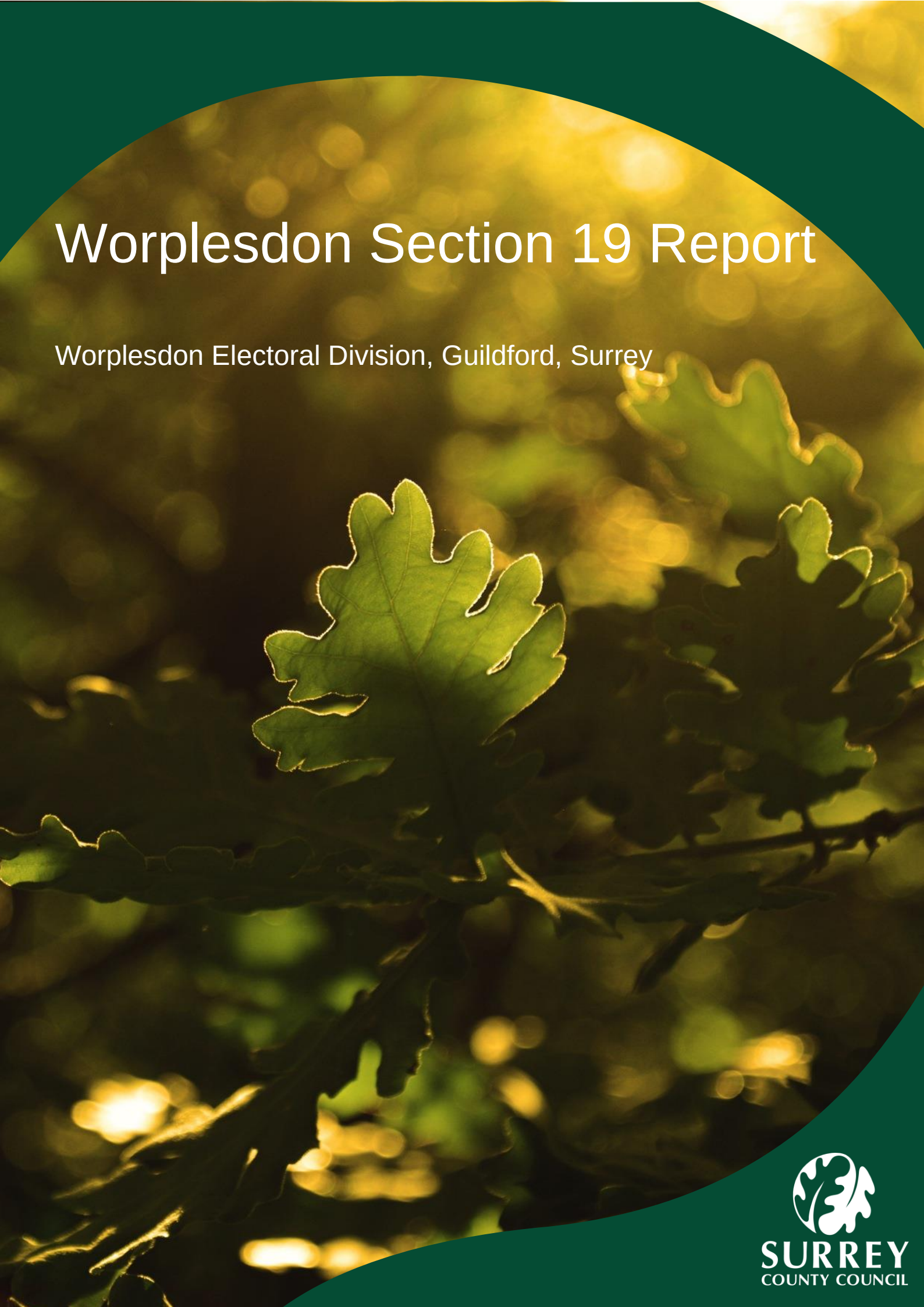
Worplesdon Section 19 Report

Worplesdon Electoral Division, Guildford, Surrey



SURREY
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Contents

Introduction

This report details the widespread flooding that occurred in Worplesdon, following heavy and prolonged rainfall during Storm Henk from January 1st – January 4th 2024, with its impact extending to January 12th 2024. Overall, Surrey County Council (SCC) had 600 reports of property flooding across Surrey, in Worplesdon 129 properties flooded, concentrated in 6 locations, this has been collated into 6 flood investigation reports, as seen in Appendix C, with a summary of the incident detailed in this report.

This report will summarise the cause of property flooding, actions of risk management authorities involved, their responsibilities and recommendations moving forward, in addition to ongoing works in the area.

Surrey County Council (SCC) defines internal property flooding as flooding within the liveable space of the property, external property flooding is defined by SCC as flooding outside of the liveable space, this includes driveways, gardens, and garages (attached or detached).

This document has been prepared specifically for the purpose of meeting the requirements of Section 19 of the Flood and Water Management Act 2010.

Under the Flood and Water Management Act 2010 the Lead Local Flood Authority (LLFA) must (to the extent that it considers it necessary or appropriate) undertake an investigation on becoming aware of a flood incident within its area.

This document is not an action plan or an agreement that the recommendations provided in this report will be completed by the relevant RMAs, unless there is a duty to do so. This report focuses solely on the flooding within Worplesdon, Surrey. However, the findings of this report will be shared with Risk Management authorities including The Environment Agency, Guildford Borough Council and Thames Water in order to work collaboratively and as a part of the duties under Section 13 of the Flood and Water Management Act 2010.

