

Wealden Property Flood Resilience Project

Phase 1 (Pilot) Evaluation Summary Report



Version 2.1

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May 2018



Environment
Agency


Wealden
District Council

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1. Background

1.1 The Corporate Plan 2015-19 states that we will continue to work with our partners to “ensure engaged, resilient and active communities”. Following the successful ‘Flood awareness and preparedness’ project that ran from 2014-2016, the Council allocated some money from its reserves to help those Wealden residents¹ who are most at risk of flooding, to protect their properties.

2. Objectives

2.1 The project objectives were;

- Identify properties most at risk of flooding in the pre-identified areas
- Investigate options for a Property Flood Resilience scheme
- Present suggested scheme to the Chief Finance Officer and Cabinet Portfolio Holder for Emergency Planning
- Work with partners to develop the most appropriate scheme, offering the maximum benefit to residents at the most efficient cost/benefit ratio
- Apply to the Regional Flood and Coastal Committee (RFCC) for funding towards property level resilience measures for residents
- Obtain a 25% sign-up for free surveys
- Offer a grant to residents to enable them to buy some property flood resilience measures.

3. Scope & Initial Analysis

3.1 The main driver for this project was to encourage residents to take responsibility for the protection of their own properties in terms of flood resilience measures. The Council intended to achieve this by offering free property surveys, carried out by a qualified flood mitigation expert, to those residents whose properties were identified as most at risk. Properties were initially identified using the most recently commissioned Strategic Flood Risk Assessment (JBA Consultancy, Sept 2016). We focussed on Flood Zone 3.

3.2 Four areas were identified as suitable for this project; Forest Row, Uckfield, Hailsham/Hellingly and Alfriston. Their suitability was due to geographical location, the density of affected properties, the support of the relevant town and parish councils, and our experience of working in some of the areas on previous flood related projects.

¹ Within the pre-identified areas of Alfriston, Forest Row, Hellingly and Uckfield.

3.3 The Environment Agency (EA) modelled surface water and fluvial flood risk within the areas of interest and produced a list of those properties at risk from a 1 in 30 year flood event. We consulted local experts from each area, including local flood forums and town / parish councils, to ensure that we also included properties that were known to have experienced significant previous flooding, but were not within the flood zone. As a result, some additional properties were added to our database. These additional properties are referred to as 'historic' properties. The relationship between flood zone 3 and the historic properties we identified is shown in Appendix A.

3.4 As a result of the analysis, 210 properties were identified as eligible to receive the free property flood resilience survey. These properties were referred to as the 'Gold Key Properties'.

3.5 Whilst engagement events and advice were free and open to **all** residents, free surveys and subsidised products were **only** available to those residents whose properties had been identified by the EA as at risk from a probability of 1 in 30 (3.3%) year surface water or fluvial flood event, or those identified by local partners as having experienced flooding previously (the Gold Key properties).

4. Gold Key Properties

4.1 The map below (Figure 1.1) displays the location of the Gold Key properties within the context of the Wealden district. Figures 1.2 – 1.5 show these properties within the wards included in this first phase of the project. The three main areas were Forest Row in the north of the district (64 properties), Uckfield (34 properties) which is relatively central and Hailsham and Hellingly (100 properties) further south. Some were also located in Alfriston in the South West (10).

4.2 There are three categories of flood risk: Fluvial, Surface Water and Historic. The number of properties at risk in each category is shown in table 1.1.

Key		
	Fluvial Risk	4
	Surface Water Risk	116
	Historic Risk	90
	Wards included in phase 1	

