all relevant options.

- ☐ External flood wall
 - ☐ External flood embankment or landscaping
 - ☐ Improved drainage systems or storage
 - ☐ Flood Doors
 - ☐ Flood Barriers
 - ☐ Anti-Flood Air Bricks / Air Brick Covers
 - ☐ Deployable pump
 - ☐ Sump pump
 - ☐ Non-Return Valve
 - ☐ Toilet Bung
 - ☐ Wall tanking / waterproofing
 - ☐ Cavity Drainage Waterproofing Systems
 - ☐ Flood recoverable* flooring (e.g. tiles)
 - ☐ Flood recoverable* walls / plasterboard
 - ☐ Flood recoverable* skirting
 - ☐ Flood recoverable* kitchen
 - ☐ Raised electrical sockets
 - ☐ Other (please specify)
-
-



**Flood recoverable materials are materials which do not become significantly damaged during a flood and therefore do not need to be removed or stripped following a flood event. Flood recoverable materials can be cleaned or easily repaired in-situ, without the need for replacement.*

32. How were your Property Flood Resilience measures funded?

Select all that apply

- ☐ Privately funded
- ☐ Grant funding from the Environment Agency / Local Authority / Sewerage Company
- ☐ Insurance provider
- ☐ Don't Know – Installed by landlord, freeholder or previous property owner
- ☐ Other (please specify)

33. How effective were your existing flood resilience measures?

Select all that apply

- ☐ Effective – none or minimal floodwater ingress occurred.
- ☐ Effective – none, minimal, or reduced flood damage occurred internally due to flood recoverable materials
- ☐ Measures were overtopped due to depth of floodwater.
- ☐ Measures were overwhelmed due to depth / volume of floodwater.
- ☐ Measures were effective for a time.
- ☐ Measures were ineffective due to power failure.
- ☐ Measures not implemented or deployed during flood.
- ☐ Measures not tested given flood depths experienced.

Please feel free to provide further details, particularly if you have experienced multiple flood events where the measures have been deployed with varying degrees of success:



34. If you have a pump, where do you pump the water to?

Select all that apply

- ☐ External area within the property
- ☐ Drain within the property
- ☐ External area at the property boundary
- ☐ River, stream, or other watercourses
- ☐ Public highway

Section 6 – Indirect flooding impacts

35. What does the term 'flood resilience' mean to you?

36. Have you been impacted by flooding indirectly, e.g. flooded roads or blocked sewers?

- ☐ Yes
- ☐ No

37. If yes, how have you been impacted?

Select all relevant options

- ☐ Flooded roads / road closures
- ☐ Blocked sewers / unable to use bathrooms / kitchens / appliances
- ☐ Closure of local schools / businesses
- ☐ Other (please specify)



We ask the following questions to get a better understanding of the psychological and emotional impacts of flooding and what steps can be taken to reduce this. Project Groundwater is seeking to get a clear understanding of all impacts of flooding with the potential to identify funding for new support initiatives. This information won't be shared with any third parties.

38. Has your personal health and wellbeing, including emotional and mental health, been impacted as a result of the flooding experienced?

- ☐ Yes
- ☐ No
- ☐ Prefer not to say

39. Have you received any medical support and/or therapy for your health and wellbeing due to the flooding experienced?

- ☐ Yes
- ☐ No
- ☐ Prefer not to say

40. Would you be interested in using a community facility of bathrooms and/or kitchens if these were provided during a flood event?

- ☐ Yes
- ☐ No
- ☐ Unsure

41. Would you be interested in joining a Local Flood Action Group?

- ☐ I am already a member of a Flood Action Group
- ☐ Yes
- ☐ No
- ☐ Unsure – I would like further information

42. Do you have any further ideas or thoughts about ways in which the flooding could be managed at your property or in your community?



Section 7 – Increasing resilience through Project Groundwater

43. If you are eligible, would you be interested in exploring what flood resilience measures may be suitable for your property?

- ☐ Yes
- ☐ No

We cannot guarantee that all respondents who select Yes will receive a survey, and this will be determined following a review of all responses to identify the properties at greatest risk. **Part of this screening exercise will be based on responses received to this questionnaire, and therefore completing all relevant sections will help us to identify those properties at greatest risk.**

44. Project Groundwater are looking to fund Property Flood Resilience surveys for properties within the pilot communities identified to be at greatest risk from groundwater flooding. At this stage we are not able to confirm whether the supply and installation of any potentially suitable measures identified through a survey could be partially or fully funded. These surveys would be for your own information and would not be shared with any third party without permission, such as insurance companies.

If you are eligible, do we have permission to contact you about receiving a PFR Survey?