Background

Worplesdon is situated in the Northwest of Guildford Borough, Surrey, UK. It is within the Wey Catchment, with tributaries of the River Wey running through Worplesdon. The Hoe Stream runs Northeast and the Clasford Brook and Wood Street Brook run North through the centre of Worplesdon, See Fig. 1 in Appendix A.

The surrounding catchments and the Clasford Brook/ Wood Street Brook drains into the Hoe Stream, this then continues to flow to the Northeast.

There are five flow routes, two from the North (shown in blue and yellow in Fig 2, Appendix A) and three large flow routes from the South (green, orange, purple in Fig 2, Appendix A) that converge into one North of Aldershot Road, where it directly drains into the Hoe Stream (Pink), see Fig. 2 in Appendix A.

Fluvial flood risk (zone 2 and 3) and surface water flood risk (see Fig. 3 and 4 in Appendix A) is concentrated on the Northern and Southern boundary of Worplesdon where the Hoe Stream runs, and along the centre where the Clasford Brook/Wood Street Brook join the Hoe Stream.

There is limited potential for groundwater flooding throughout Worplesdon, with potential to occur above and below surface to the Northwest – North of Merrist Wood, Southeast of Holly Lane, along the watercourses East of Frog Grove Lane and on the South section of Wood Street Village

Along the centre of Worplesdon, the bedrock is free draining, with variable permeability around Rickford Common and along the section of the Hoe Stream running on the Northern boundary of Worplesdon. There are superficial deposits along the main rivers with variable permeability. The water table is less than 3 meters below ground surface for the majority of Worplesdon, excluding the centre (South of Rickford Common and encompassing Merris Wood , see raised centre shown in the Lidar Map, Fig. 5 Appendix A).

The centre of Worplesdon village is Camberley sand formation, surrounded by Windlesham formation (sand, silt and clay) and the Bagshot formation (sand). Along the main rivers, the superficial deposits are made up of clay, silt, sand and gravel. In general, clays have poor permeability, whereas areas with sand and gravel provide better drainage.

Summary of Incident

A minimum of 109 properties were impacted by the flood event on January 4th – 12th 2024 of which 17 flooded internally and all flooded externally.

It was identified during investigation that an additional 20 properties are likely to have been impacted, bringing the overall number to 129 properties, however it has not been confirmed; it is also likely this number does not accurately reflect the impact of the flood event as the recording and investigation of property flooding is triggered by reports directly to Surrey County Council.

Storm Henk affected most of the UK, with the met office reporting approximately 50-75mm of rain fell in parts of Surrey, this followed frequent heavy rainfall in November and December 2023, of which there were 5 named storms, and immediately after Storm Gerrit on December 26th – 28th 2023. As a result, the ground was saturated prior to Storm Henk, in a location identified to have a high-water table and risk of ground water flooding. River levels in the River Wey peaked on January 6th 2024 following increases in levels from November 2023. River level gauge in the Hoe Stream Northeast of Worplesdon peaked on January 5th, exceeding the typical high (see Fig. 7 and 8 in Appendix B).

Main Causes of flooding:

Flooding across Worplesdon during Storm Henk was primarily caused by heavy rainfall that exceeded the capacity of local drainage systems and watercourses. Specific areas experienced significant flooding beyond anticipated levels due to a combination of natural and human factors. The flooding was concentrated in six distinct areas, detailed in Figure 6, Appendix A.

Three locations (1, 2, and 3) experienced flooding directly related to obstructions within ordinary watercourses. Two locations (4 and 5) were impacted by elevated

river levels in the Hoe Stream and its tributaries. It was noted that improved management of water structures in these areas during future storm events could mitigate such risks. The sixth location (6), which had the highest number of affected properties (13 internal and 73 external), resulted from a combination of complex factors, further revelased through additional flooding that has occurred since the initial flood on January 4th 2024:

- Unapproved connections of highway drainage into the site by developers, which were not accounted for in design or calculations.
- Runoff from the Hogs Back and a nearby new development.
- Overtopping of the main river.
- Blocked highway drainage caused by residents.
- Residents pumping water onto roads, exacerbating flooding.
- Land Raising

At location 6, the private drainage system was overwhelmed, and additional issues compounded the flooding:

1. **Pump Malfunctions:** A pump installed to manage water storage in attenuation tanks reportedly failed. The developers indicated that one of two pumps was defective, while the other remained operational. However, anecdotal evidence from residents suggests that neither pump functioned during the January 4–5 flood event. Surrey County Council (SCC) has yet to verify these claims. Furthermore, a historic pipe designed to drain the highway had been rerouted into the development's drainage system, which was not equipped to handle the extra volume.
2. **Planning and Sustainable Drainage (SuDs):** SCC did not approve the SuDs proposed during the planning process for the new development. There is evidence that flood risks were inadequately considered in the design. Further investigation is needed to determine whether SCC's recommendations were incorporated into the final approval.
3. **Watercourse Overcapacity:** Watercourses in the northern section of location 6 failed to handle the rainfall. Vegetation overgrowth and silt buildup may have contributed to flooding, however subsequent clearing and reconnection efforts were made, but flooding issues persist.
4. **Unconsented Modifications:** Unapproved work on a southern watercourse at location 6, coupled with surface water runoff from the development, also contributed to the flooding.

The flooding in Worplesdon during Storm Henk was caused by a combination of watercourse obstructions, elevated river levels, insufficient drainage capacity, and unapproved modifications to drainage systems. Additional factors such as runoff from elevated land and new developments, as well as river overtopping, further contributed to the impact.