Table 1.1 Gold Key properties by risk type

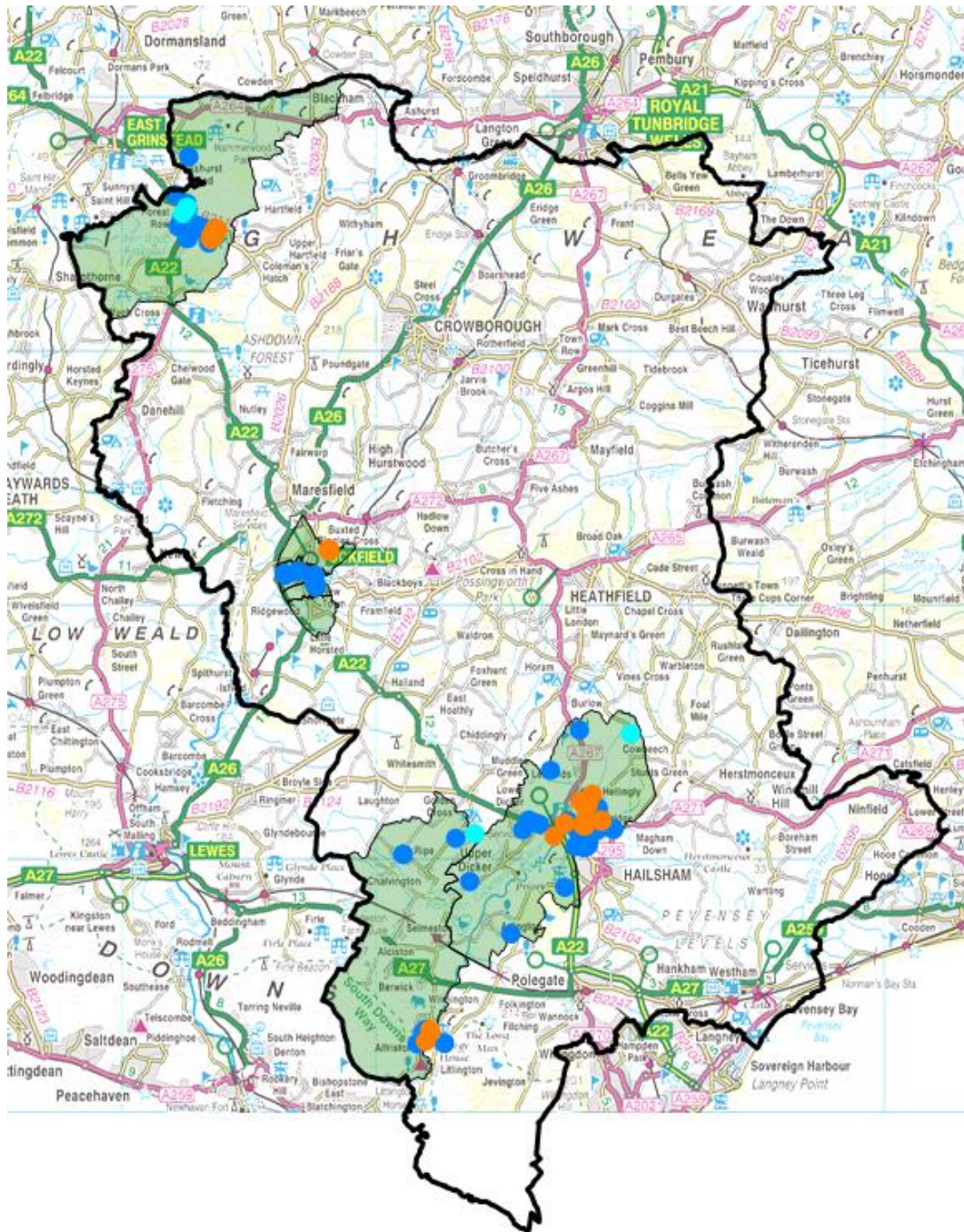


Figure 1.1 Map of Gold Key properties offered a survey

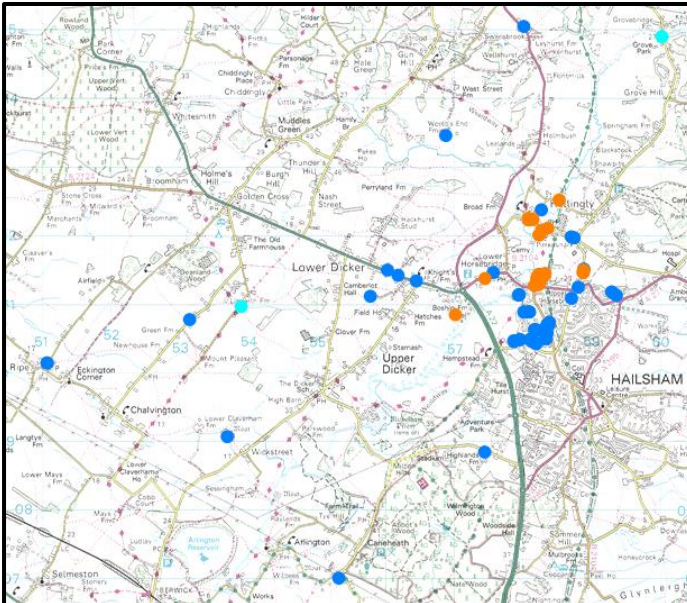


Figure 1.2 Map of gold key properties in Hailsham and Hellingly



Figure 1.3 Map of gold key properties in Alfriston

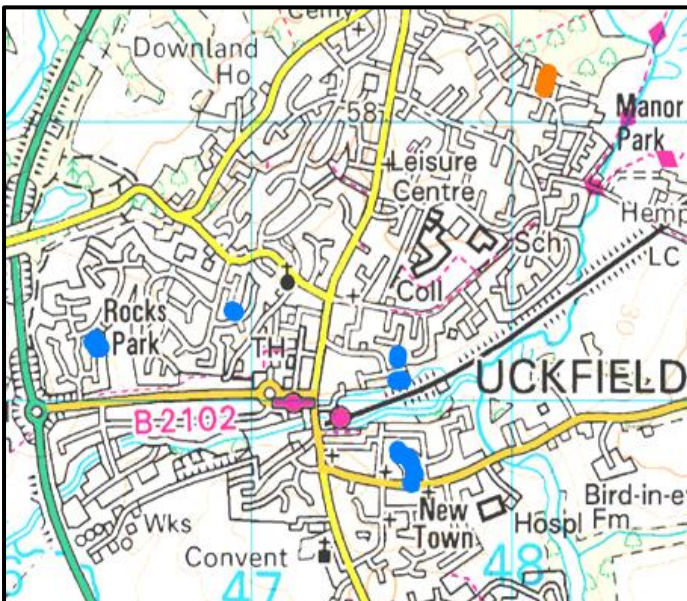


Figure 1.4 Map of gold key properties in Uckfield

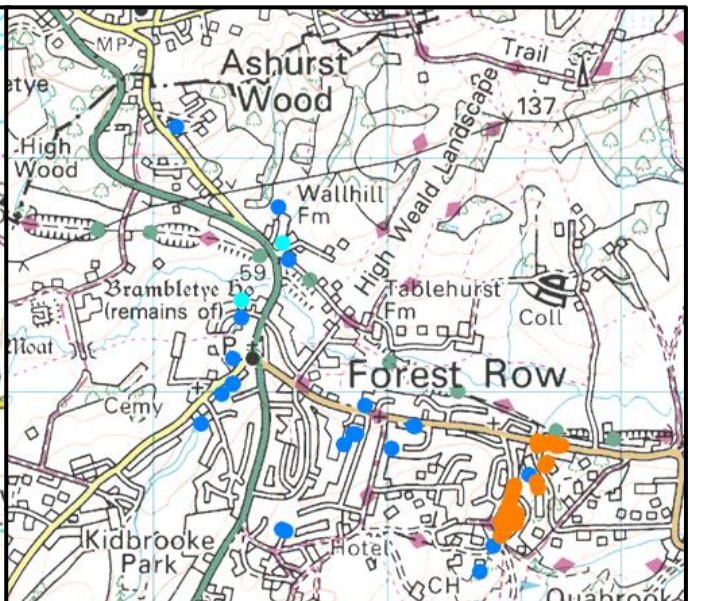


Figure 1.5 Map of gold key properties in Forest Row

5. Resident Engagement

5.1 In pairs, representatives from Wealden District Council and the Environment Agency undertook door-to-door visits to each of the Gold Key Properties. Visits took place over a 3 week period in February and March 2017. Information packs² were handed to residents, or posted through doors if there was nobody in. The packs were fronted with a personalised letter, telling people about the scheme and providing their personalised log in details to enable them to book a survey. Residents were also invited to attend their local drop-in public information event and to sign up for their free property survey.

5.2 Following these visits, public information events were held in the three main locations of interest (Hailsham/Hellingly borders, Uckfield and Forest Row). These took place on 7th, 8th & 9th March 2017 between 17:00-19:00.

5.3 At these events, residents had the opportunity to meet representatives from several agencies:

- Wealden District Council
- Environment Agency
- JBA Consultants (our instructed property surveyors)
- National Flood Forum
- East Sussex Fire & Rescue Service
- East Sussex County Council
- Cuckmere Flood Forum

5.4 The events allowed people to find out more about the property survey on offer. Residents were also able to view some of the resilience measures that they could install around their home, as well as having the opportunity to discuss any concerns they had about general flood related issues. Refreshments were provided and an informal, friendly environment was created.