- ☐ Yes
- ☐ No

45. If yes, please provide a contact e-mail address and/or telephone number.

Email: _____

Telephone number: _____

46. Would you like to sign up to the Project Groundwater newsletter?

- ☐ Yes
- ☐ No

47. How did you hear about this survey?

- ☐ My local flood group
- ☐ Posted leaflet
- ☐ Project Groundwater newsletter
- ☐ Social media
- ☐ Flyers in a community space
- ☐ Project Groundwater website
- ☐ Other, please state: _____



If you are able to provide any further information regarding how you have previously been impacted by flooding, or any further comments you may have, please use the box below.

If you wish to submit a photo, please send the photos to hello@projectgroundwater.co.uk.

Thank you for taking the time to complete this questionnaire. Your responses will provide valuable information to allow Project Groundwater to support the project's research and innovation and to identify the best ways to support yourself and your communities during future flood events.



Appendix B: Flood Experience Questionnaire for Landlords

About this questionnaire

As part of the Project Groundwater research project, this questionnaire has been developed to increase our understanding of the existing levels of resilience within your community.

The responses to this survey will help shape the research and innovation to be undertaken as part of the project, with the aim to identify and implement measures that will increase resilience from future groundwater flood events.

For further information regarding Project Groundwater, please visit www.projectgroundwater.co.uk.

The survey will take approximately 10 to 20 minutes to complete. All questions are optional, but completing the full survey will assist us much further in our research and development.

Your responses to this survey are extremely valuable to our research. Appropriate measures will be taken to ensure data security, and confidentiality:

- All responses to this survey are strictly confidential
- Responses will be reported in aggregate form only.
- No individual responses will be singled out or reported in a manner that could identify the participant.
- The data collected will be stored in a secure database and only be accessible to the research team.
- On receipt of this completed hand-written questionnaire, the data will be input into the online system within five working days, and the paper copy will be destroyed.

Section 1 – Demographics

Title

- ☐ Mr
☐ Mrs
☐ Miss
☐ Ms
☐ Other (please self-describe): _____

Full Name



Address (primary residence or business address):

Street address _____

Town/city _____

County _____

Postcode _____

Which landlord or property management association(s) are you affiliated with?

☐ I am not affiliated with a landlord or property management association

Section 2 - Property Information

1. Are you a landlord or property manager?

Select all that apply

- ☐ Live-in landlord
☐ Remote landlord
☐ Property manager

2. How long have you rented out or managed properties?

_____ years

☐ Less than 1 year

3. How many rental properties do you own or manage within the following areas?

Chesham	Hinksey Park (Oxford)	Marlow
Waterside (and adjoining roads)	Abingdon Road (and adjoining roads)	Maple Rise
Bois Moor Road (and adjoining roads)	Lake Street	Winchbottom Lane
Pednormead End (Amy Lane, Germain Street, Wey Lane, Church Street)	Western Road (and adjoining roads)	Monkton Lane
Broad Street (and adjoining roads)	Marlborough Road (and adjoining roads)	Well End (Marlow Road, Wendover Road, Abby



		Road, Elm Lane, Chapman Lane)
Berkhampstead Road (and adjoining roads)	Hodges Court	Marlow Bottom
Vale Road (and adjoining roads)	Canning Crescent	Pound Lane (and adjoining roads)
Asheridge Road (and adjoining roads)		Wycombe Road (and adjoining roads)
Bellingdon Road (and adjoining roads)		Newton Road (and adjoining roads)
Sunnyside Road (and adjoining roads)		Glade Road (and adjoining roads)
		Dedmere Road (and adjoining roads)
		Station Road (and adjoining roads)

If unsure, please provide an approximation

_____ properties

If the answer is 0, you are welcome to complete the rest of the questionnaire to enable us to assess whether your property(s) are at groundwater flood risk, however please be advised that we are looking to prioritise supporting properties in the areas listed given the known groundwater flood risks within these areas.