RMA responsibilities

The Environment Agency:

- Have a strategic overview of all forms of flooding and the powers to carry out work to manage flood risk from main rivers.
- Strategic lead in responding to flood emergencies through the LRF.
- This includes powers to require landowners to carry out maintenance work on main rivers.

Surrey County Council:

- Have the duty to investigate flood events under Section 19 of the Flood and Water Management Act 2010. Also, as the LLFA, have the responsibility to manage flood risk of surface water flooding.
- Have the duty to maintain the highway and ensure it is free from hazards under Section 41 of the Highways Act 1980.
- Under Section 25 of the Land and Drainage Act 1991 have powers of enforcement in relation to ordinary watercourses.
- Have the responsibility under the Land Drainage Act 1991 for the maintenance of watercourses passing through their land.

Guildford Borough Council:

- Powers to manage flood risk from ordinary watercourses.
- Have the duty to ensure flood risk is managed effectively in relation to taking decisions on development/ planning in their area.

Thames Water:

- Have the responsibility to maintain their drainage assets and ensure they are in working condition under the Water Industry Act 1991.

Landowners:

- Are responsible for protecting their land and property from flood damage.
- Maintain private drainage including rivers and watercourses passing through or adjacent to their land.

Actions taken by the Risk Management Authorities:

The below is not a definitive list of all actions carried out by RMA's.

Upon becoming aware of the impact of Storm Henk, risk management authorities and responders convened daily conference calls through the Surrey Local Resilience Forum (SLRF) throughout January 2024. Beginning in February and continuing through April 2024, these meetings transitioned to weekly calls, supplemented by data sharing. During this period, the following actions were undertaken:

- Coordinate information sharing of known issues.
- Commit staff to carry out checks of known flood risk locations.
- Contact members of the community to obtain details of flooded locations.
- Agree to SCC carrying out a Section 19 investigation.
- Administer the grants on offer through the Flood Recovery Framework and collect data and provide to the Flood and Climate Resilience team to administer the Property Flood Resilience (PFR) Grant on offer from DEFRA. Further information on the grants can be viewed on the Surrey County Council Website: Flooding - Surrey County Council (Surreycc.gov.uk)

SCC Highways Team:

- Enforcement carried out at location marked 1 on Fig.6 in Appendix A, watercourse has been cleared and further work planned to jet the culver under the highway.
- Drainage investigation complete at location 2, Fig. 6 in Appendix A, and worked with landowners to clear watercourses.
- Drainage investigation carried out at location 6, Fig. 6 Appendix A. One asset found nonfunctional due to developers removing it, highways Team plan to work with SCC Land and Property Team to clear the ditches.
- Reinstate the ordinary watercourse in Location 6 (Fig. 6, Appendix A) to allow the flow of water, working with SCC Land and Property Team.

The following are ongoing works by the Authorities

Surrey County Council:

SCC Highways Team:

- Plans to reinstate the grips at location 4, Fig. 6 Appendix A and to jet the main pipe under the highway.

SCC Flood and Climate Resilience Team:

- To carry out enforcement on unconsented work.
- Administer the PFR (Property Flood Resilience) grant to those properties affected by Storm Henk and are eligible according to the criteria set by DEFRA
- To facilitate a conversation with Guildford Borough Council regarding flood risk consideration for new developments.

Surrey County Council:

SCC Flood and Climate Resilience Team:

- To support local communities in the formation of Flood Action Groups to enable communities to become more resilient to the impact of flooding.
- To investigate the planning approval in relation to the new development referred to in Location 6, (Fig 6, Appendix A).

SCC Land and Property Team:

- To carry out clearance of watercourses on Surrey County Council owned land.
- To uphold a maintenance schedule for watercourses on Surrey County Council owned land.

Countryside Estate:

- To clear watercourses at location 2, Fig. 6 in Appendix A

Guildford Borough Council:

- To review how flood risk is considered for planning applications, in line with the Guildford Borough Local Plan: strategy and sites and duties as a Risk Management Authority.

- Review the local report of flooding and identify if they want to use their powers, including bidding for grant funding, to carry out works to manage the risk of flooding from Ordinary Watercourses. (Section 14a Land Drainage Act 1991). Where central government funding is not available to carry out risk management activities work with partners to identify options and funding sources to mitigate risk. This applies to properties built after Flood Risk Regulations 2009.
- Identify how flood risk from ordinary watercourses case be assessed in the planning process to ensure development is resilient to existing watercourse flood risk and the increase in impacts posed by climate change. This may include specific check in the validation process to identify watercourses in the vicinity of a site (20 metres) and updating GIS layers with this risk and feature data for development management/planners.
- Carry out vulnerability assessments to ensure that social housing residents' area not located in housing which is likely to be impacted in a way to exacerbate specific vulnerabilities. For example, if a resident requires home based visits or 24 hour access known access restrictions are built into the housing plan. This will minimise impacts on health services, and social care services and emergency planners and housing departments.
- Review the reasons why recommendations form statutory consultees were not included in the planning process and assess the impact of the decision not to apply those recommendations.
- Work with residents and partners to support or form community groups to improve resilience to flood risk in their areas. Specifically working with Surrey County Council on the proposal for developing flood action groups with the National Flood Forum and the SCC bid for funding to the RFCC.

Landowners:

- To proactively engage in regular upkeep of watercourses and assets.