5.5 Following the visits and engagement events, Wealden monitored the response (booking) rate with JBA consultants, keeping a record of who had booked a survey. Those residents who had not booked a survey within a week of their local public information event were sent a follow up letter. This was designed in collaboration with the Wealden Behavioural Insights Team and was more direct than the first letter in terms of its approach. It encouraged residents to book surveys, clearly highlighting the benefits to them and making it clear at the top of the letter that their property had been identified as at risk of flooding. We also clearly stated that this was a personalised offer to a select group whilst balancing this with a

² Prepared in conjunction with the National Flood Forum (NFF) and JBA Consultants. Contained general flood information and leaflets as well as specific project information.

comment about the popularity of the surveys amongst those who had also been offered one.

6. Surveys Booked

6.1 Of the 210 properties initially identified, 10 of these were found to be erroneous; either duplicate addresses, annexes of other properties or simply non-existent. A further 25 addresses were static caravans, all located within one residential park.

6.2 Wealden District Council agreed to fund a higher level survey for the static caravan site, looking at the site as a whole and identifying any measures that could reduce the flood risk for the entire site. It was agreed that Wealden would fund the survey, and that the findings would be used to inform any future mitigation work by the Environment Agency.

6.3 Taking the static caravans and erroneous addresses into account, we were left with a core of 175 Gold Key properties.

6.4 Of these 175 properties, 46 booked surveys, representing an uptake of 26%. Additionally, the owners of 6 properties (within the pre-defined areas) who were not identified as 'Gold Key' attended the public drop-in events and offered evidence of historic flooding. These residents were offered (and subsequently booked) surveys, taking the booking rate up to 29%³ (52 surveys).