4. What type of properties do you own or manage?

Select all that apply

- ☐ Residential – single-family homes
- ☐ Residential – multiple occupants, e.g., student properties, HMOs
- ☐ Small scale commercial, e.g., individual shops, small businesses
- ☐ Large scale commercial, e.g., office buildings, industrial
- ☐ Mixed use
- ☐ Agricultural e.g. land holdings, farms, orchards
- ☐ Seasonal – timeshares or holiday homes

5. If you own or manage residential properties, which of the below best describes your property type?

Select all that apply

- ☐ Detached
- ☐ Semi-detached



- ☐ Mid terrace
- ☐ End terrace
- ☐ Link detached
- ☐ Ground floor flat
- ☐ Basement flat
- ☐ Flat above the ground floor
- ☐ Non-domestic property

6. Do you operate primarily short- or long-term rentals?

- ☐ Long-term (2+ years)
- ☐ Short-term (Up to 2 years)
- ☐ Both

7. Do any of your properties contain a cellar or basement?

- ☐ Yes – a habitable cellar or basement
- ☐ Yes – a non-habitable, but accessible cellar or basement
- ☐ Yes – an inaccessible cellar or basement
- ☐ No
- ☐ Unsure / suspected

8. Are any of your properties listed by Historic England?

You can find out if your property is listed by searching for your postcode on the Historic England website (www.historicengland.org.uk/listing)

- ☐ Yes, the majority of the properties (Greater than 50%)
- ☐ Yes, some of the properties (Up to 50%)
- ☐ No, none of the properties
- ☐ Don't know

9. If yes, please provide details on which properties are listed and any relevant listing information

10. Do your properties have flood insurance cover?

- ☐ Yes, the majority of the properties (Greater than 50%)
- ☐ Yes, some of the properties (Up to 50%)
- ☐ No, none of the properties
- ☐ Don't know

11. For the properties that have flood insurance cover, which type of insurance do they have?

- ☐ Buildings insurance only



- ☐ Contents insurance only
- ☐ Buildings and contents insurance

Many home insurance providers do not allow claims for damage caused by groundwater flooding. We strongly recommend you check with your insurance provider that groundwater flooding is covered, and whether you can be signed up for the Build Back Better initiative. The Build Back Better initiative is government-backed and provides homeowners of properties built before 2009 with the opportunity to install property flood resilience measures potentially up to the value of £10,000 when undertaking repairs and reinstatement works to their properties after a flood. More information can be found on FloodRe's website (www.floodre.co.uk), who administer the initiative.

12. Have you had any issues with obtaining insurance cover (buildings or contents) due to the property's flood history or flood risk?

- ☐ Yes
- ☐ No
- ☐ Don't know
- ☐ Prefer not to say

13. If you have sought to claim for a payout from your insurer following a flood event, have there been any issues with the claim process and/or receiving payouts?

- ☐ Have not needed to claim
- ☐ Yes
- ☐ No
- ☐ Don't know
- ☐ Prefer not to say

Please provide any further details you are comfortable to share regarding your experiences regarding your insurance provider.

Section 3 – Flood History

14. Have the properties you manage or own been flooded under your management/ownership?

This could be internal flooding, but also flooding that has taken place immediately adjacent to the building.



- ☐ Yes, the majority of the properties (Greater than 50%)
- ☐ Yes, some of the properties (Up to 50%)
- ☐ No, none of the properties

If you answered No, please skip to section 4.

Only answer the rest of this section if any of your properties have previously flooded.

15. How many times, on average, have your properties flooded?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4+

The following questions are in relation to the worst flood event

The 'worst' event will be subjective to different people, and could be the one that lasted the longest, was the most disruptive to yourself or your tenants, or required the largest insurance payout.

16. When was the worst recent flood event?

_____ month _____ year

17. How long did the worst flood event last?

Please provide an estimation if you are not sure. If the flooding was less than 1 day, please respond with 0 weeks, 1 day.

_____ weeks _____ days

18. What caused the flooding?

Select all that apply.

- ☐ Rainfall (surface water)
- ☐ From rivers, lakes, streams (fluvial)
- ☐ From the ground (groundwater)
- ☐ From drains or sewers
- ☐ Property is at risk of flooding, but the source(s) of flooding are not known



☐ Don't know

Explanations of different causes of flooding:

- **Rainfall (surface water)** - Surface water flooding occurs when rainwater or melted snow builds up on the ground, causing nearby areas to flood.
- **From rivers, lakes, streams (fluvial)** - Fluvial water flooding occurs when rivers or streams overflow, flooding nearby areas.
- **From the ground (groundwater)** - Groundwater flooding occurs when the water level in rocks and soil rises and causes flooding at the surface.
- **From drains, or sewers** - Sewer flooding occurs when drains or sewers reach capacity as a result of inundation from water at the surface or infiltration from groundwater, resulting in water backing up through pipes and emerging at the surface or within properties.

19. Did the cellar or basement flood in any of your properties during the worst flood event?

- ☐ Yes, in most properties (Greater than 50%)
- ☐ Yes, in some properties (Up to 50%)
- ☐ No
- ☐ Don't know
- ☐ No cellars or basements

If you are able to provide any further information regarding how you have previously been impacted by flooding, or any further comments you may have, please use the box at the end of the survey. On the online survey you can upload photos. If you would like to share photos, you can email them to us at hello@projectgroundwater.co.uk and let us know you'd like them to be considered with your Flood Experience Questionnaire.