Glossary

Fluvial Flooding: Flooding occurs when water levels in rivers rise and overtop their banks.

Ground Water Flooding: When the level of water within the rock or soil underground known as the water table rises.

LRF: Local Resilience Forum

PFR: Property Flood Resilience

RMA: Risk Management Authority

SCC: Surrey County Council

Surface Water Flooding: Type of flooding that happens when heavy rain falls on hard surfaces, also known as flash flooding.

Appendix A: Maps:

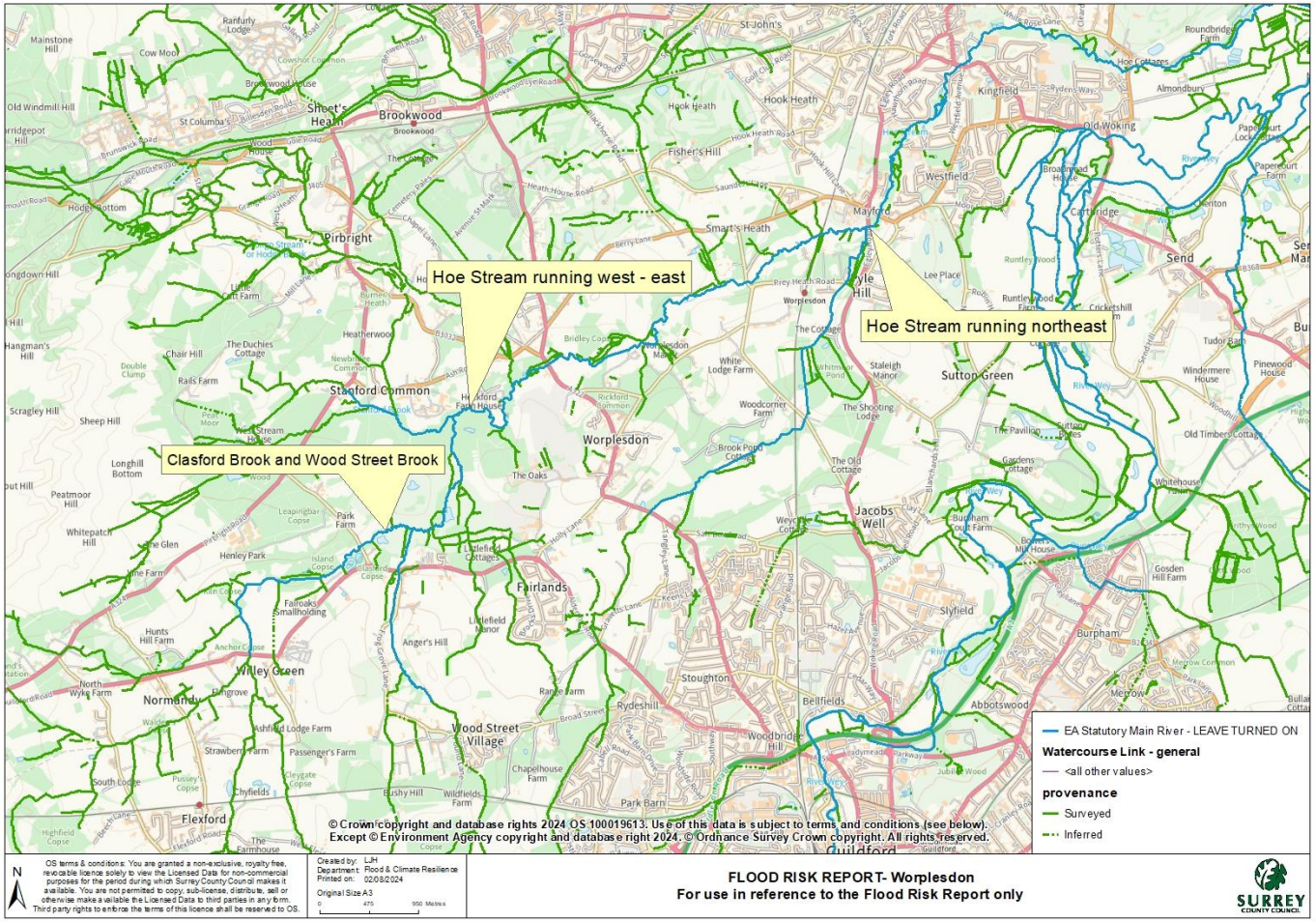

Figure 1: Watercourses map.