6.5 By talking to residents at the drop-in events, we were also made aware of a cluster of 5 properties in Olives Meadow, Uckfield, which had previously flooded. These had not been identified through any of our previous mapping attempts and a decision was made to contact the owners of these properties by telephone. Following these telephone calls, all 5 properties booked surveys, resulting in an overall booking take-up of 31%⁴ (57 surveys).

³ 52 surveys booked out of 181 offered

⁴ 57 surveys booked out of 186 offered

Table 2.1 below summarises how many surveys were booked after each stage of engagement

Engagement	Number of residents who booked following the stated engagement	
	Booked Direct	Booked at event
Visited with first letter received in person	1	10
Visited with first letter posted as no answer	3	5
Did not receive a letter but attended information event and booked a survey	6	
Received a follow-up letter as had not booked after receiving first letter in person	15	
Received a follow-up letter as had not booked after receiving first letter in post	12	
Contacted by phone as being identified as at flood risk (out of 5 all in Olives Meadow, Uckfield)	5	
Total Booked	57	

Table 2.1 Number of surveys booked following each engagement method

Booking Method	Number of surveys booked	% of total surveys
Booked direct with JBA (online or phone)	38	67%
Booked at information event	19	33%

Table 2.2 Proportion of surveys that were booked via each method

7. Engagement Analysis

7.1 Of those who booked surveys, approximately 50% did so after the follow-up letter was sent; 19 booked before and 27 booked after receipt.

7.2 The majority of those residents who booked a survey before receiving a reminder letter (15 of 19), did so at one of our public information events held in the local community. This goes some way to prove that, despite the lower than hoped for turnout, the drop in events were very beneficial for those who attended.

7.3 Of the 19 who booked before follow up letters were sent, there was not a big difference between the number who booked having spoken to us in person (during the door knocking stage) and those who were out and therefore received the letter in the post. 11 booked following face to face contact and 8 booked but were out when we visited.

7.4 When looking at the proportion of residents who booked a survey after receiving a follow-up letter, there was again not a big disparity between those who spoke to us during our door knocking engagement and those who were out. We spoke to 15 of those who booked after a follow-up compared to 12 who booked having been out.

7.5 As previously mentioned, there were an additional 5 properties that were identified as being at flood risk in Olives Meadow, Uckfield. These properties were contacted by direct phone call and subsequently all 5 booked a survey direct with JBA. This highlights that direct phone calls can be an effective engagement method. However, this method was only used due to the very tight timescales and we would want to avoid 'cold calling' as part of any further project phases.

7.6 We advertised all of the drop-in events through town and parish council publications and social media pages, as well as on community notice boards. 6 of those who eventually booked surveys found out about the scheme in this way. Whilst this is a low proportion of the total (11%) it is still significant, and we would use these methods of publication for any future events.

8. Acorn Profiles and engagement methods

8.1 During the time this project has been running, Wealden District Council has purchased CACI Acorn Data Profiling Software. This enables us to understand the likely characteristics of a pre-defined portion of the population against a set base level. It has been used to help evaluate the most effective engagement methods for this project.

8.2 The first profile we created looks at the 200 Gold Key properties which were visited during the door-to-door engagement stage. By profiling the postcodes of the properties, the following are likely characteristics of the residents:

- The average age of Gold Key residents was 45 years old, with the biggest proportion falling within the over 65 age group.
- The most common household type was 'all pensioners' (28%) followed by 'couple' and 'couple with children' at 21% each.
- There are more bungalows within the group than would be expected when looking at the national average of property type breakdown.
- The biggest proportion of properties within the group we engaged with was semi-detached houses.

8.3 The second profile we created gives an insight into the likely characteristics of those residents who booked a survey. In terms of demographics, the likely characteristics of those who booked are very similar to those which represent all residents who received a survey offer:

- The average age was again 45 years old, the most common age group matched that of the Gold Key profile - it was the over 65s who booked the most surveys followed by those aged 50-64
- The most common household type which booked a survey was 'all pensioners' which again matches the Gold Key profile. This similarity is not a huge surprise as the groups who received a letter and subsequently booked a survey were both small portions of the population meaning vast changes in values were unlikely.

8.4 The 'door-to-door' personal visit engagement method used in this project was undertaken on the advice of the National Flood Forum and Environment Agency. Their shared previous experiences have shown this to be effective in securing strong levels of 'buy-in' and engagement.

8.5 Our Acorn profile of Gold Key residents includes information on their preferred channel of contact (Figure 2.3) and the likelihood that they would respond to particular correspondence. By looking at this we can understand whether we used the most appropriate engagement methods, as well as learning what might be more suitable for future project phases.