20. Did you know whether any of your properties were at risk of flooding when you purchased them or began managing them?

- ☐ Yes
- ☐ No
- ☐ Suspected, but no information was provided to confirm
- ☐ Don't know

You can check whether an Environment Agency Flood Warning or Alert is available for your property using the online service: www.fws.environment-agency.gov.uk/app/olr/home



21. Are you signed up for the Environment Agency's flood warning?

Select all that apply

- ☐ Yes
- ☐ No
- ☐ Don't know

22. Did you receive a Flood Alert or Warning in advance of the worst flood event?

- ☐ Yes, for most of the properties impacted (Greater than 50%)
- ☐ Yes, for some of the properties impacted (Up to 50%)
- ☐ No
- ☐ Not signed up to receive Flood Alerts

23. Did the Flood Alert or Warning provide enough time for you and/or your tenants to prepare for the flood?

- ☐ Yes
- ☐ No
- ☐ Not signed up to receive Flood Alerts

24. Which of the following emergency procedures do you have in place for handling flooding in your rental properties?

- ☐ Established evacuation procedure
- ☐ Communication with tenants
- ☐ Repair plans for flood damage
- ☐ Personal flood action plan for tenants
- ☐ Basic guidelines
- ☐ None, but currently developing procedures
- ☐ None, and no current plans to develop procedures
- ☐ Unsure

25. What is your typical response time for addressing flood-related issues raised by your tenants?

- ☐ Within 24 hours
- ☐ Within 2-3 days
- ☐ Up to a week
- ☐ Longer than a week
- ☐ Varies, dependant on severity

26. How do you communicate with tenants about flood preparedness and response procedures?

- ☐ Written notices (e.g., letters, flyers, or a notice board)
- ☐ By email
- ☐ By text or messaging app (e.g., WhatsApp)



- ☐ Tenant meetings or briefings
- ☐ Information packets or handbooks (e.g., in a welcome packet)
- ☐ Property management apps or portals
- ☐ Emergency preparedness drills
- ☐ Social media

27. How has floodwater entered your properties during previous flood events?

Select all that apply

- ☐ Through outer doors
- ☐ Through outer walls
- ☐ Through a partition wall of a neighbouring property – the wall between two terraced or semi-detached properties, that joins them together
- ☐ Came up through a solid concrete floor
- ☐ Came up through airbricks and/or a suspended timber floor – water coming out of toilets, baths, showers, sinks, or other appliances
- ☐ Don't know
- ☐ Did not enter the property

28. How high has water reached inside your properties and ground floor level?

If heights vary, use the property with the highest levels.

- ☐ No water entered the property
- ☐ Water entered but depth was lower than 10cm / 4 inches
- ☐ 10cm / 4 inches
- ☐ 10 – 30cm / 4 – 12 inches
- ☐ 30 – 60cm / 12 – 24 inches
- ☐ 60cm+ / 24 inches +

29. How high has water reached outside the property?

We are looking for areas immediately adjacent to your property, such as outside walls. If heights vary, use the property with the highest levels.

- ☐ Up to 10cm / 4 inches
- ☐ 10 – 30cm / 4 – 12 inches
- ☐ 30 – 60cm / 12 – 24 inches
- ☐ 60cm+ / 24 inches +

30. How high has water reached in your cellar or basement?

If heights vary, use the property with the highest levels.

- ☐ No cellar or basement present
- ☐ Up to 10cm / 4 inches
- ☐ 10 – 30cm / 4 – 12 inches
- ☐ 30 – 60cm / 12 – 24 inches



☐ 60cm+ / 24 inches +

31. Which aspect of the worst recent flood event caused the most disruption or inconvenience to tenants?

Please select all that apply.

- ☐ Properties were completely flooded and tenants unable to live / work during flooding and reinstatement
- ☐ Tenants unable to access properties
- ☐ Tenants unable to use bathroom, kitchens and appliances during flood events
- ☐ Other (please specify)

☐ None of the above

32. Do you keep records of flood-related maintenance and repairs?

- ☐ Yes, comprehensive and up to date records
- ☐ Yes, rough/informal records
- ☐ No

Section 4 – Flood Risk

Only answer this section if your property has not previously flooded and you have not answered Section 3.