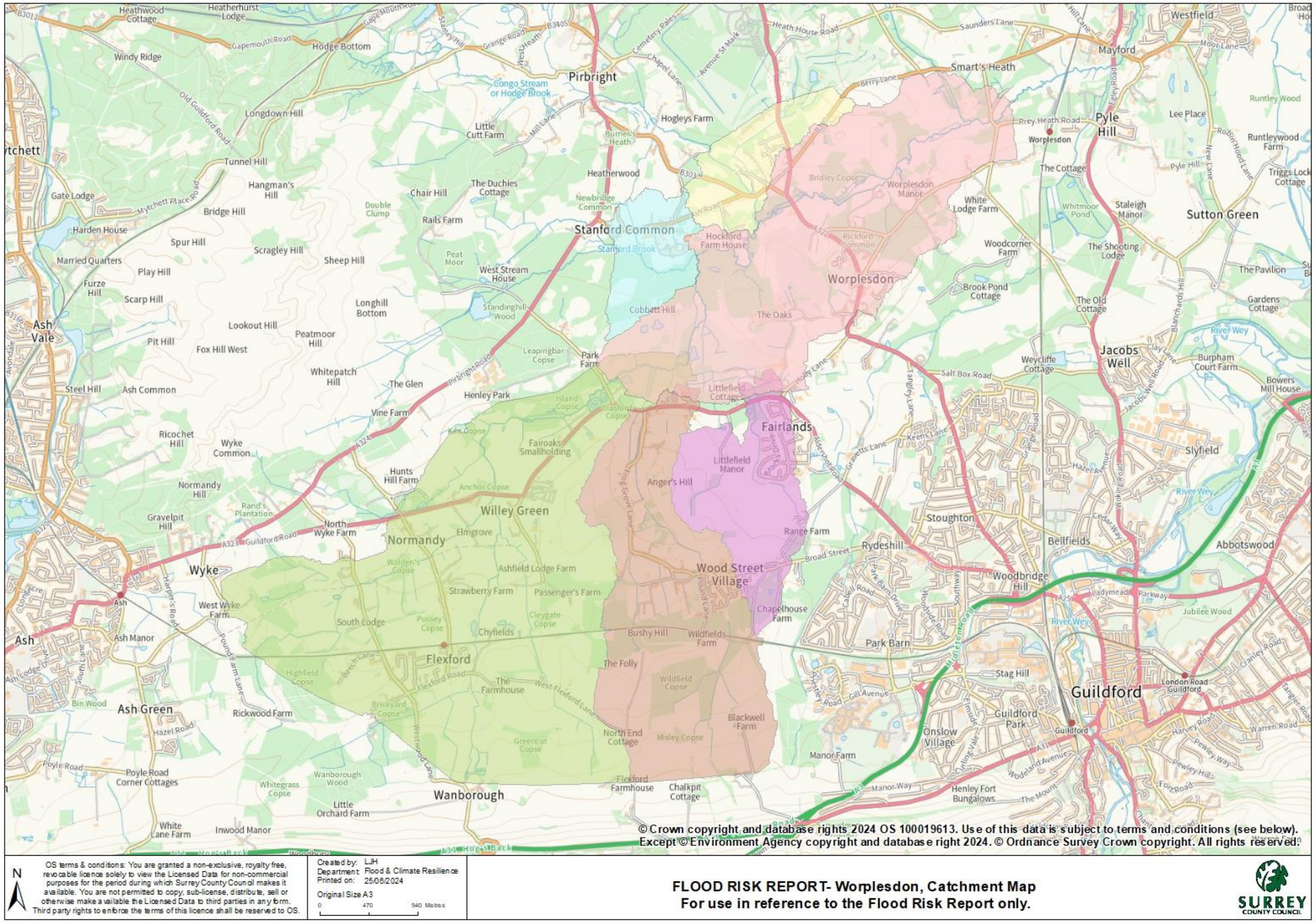

Figure 2: Catchment map.