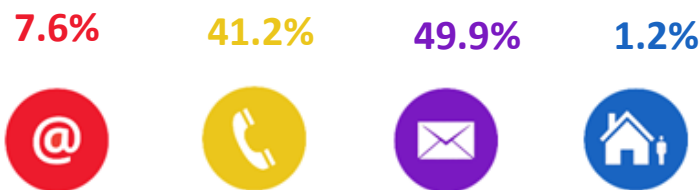


Figure 2.1 Likely preferred method of contact of those residents included within the Gold Key Profile

- 50% of residents within the Gold Key profile prefer to be contacted by mail
- 41% would prefer a telephone call. However, as already mentioned, we would not want to 'cold call' residents as a first point of contact
- Just 1% would choose a home visit which we recognise contradicts our chosen method for phase 1

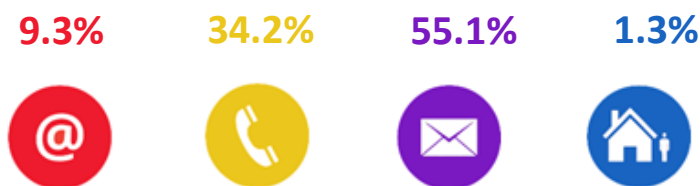


Figure 2.2 Likely preferred method of contact of all Wealden residents

- The all Wealden residents profile (fig. 2.4) also supports that mail would be the preferred method of contact should we extend the project to a second phase
- Again, home visits would not be preferable for residents across the whole of Wealden

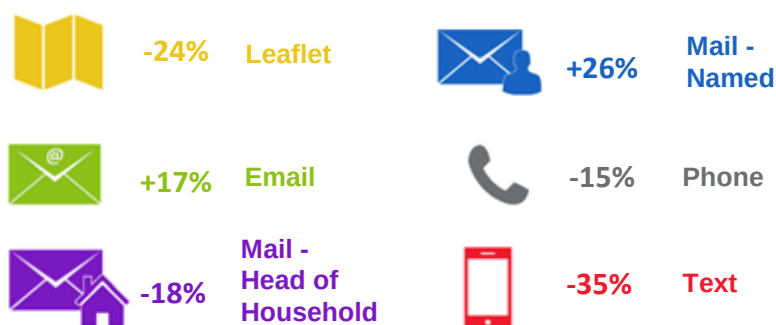


Figure 2.3 Likelihood (in relation to the national average) of Gold Key residents responding to methods of contact

- Gold key residents are 26% more likely than the national average to respond to mail addressed personally to them
- We addressed our letters to the "Resident" although still achieved a 31% take-up rate, we recognise personalised letters are more likely to lead to higher engagement and will look to apply this in a phase 2

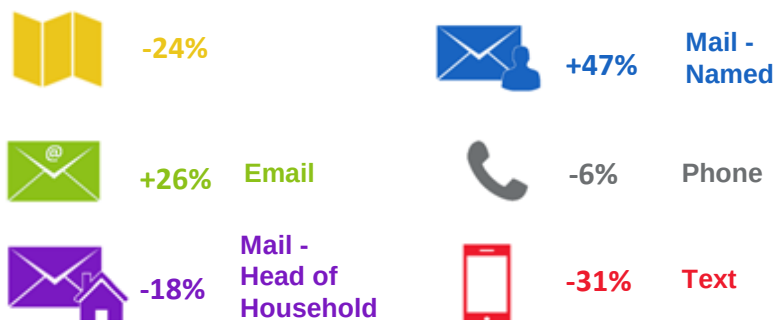


Figure 2.4 Likelihood (in relation to the national average) of Wealden residents responding to methods of contact

- The all Wealden residents profile adds further weight to the argument we should personalise letters, Wealden residents are 47% more likely than the national average to respond to this correspondence

8.6 Personal visits did not result in a significant favourable majority towards booking a survey. This combined with the profile result showing just 1% of residents preferring this method of contact and the fact that it is very time consuming for officers involved, means that any future project phases would probably not incorporate door to door engagement:

- 46% of the surveys were booked by people who we spoke to directly, either during door-to-door visits or via the telephone.
- 54% of survey bookings were by those who were out when we door-knocked, did not receive a letter but attended an information event or were eligible and subsequently booked with JBA.

9. Property Surveys

9.1 JBA Ltd were appointed as the Council's chosen surveyors via a procurement exemption report. The 57 surveys were undertaken over a two week period in March and April 2017.

9.2 On 26th April 2017, we learnt that we had been successful in our bid to the RFCC for £100,000 towards property resilience measures. We were therefore able to offer a grant of £2,000 per property to those who had had surveys undertaken and were deemed appropriate for property resilience measures.

9.3 Completed surveys were sent to residents by Wealden, via email; (where an address was available) or by post. Surveys were accompanied by a covering letter, outlining the grant that would be available to be put towards property flood resilience measures. This grant would allow residents to claim a maximum of £2,000⁵ towards installing any resilience products that were recommended by their survey.