33. Are your properties at risk of flooding?

- ☐ Yes, most are at risk of flooding (Greater than 50%)
- ☐ Yes, some are at risk of flooding (Up to 50%)
- ☐ No, not as far as I am aware
- ☐ Don't know

Explanations of different causes of flooding:

- **Rainfall (surface water)** - Surface water flooding occurs when rainwater or melted snow builds up on the ground, causing nearby areas to flood.
- **From rivers, lakes, streams, or canals (fluvial)** - Fluvial water flooding occurs when rivers or streams overflow, flooding nearby areas.
- **From the ground (groundwater)** - Groundwater flooding occurs when the water level in rocks and soil rises and causes flooding at the surface.



- **From drains, or sewers** - Sewer flooding occurs when drains or sewers reach capacity as a result of inundation from water at the surface or infiltration from groundwater, resulting in water backing up through pipes and emerging at the surface or within properties.

You can check whether an Environment Agency Flood Warning or Alert is available for your property using the online service: www.fws.environment-agency.gov.uk/app/olr/address

34. Do you have access to a Flood Warning or Flood Alert for your properties?

Select all that apply

- ☐ Yes – Flood Alert / Warning for flooding from rivers
- ☐ Yes – Flood Alert for groundwater flooding
- ☐ No
- ☐ Don't know

35. Which of the following emergency procedures do you have in place for handling flooding in your rental properties?

- ☐ Established evacuation procedure
- ☐ Communication with tenants
- ☐ Repair plans for flood damage
- ☐ Personal flood action plan for tenants
- ☐ Basic guidelines
- ☐ None, but currently developing procedures
- ☐ None, no plans to develop procedures
- ☐ Unsure

36. What is your typical response time for addressing flood-related issues?

- ☐ Within 24 hours
- ☐ Within 2-3 days
- ☐ Up to a week
- ☐ Longer than a week
- ☐ Varies, dependant on severity

37. How do you communicate with tenants about flood preparedness and response procedures?

- ☐ Written notices (e.g., letters, flyers, or a notice board)
- ☐ By email
- ☐ By text or messaging app (e.g., WhatsApp)
- ☐ Tenant meetings or briefings
- ☐ Information packets or handbooks (e.g., in a welcome packet)
- ☐ Property management apps or portals
- ☐ Emergency preparedness drills
- ☐ Social media



Section 5 – Property Flood Resilience

38. Do you have any Property Flood Resilience (PFR) measures installed in any of your properties?

These are features designed to reduce flood damage, such as flood doors, raised electrical sockets, or water-resistant walls and floors.

- ☐ Yes, most (Greater than 50%)
- ☐ Yes, some (Up to 50%)
- ☐ No
- ☐ Don't know

If you answered no, please skip to section 6.

Only answer the rest of this section if you have existing Property Flood Resilience measures installed at your property.

39. What types of Property Flood Resilience measures do you have?

Select all that apply.

- ☐ Flood doors
- ☐ Flood barriers
- ☐ Water-resistant walls or floors
- ☐ Anti-flood air bricks, air brick covers, or snorkels
- ☐ Non-return valves on drains
- ☐ Pumps, including sump pumps
- ☐ Other (please specify)

40. Do you have any flood recoverability measures installed in your properties?

These are features that help your home to recover quickly after a flood, such as water-resistant flooring. They are made of materials that do not become significantly damaged during a flood and so can be cleaned or easily repaired instead of being stripped out and replaced after a flood.

- ☐ Yes
- ☐ No
- ☐ Don't know

41. If yes, what types of flood recoverability measures do you have?



Select all that apply

- ☐ Flood-recoverable kitchen (e.g., water-resistant materials for appliances)
 - ☐ Water-resistant flooring (e.g., tile, or concrete)
 - ☐ Water-resistant walls and skirting boards
 - ☐ Raised electrical sockets
 - ☐ Removable or raised appliances
 - ☐ Other (please specify)
-
-

42. How were your Property Flood Resilience measures funded?

Select all that apply

- ☐ Privately funded
 - ☐ Grant funding from the Environment Agency / Local Authority / Sewerage Company
 - ☐ Insurance provider
 - ☐ Don't Know – Installed by previous owner
 - ☐ Other (please specify)
-
-

43. How effective were your existing flood resilience measures?

Select all that apply

- ☐ Effective – none or minimal floodwater entry occurred.
- ☐ Effective – none, minimal, or reduced flood damage occurred internally due to flood recoverable materials
- ☐ Measures were overtopped because the floodwater was too deep
- ☐ Measures were overwhelmed by the depth and volume of the floodwater.
- ☐ Measures were effective for a time.
- ☐ Measures were ineffective because of a power failure.
- ☐ Measures were not put in place or used during a flood
- ☐ Measures were not tested because of the depth of the flooding experienced