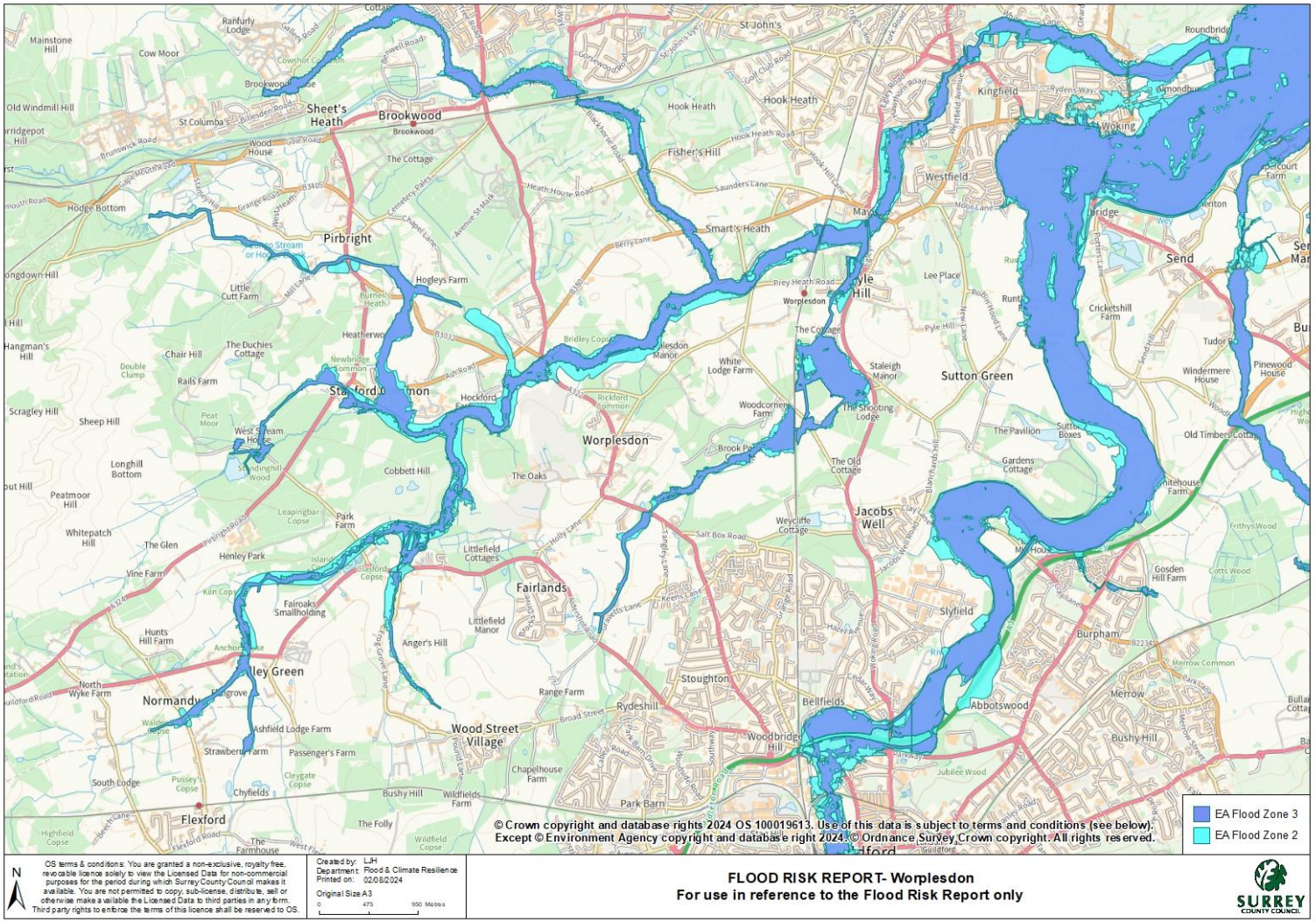

Figure 3: Fluvial flood risk map.

Figure 4: Surface water flood risk map.