9.4 An expression of interest form was attached to the survey covering letter to enable us to get an idea about how many people may choose to take up the £2,000 grant offer.

9.5 39 Expressions of Interest were received by the closing date. If all of these households claimed the full grant, we would have achieved an up-take rate of 78% against the available funding. Grant claim forms were sent to these households in August 2017.

9.6 The site survey undertaken at the static caravan park (see 6.2) reported that gully repair work needs to be undertaken, followed by a package of works to best protect the site. WDC and the EA are working together to investigate the best way to facilitate the work.

⁵ This could rise to £2,400 if the resident got the installer to directly invoice Wealden District Council due to VAT implications.

10. Grant Claims and Resilience Measures Installation

- 10.1 As outlined in section 9, property surveys were undertaken on 57 properties and homeowners from 39 of those submitted an expression of interest in claiming a grant contribution towards property level resilience measures.
- 10.2 All 39 homeowners who were interested in the grant funding received a grant claim form in August 2017 and a deadline for submission of 31st March 2018. This claim form would allow the homeowner to outline the resilience works they agreed to have installed and the cost associated with this, any invoices sent by contractors would then be matched with the claim form and the necessary payments made so that works could commence.
- 10.3 As of April 2018 Wealden District Council has received 27 grant claim forms from homeowners wishing to install property level resilience measures.
- 10.4 In terms of where these 27 residents lived, half came from Forest Row with 14 residents here having works carried out. Hailsham and Uckfield saw similar take-up rates with 7 and 6 residents booking work in these areas respectively.
- 10.5 The total value of resilience measures installed as well as a breakdown of the proportion paid for by either grant funding or additional homeowner contributions⁶ can be seen in table 10.1 below.

	Cost	Proportion
Works paid for by grant funding	£58,978.95	82%
Works paid for by homeowner contributions	£12,868.92	18%
Total value of property level resilience works	£71,847.87	100%

Table 3.1 Phase 1 funding proportions for the installation of resilience measures

- 10.6 As table 10.1 shows £71,847 has been paid to better protect the homes of Wealden residents from potential flooding; one of the significant successes of this project has been that 18% of the total works value was paid for by homeowner contributions. This was due to 11 (of 27) residents 'topping-up' the grant funding to pay for the resilience measures. This has been especially pleasing because it shows homeowners are engaging with the project, taking responsibility for their flood risk and treating it with the seriousness that it deserves.

⁶ This was paid if the homeowner chose to have resilience measures that cost above the maximum grant amount of £2,400.

11. Success Story

11.1 At the time of writing this report there are 9 homeowners who have had all their property level resilience works completed (with the remaining homeowners works scheduled for the coming weeks). As part of these completions we have received some case study examples from one of the contractors carrying out work that outline a 'before and after' of the protection that has been installed. Two such examples are shown below;

Case Study 1

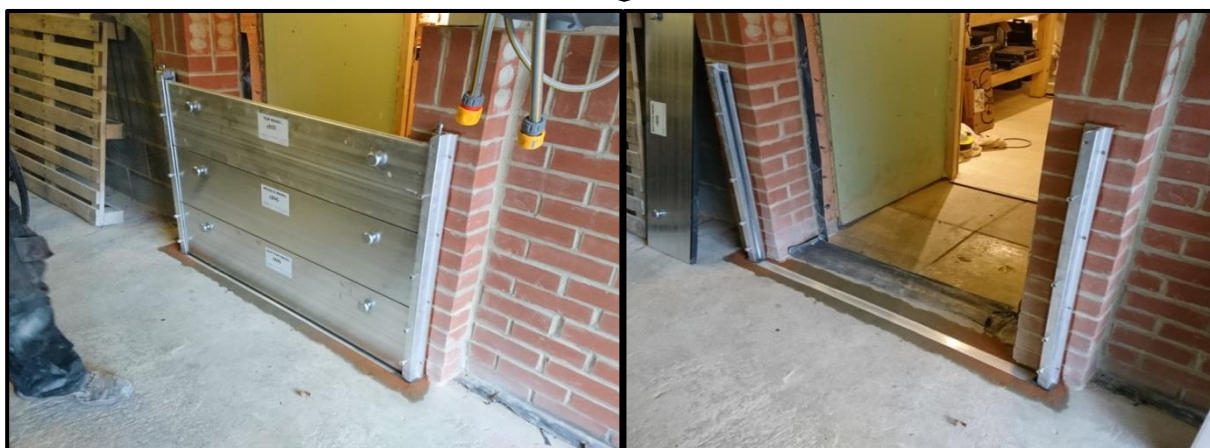
Work Carried out

- Aluminium Sectional Flood Barrier (pictured)
- Sewer non-return valve
- Application of water-resistant masonry treatment

Before



After



Case Study 2

Work Carried out

- Aluminium Sectional Flood Barrier on the side door and rear patio door (pictured)
- 2 SMART airbricks
- 2 non-return valves on WC and sewer
- Application of water-resistant masonry treatment



12. Cost Benefit Analysis

12.1 Based on the Environment Agency's analysis, 'Gold Key' properties had a 3.3% or greater chance of flooding in any given year. However, to analyse the cost benefit in the Business Case, the EA utilised a more exact risk figure. It was therefore assumed that the 57 properties which had a survey have a 10% chance of flooding in any given year, in which damages would equate to £1.96 million.