Please feel free to provide further details, particularly if you have experienced multiple flood events where the measures have been deployed with varying degrees of success:



44. If you have a pump, where do you pump the water to?

Select all that apply

- ☐ External area within the property
- ☐ Drain within the property
- ☐ External area at the property boundary
- ☐ River, stream, or other watercourses
- ☐ Public highway

Section 6 – Indirect flooding impacts

45. What does the term 'flood resilience' mean to you?

46. Have your properties been impacted by flooding indirectly, e.g. flooded roads or blocked sewers?

- ☐ Yes
- ☐ No

47. If yes, how have they been impacted?

Select all that apply

- ☐ Flooded roads or road closures
- ☐ Blocked sewers leading to an inability to use bathrooms, kitchens, or appliances
- ☐ Closure of local schools or businesses
- ☐ Other (please specify)



We ask the following questions to get a better understanding of the psychological and emotional impacts of flooding and what steps can be taken to reduce this. Project Groundwater is seeking to get a clear understanding of all impacts of flooding with the potential to identify funding for new support initiatives. This information won't be shared with any third parties.

48. Has your personal health and wellbeing, including emotional and mental health, or that of your tenants been impacted as a result of the flooding experienced?

- ☐ Yes
- ☐ No
- ☐ Prefer not to say

49. Have you received any medical support (including therapy and mental wellbeing services) for your health and wellbeing because of a flooding experienced?

- ☐ Yes
- ☐ No
- ☐ Prefer not to say

50. Would you be interested in using a community facility of bathrooms and/or kitchens if these were provided during a flood event?

- ☐ Yes
- ☐ No
- ☐ Unsure

51. Would you be interested in joining a Local Flood Action Group?

- ☐ I am already a member of a Flood Action Group
- ☐ Yes
- ☐ No
- ☐ Unsure – I would like further information

52. Do you have any further ideas or thoughts about ways in which flooding could be managed at your property or in your community?



Section 7 – Increasing resilience through Project Groundwater

53. If you are eligible, would you be interested in exploring what flood resilience measures may be suitable for your property(s)?

- ☐ Yes
- ☐ No

We cannot guarantee that all respondents who select Yes will receive a survey, and this will be determined following a review of all responses to identify the properties at greatest risk. **Part of this screening exercise will be based on responses received to this questionnaire, and therefore completing all relevant sections will help us to identify those properties at greatest risk.** As part of this screening exercise, we may need to contact you privately to obtain specific details about individual properties where you have indicated that you own multiple properties within the community target areas.

Project Groundwater are looking to fund Property Flood Resilience surveys for properties within the pilot communities identified to be at greatest risk from groundwater flooding. At this stage we are not able to confirm whether the supply and installation of any potentially suitable measures identified through a survey could be partially or fully funded.

These surveys would be for your own information and would not be shared with any third party without permission, such as insurance companies.

54. If you are eligible, do we have permission to contact you about receiving a PFR Survey?

- ☐ Yes
- ☐ No

55. If yes, please provide a contact e-mail address and/or telephone number.

Email: _____

Telephone number: _____

56. Would you like to sign up to the Project Groundwater newsletter?

- ☐ Yes
- ☐ No

57. How did you hear about this survey?

- ☐ My local flood group
- ☐ Posted leaflet
- ☐ Project Groundwater newsletter
- ☐ Social media
- ☐ Flyers in a community space



- ☐ Project Groundwater website
- ☐ Landlords association
- ☐ Other, please state: _____

If you are able to provide any further information regarding how you have previously been impacted by flooding, or any further comments you may have, please use the box below.

If you wish to submit a photo, please send the photos to hello@projectgroundwater.co.uk.

Thank you for taking the time to complete this questionnaire. Your responses will provide valuable information to allow Project Groundwater to support the project's research and innovation and to identify the best ways to support yourself and your communities during future flood



Appendix C: Areas at Groundwater Flood Risk from Local Knowledge

Pang Valley

- Water Street, Hampstead Norreys
- Cow Lane, West Isley
- Abingdon Road, East Isley
- High Street, Compton

Lambourn Valley

- High Street, Lambourn
- Newbury Street / Newbury Road, Lambourn
- Sheepdrove Road, Lambourn
- Uplands Lane, Upper Lambourn
- Station Road, East Garston
- Front Road, East Garston
- Wantage Road, Great Shefford
- Back Street, Eastbury
- Newbury Road, Eastbury

Kimpton

- Claggy Road, Kimpton
- Lawn Avenue, Kimpton
- Dacre Crescent, Kimpton
- High Street, Kimpton

Chalfont St. Peter

- High Street
- Lower Road
- Woodside Close
- Church Lane
- Market Place
- Cordon's Close



Marlow

- Maple Rise

Chesham

- No specific areas identified

Luton

- Sworder Close, Bramingham
- Ames Close, Bramingham
- Bancroft Road / Birdsfoot Lane, Limbury

Hinksey Park, Oxford

- Abingdon Road
- Lake Street
- Western Road

Colnbrook-with-Poyle

- Cottesbrook Close
- Albany Park
- Vicarage Way
- Willow Close



Appendix D: Frequently Asked Questions

Who is this questionnaire for?