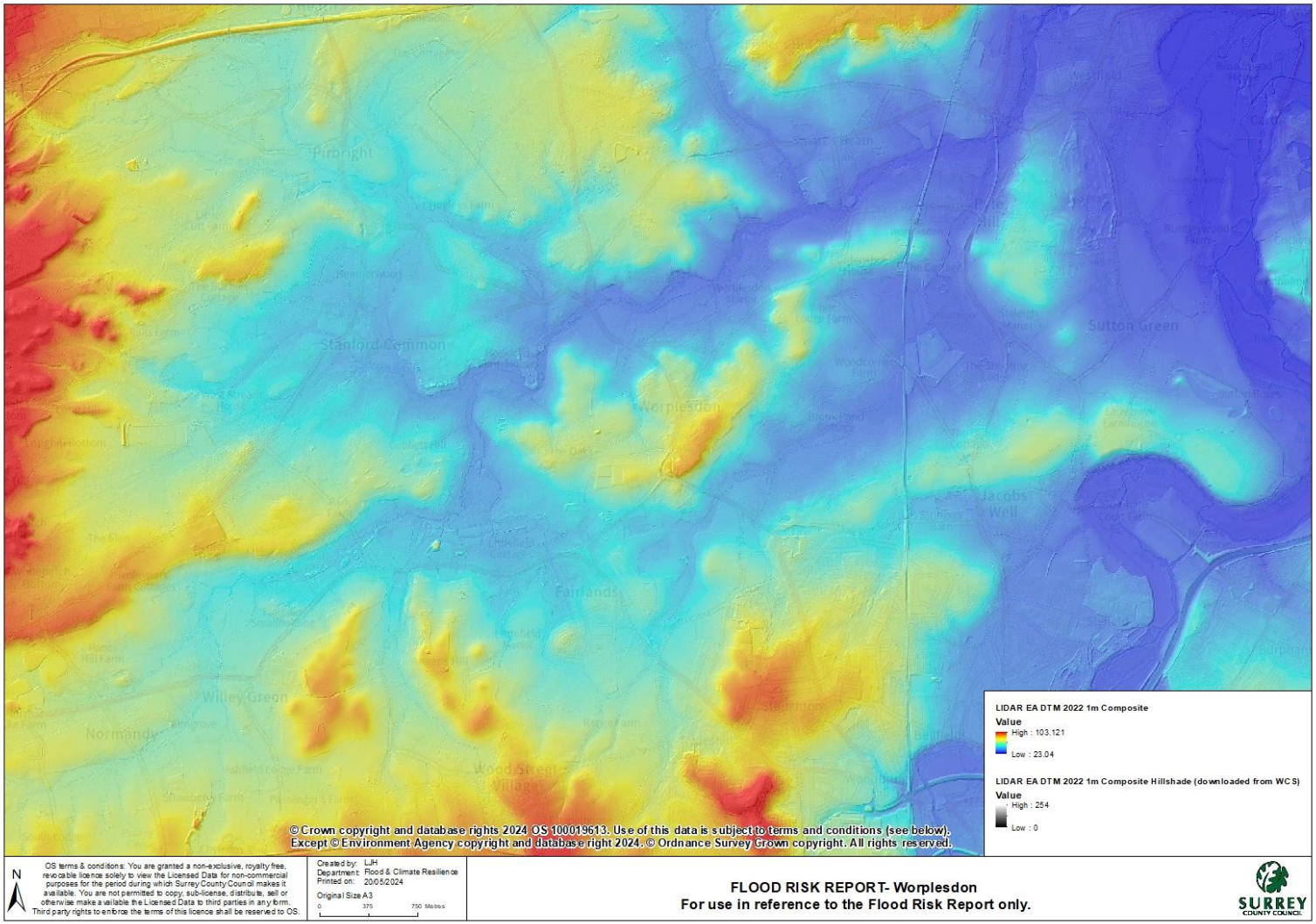

Figure 5: Lidar (Light Detection and Ranging) Map, 2022

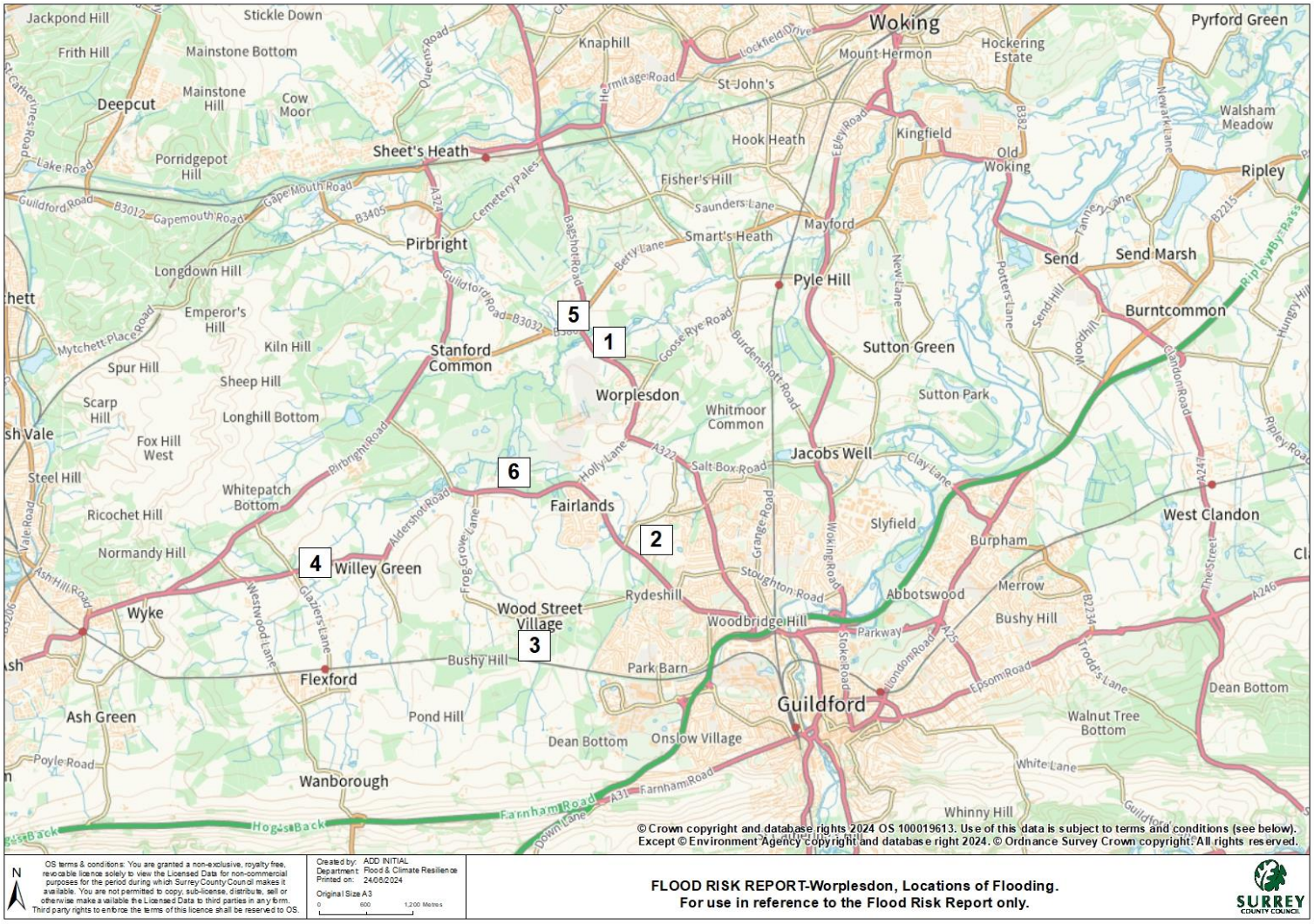

Figure 6: Locations of flooding in Worplesdon.