12.2 The Cost Benefit Analysis assumes that the PFR measures have a lifespan of 25 years and protect against an event that has a 5% chance of occurring annually. With this assumption and based on historic PFR schemes, the 27 properties who have installed resilience measures are moved from very significant risk to significant risk with benefits amounting to £395,342 present value (PV).

12.3 This Cost Benefit is supported by the 2008 Defra / Environment Agency Report 'Developing the Evidence Base for Flood Resilience' report (FD2607) which concluded that flood resistance measures are economically worthwhile for properties with an annual chance of flooding of 2% or above (50 year return period). The largest percentage savings are for residential properties with an annual risk of flooding of 4% or greater (25 year return period). For households that flood more than once in every ten years, such as those that were identified as eligible under our PFR scheme, the benefits outweigh the up-front investment by a factor of between five and ten.

13. Social Benefit Analysis

13.1 Public Health England (PHE)⁷ published the first part of their two-year study into the effects of flooding on health in January 2017. The first year results show that property flooding can have a significant impact on a person's mental health and wellbeing.

13.2 The findings show that people who experienced flooding in their home were more likely to suffer from a mental health problem such as depression, anxiety or post-traumatic stress disorder (PTSD) a year on, than people who were not affected by flooding:

- The percentage of people with probable depression, anxiety or PTSD was highest amongst people whose homes were flooded, and the risk of having these mental health issues was approximately six times higher in this group than in those who were unaffected by flooding

⁷ <https://bmcpublikealth.biomedcentral.com/articles/10.1186/s12889-016-4000-2>

- Amongst those whose homes were flooded, the risk of poor mental health outcomes was greater the deeper the floodwater. For instance, those in the flooded group who reported floodwater depth of >100cm, the risk of probable depression was approximately 15 times greater than the unaffected group
- Amongst those who were flooded, evacuation (i.e. leaving home in advance of, or at the onset of flooding) further increased the risk of probable anxiety and PTSD, above that observed in those flooded but not evacuated. Amongst those whose homes were not flooded, evacuation did not increase the risk.
- Amongst those who were flooded, losing access to a utility such as water or electricity further increased the risk of developing anxiety and PTSD. Losing access to health and social care services also increased the risk of having PTSD.

13.3 The findings also revealed a previously overlooked group impacted by flooding “the disrupted group”. This group are people whose homes were not flooded but their lives disrupted by flooding in the local area they live in. This group may have had a disruption to their lives caused by flooding such as not being able to work/send children to school or not being able to access healthcare such as GP services or community care. The findings showed that people in this “disrupted group” were more likely to suffer from a mental health problem such as depression, anxiety or post-traumatic stress disorder (PTSD) a year on, than people who were not affected. The risk is not as high as in the flooded group.

13.4 One of the PHE recommendations was specifically about property protection: “Limiting ingress of water when a home is flooded may help reduce mental health impacts on the occupants, as well as the more obvious damage limitation to the home”.

13.5 Increased depth of flood water, loss of a utility, more than 24 hours of flood water in the home and evacuation were associated with a higher risk of poor mental health outcomes, and may serve as useful markers to help identify and support people at risk post flooding.

14. Summary

14.1 The project has met the objectives set out in the original PID and has significantly exceeded the target of a 25% survey uptake (actual uptake 31%). Considering the experiences of other Local Authorities who have run similar schemes (who reported take up rates of between 5-15%) we can be confident that our engagement methods were successful. Further to paragraph 6.2 Wealden has funded a survey of the Static Caravan site and is working with the Environment Agency to decide upon the best next steps based on the findings / recommendations of the site survey.

14.2 We know, from both our experience and the use of the Acorn analysis tool, that we could make resident engagement even more effective by personalising letters and not making home visits. This would also decrease the amount of officer time that needs to be spent on door-to-door engagement (estimated at a total of around 72 hours between the EA & WDC.) This would have a significant impact on the level of resources required should there be a further phase to this project.

14.3 We are extremely pleased with the engagement from homeowners relating to the installation of resilience measures; 18% of the total value of resilience works came from homeowner contributions rather than grant funding. We can draw from this that multiple homeowners were looking to protect their property to a significant level and not just install measures because they were 'free' under the grant contribution hence they paid for extra work to be carried out on top of that covered by the grant.

14.4 This project has encouraged residents to take responsibility for the protection of their own properties, which in turn meets our Corporate objective of ensuring "engaged, resilient and active communities".