This survey is open to both residents and businesses. We are looking for those who have been both directly and/or indirectly impacted by groundwater flooding.

Direct impacts of flooding are defined as impacts that occur due to physical contact with floodwaters, such as damage to properties.

Indirect impacts are defined as those that are not due to physical contact with flood water and may occur outside the flooded area in space or time. These include subsequent or secondary results such as business interruption losses, the inability to use your facilities linked to sewers, or interruption to travel routes.

Despite the name, both direct and indirect impacts of flooding can be devastating for residents and businesses, and we want to capture all experiences with flooding to ensure that we are researching solutions for all the ways people are affected. Therefore, even if flood water has never entered your home or business, your experiences with flooding can still support our research.

How is the landlord's questionnaire different?

The questionnaire has been modified to be easier for landlords to complete. It allows for the response to cover multiple properties, rather than just one.

How will completing this survey benefit me and my community?

When compared with other forms of flooding, there currently exists little support to communities that suffer the impacts of groundwater flooding. With this research, we are aiming to improve the advice that is available to residents and businesses at risk of groundwater flooding.

- We will research and identify the most suitable and effective Property Flood Resilience measures for properties at risk of groundwater flooding.*
- We will help develop new flood plans, or enhance plans where they already exist, to ensure communities are prepared and ready to manage the impacts of groundwater flooding.*
- We will explore the opportunities for strategic flood resilience measures that could help keep floodwater away from properties and infrastructure, ensuring communities can continue to function during groundwater flood events.*
- We will provide a best practice toolkit for preparing for groundwater flooding.*

What is the timeline of this questionnaire?

We will be running three rounds of this questionnaire, focussing on three of our communities each time.

Questionnaire Area 1: the Pang Valley, the Lambourn Valley and Kimpton



- *Flood Experience Questionnaire open Monday 19 August*
- *Questionnaire closes 30 September*
- *Eligible PFR Survey participants contacted by 31 January 2024*
- *PFR Surveys starting Spring 2025*

Questionnaire Area 2: Marlow, Chesham and Hinksey Park

- *Flood Experience Questionnaire opens October 2024*
- *Flood Experience Questionnaire closes mid-November 2024*
- *Eligible PFR Survey participants contacted by the end of February 2025*
- *PFR Surveys starting in late Spring 2025*

Questionnaire Area 3: Chalfont St Peter, Luton and Colnbrook with Poyle

- *Flood Experience Questionnaire opens 20 January 2025*
- *Flood Experience Questionnaire closes 31 March 2025*
- *Eligible PFR Survey participants contacted by May 2025*
- *PFR Surveys starting in Summer 2025*

How long will the questionnaire take to complete?

We have estimated the questionnaire will take anywhere between 10-20 minutes to complete.

This time varies significantly because there are sections that can be skipped based on your experiences. The questionnaire is also optional, and you can answer as many or as few questions as you would like.

However, each question is designed to support us in researching better groundwater flood resilience measures, so we appreciate completing as much of the questionnaire as you are able to.

Furthermore, if you are interested in the potential follow-up free Property Flood Resilience Survey, we will be using the information in this questionnaire to highlight eligible candidates. More information on this can be found below.

What is a Property Flood Resilience Survey?

Property Flood Resilience describes ways to protect a property from flood damage.

Often, residents and businesses will pay for Property Flood Resilience Surveys to understand what options are available to them. A Property Flood Resilience (PFR) Survey is an assessment carried out by experts to help homeowners and businesses understand how to protect their property from flooding. The survey identifies the risk of flooding, points where water could enter



the building, and recommends practical measures to either stop water from entering (resistance) or reduce damage if it does (resilience). These recommendations are tailored to the specific property and its residents, and the cost of any measures is taken into account.

How does this Property Flood Resilience Survey differ from others offered for free?

Most Property Flood Resilience products and measures currently available have been designed and developed to address more common and widespread forms of flooding, such as river flooding and surface water flooding. A typical Property Flood Resilience survey will therefore focus on identifying and addressing these sources of flooding, whilst caveating many of the uncertainties associated with groundwater flood risks where they exist.