Appendix B: River Level Data

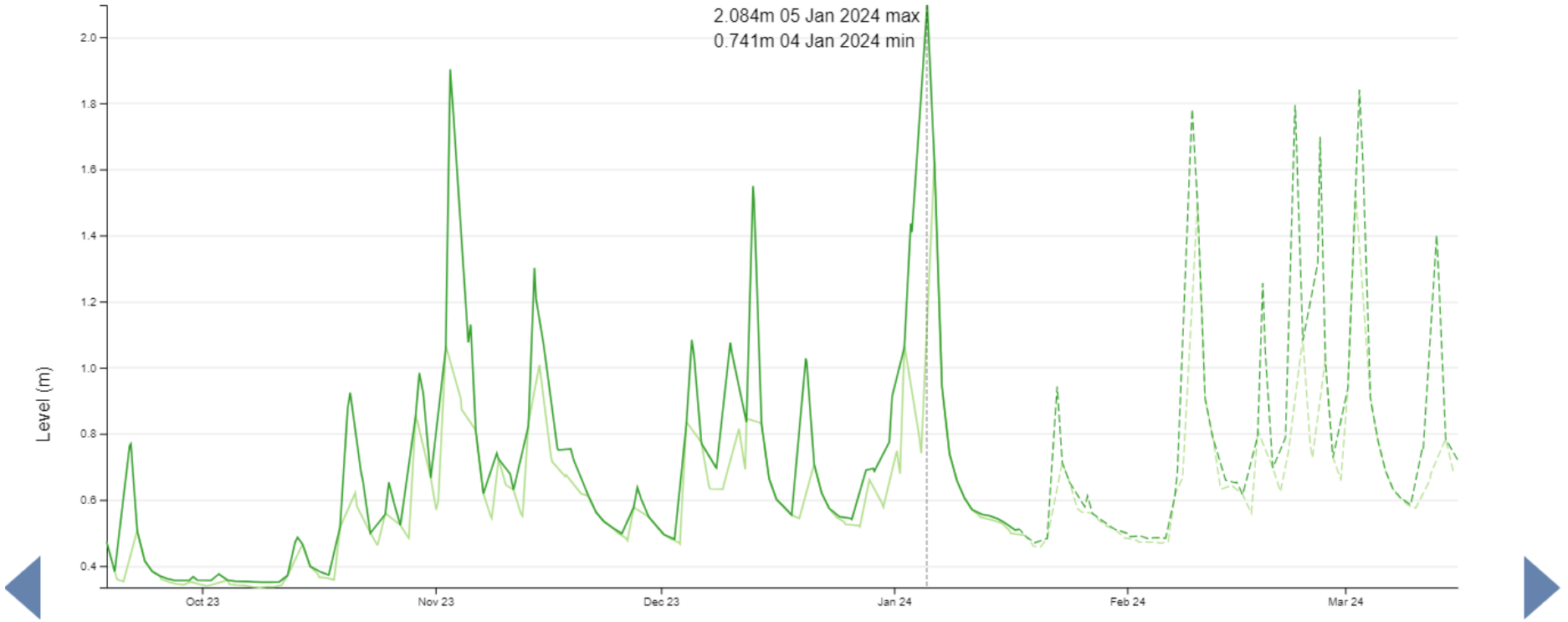

Figure 7: Hoe Stream river level data obtained from Hydrology Data Explorer. River Gauge situated in Woking South.

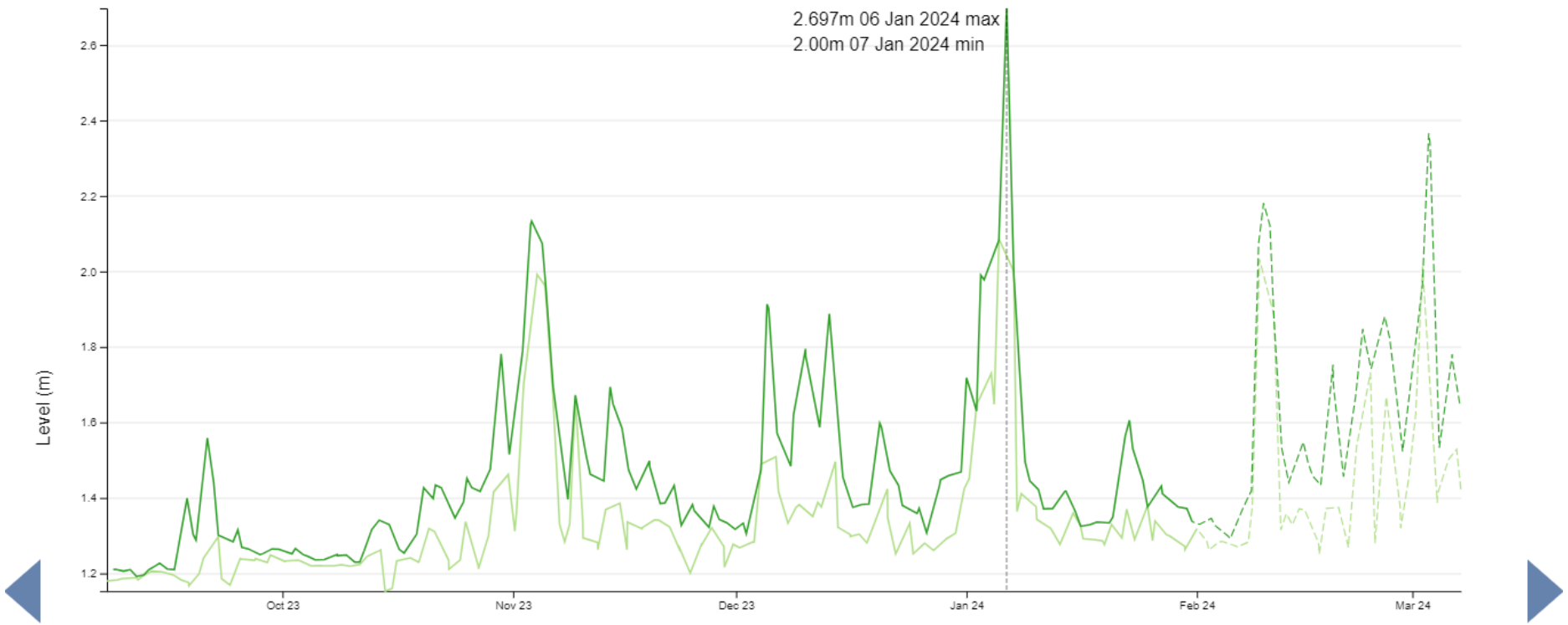

Figure 8: River Wey river level data obtained from Hydrology Data Explorer. River Gauge situated in Guildford.

List of Annexes: Section 19 Investigation reports.

The individual investigation reports produced have been provided with a reference number as shown below, the reference number has been provided and sent to the residents and relevant RMA's.

Annex A: Location 1 (Ref 105631)

Annex B: Location 2 (Ref 105265)

Annex C: Location 3 (Ref 99280)

Annex D: Location 4 (Ref 97081)

Annex E: Location 5 (Ref 97458)

Annex F: Location 6 (Ref 97761)