14.5 As mentioned earlier in this report, we have delivered significant cost and social benefit to the residents affected via this project. PHE estimate that people whose homes are affected by flooding are 6 times more likely to have mental health issues than those who are unaffected by flooding. PHE state that limiting water ingress when a home is flooded may help to reduce the mental health impacts on the occupant(s).

15. Next Steps

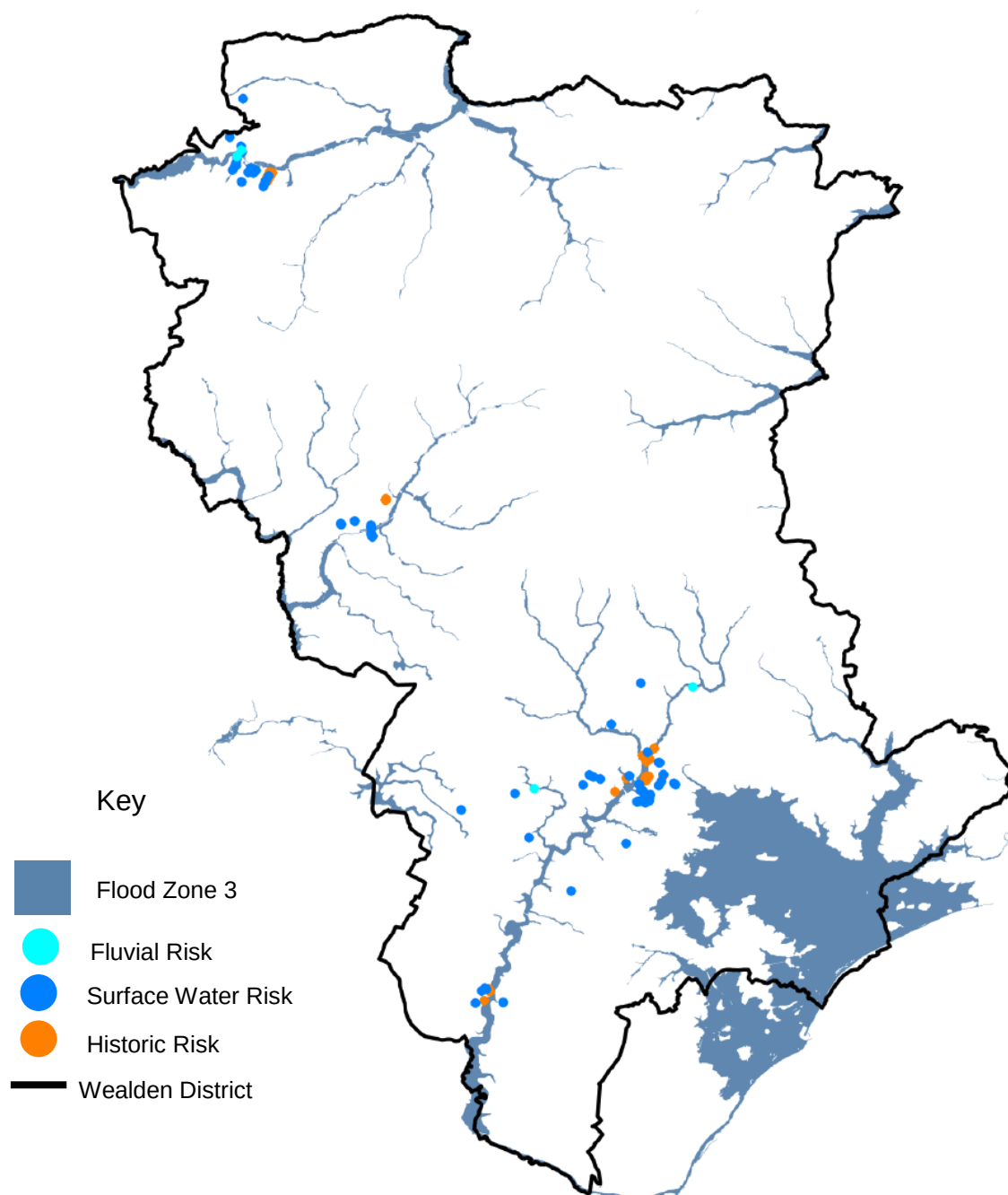
- Run a phase 2 of the project (with the Environment Agency as partners) that will make the same offer of a survey and grant funded resilience measures to all of the remaining highest risk properties within the Wealden District.

16. Other Related Documents

- Outline Business Case Wealden PFR (Environment Agency, May 2017)
- Outline Business Case Wealden PFR Appendices A-H
- Stakeholder Engagement Plan (Environment Agency, May 2017)
- Wealden PFR Project Initiation Document (Wealden District Council, September 2016)
- Equality Impact Assessment (Wealden District Council, March 2017)

17. Appendices

Appendix A - Strategic Flood Risk Assessment (SFRA) Flood Zone 3 displayed in relation to the properties that were identified as at risk by the Environment Agency and partners.



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