The Property Flood Resilience surveys undertaken as part of Project Groundwater will flip this approach on its head, looking to understand the groundwater flooding issues in greater detail in order to identify suitable and effective measures.

The surveys will be undertaken by independent Property Flood Resilience consultants, and any recommendations will be based solely on the information collected about the flood risk, the property and the resident's requirements and preferences. In contrast, other providers may offer a free report in order to get you to buy their products. While we will recommend what measures could help you, we will not push any specific products or brands.

The project will not gain financially from undertaking these surveys.

You can choose to purchase the type products recommended in the report, and shop around for the best and most affordable option for yourself.

How many Property Flood Resilience Surveys will be completed, and why?

In each of our nine pilot communities, we will fund 7-8 Property Flood Resilience Surveys. These will allow us to understand how groundwater flooding is impacting people, what measures have been successful in the past, and what measures could support future resilience.

We will increase this number if further funding is secured, but that cannot be guaranteed at this stage.

I rent my property, can I fill in the questionnaire and be eligible for a Property Flood Resilience Survey?

Yes, if you live in rented accommodation, you can still take our flood experience questionnaire. Alternatively, you can send the landlord version to your landlord to complete if they have a better knowledge of how flooding impacted the residents and property.

If you complete the questionnaire and are eligible for a Property Flood Resilience Survey (PFR Survey), we will require landlord approval before commencing with the survey. If you would like



help asking your landlord to approve the offer of a free survey, we would be happy to support you by writing an email about the benefits of the PFR Survey that you can forward. You can also share this webinar we recorded on the topic: [Resilient Landlords: protecting properties from flooding webinar](#).

If you require support, please email hello@projectgroundwater.co.uk

Should I fill in the questionnaire even if I do not want a Property Flood Resilience Survey?

Yes, we welcome everyone to fill out this questionnaire, even if they would not like to receive a Property Flood Resilience Survey. There is a question within the questionnaire for you to indicate if you would like to be considered for the survey.

Even if you have previously had a Property Flood Resilience Survey, we would love for you to fill in the questionnaire, as you likely will have experiences that can help us understand what measures worked for the groundwater flooding you have experienced, and what did not.

How is eligibility determined for the Property Flood Resilience Surveys?

Eligibility will be determined through the responses given in the questionnaire and risk mapping.

We are looking for participants who:

- Live or have a business in one of our pilot communities*

AND

- Has experienced groundwater flooding that directly or indirectly affected their property*

AND/OR

- Is at high risk of groundwater flooding at the surface based on risk mapping that has been completed by Jacobs.*

If there are more eligible responses than we have available Surveys, we will prioritise recipients based on risk, by cross-referencing the questionnaire responses against the flood risk mapping developed as part of the project.

If you live in rented accommodation, we will need landlord approval before commencing with the PFR Survey.

Will any measures be put in place after the Property Flood Resilience Surveys?

Those who have a Survey will receive a report, which will include an assessment with recommendations on which Property Flood Resilience measure may be suitable and effective for their property. By having a survey and report undertaken there is no further commitment or requirement to take forward any of the recommended options.



The project is not able to commit to funding the purchase or installation of Property Flood Resilience measures for individual properties at this stage.

If our research identifies new or innovative flood resilience measures, those who have received Property Flood Resilience Surveys through our Project may be considered to trial these measures where their property is deemed suitable. In these instances, the project would support with the purchase of these trial measures given that we cannot guarantee that any measures which are installed on a trial basis will be effective. It should also be noted that there is no guarantee that any new or innovative measures will be identified as part of the project's research and development.

I've filled in the questionnaire, but wish to withdraw my consent. How do I do this?

Anyone who has filled in our questionnaire can withdraw their consent, as outlined in our [privacy and cookie policy](#). If you would like to withdraw your consent, please email hello@projectgroundwater.co.uk.



Appendix E: ONS Data - Subnational Estimates of Dwellings and Households by Tenure

TABLE 14: SUBNATIONAL DWELLING STOCK BY TENURE ESTIMATES FROM THE ONS¹³ USED IN SECTION 4.2

Region	Owned (outright / mortgage)	Rented (private / social)
Oxfordshire*	64.6%	35.5%
Buckinghamshire	71.2%	28.8%
West Berkshire	69.2%	30.9%
Slough	50.1%	50%
Luton	55.3%	44.6%
Hertfordshire*	65.2%	34.8%
Average across regions	62.6	37.43

*Averages were taken across the local authority regions within these counties

¹³ [Subnational estimates of dwellings and households by tenure, England - Office for National Statistics](#)