

# SURFACE WATER MANAGEMENT PLAN

## Options and Action Plan



HILLINGDON  
LONDON

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## APPENDICIES

**Appendix A:** Site Specific Action Plan for key risk sites across the London Borough ...  
of Hillingdon.

**Appendix B:** Actions to be taken by Residents to combat flood risk.

**Appendix C:** Actions to be taken by the Council to combat flood risk.

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## 1. INTRODUCTION

### What is a Surface Water Management Plan?

- 1.1. Surface Water Management Plan (SWMP) is produced by the Council as the Lead Local Flood Authority (LLFA). Its purpose is to set out the Council's surface water management strategy, identifying options and actions for managing flood risk. In this context surface water flooding comprises flooding from sewers, drains and groundwater, together with runoff from land, small water courses and ditches occurring as a result of heavy rainfall.
- 1.2. The production of this plan is a major step in the process of creating a Flood Risk Management Strategy, as required by the Flood and Water Management Act (FWMA) 2010 and the Flood Risk Regulations (FRR) 2009. It will also provide the evidence for investigating flood incidents, creating the asset register and informing the SuDS Approval Body, which are the other elements which will make up the Flood Risk Management Strategy.

### The SWMP Process

- 1.3. The DEFRA SWMP Technical Guidance (2010) provides the framework for preparing SWMPs.
- 1.4. The Council has divided the SWMP into two separate documents, outlined below. Phases 3 and 4 form SWMP Part 2, Options and Action Plan, the subject of this report.
- 1.5. This report should be read in conjunction with the Surface Water Management Plan Part 1: Evidence Base. All acknowledgements, the executive summary and evidence, as well as a glossary of terms and references, can be found in that document.

Phase 1 Preparation	SWMP Part 1: Evidence Base (Available on the Council's Website)
Phase 2 Risk Assessment	
Phase 3 Options	SWMP Part 2: Options and Action Plan
Phase 4 Implementation and Review	

### Objectives of the SWMP: Options and Action Plan

- 1.6. The Phase 3 Options objectives are to:

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- Identify options and measures to alleviate the surface water flood risk within Hillingdon.
  - Take into account issues that are wider than the modelling work done for the evidence base, but considered to be important by partners and stakeholders.
  - Make recommendations for surface water management which improve emergency and land use planning
  - Enable the channelling of more effective flood risk and drainage infrastructure investments
  - Identify, where possible, options to alleviate flood risk within Critical Drainage Areas and other specific sites.
  - Consider and evaluate a number of generic Borough wide actions.

1.7. The Phase 4 Implementation and Review objectives are to:

- Establish a long-term Action Plan to manage local sources of flood risk, which will influence future capital investment, maintenance, public engagement and understanding, land-use planning, emergency planning and future developments.
- Implement this Action Plan with the Council's Partners and Stakeholders and carry out the monitoring and review process for this Plan (see Section 4).

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## 2. BACKGROUND

### Summary of SWMP Part 1 - Evidence Base.

- 2.1. The Hillingdon SWMP Part 1 Evidence Base was published on 24th January 2013, and is available on the Council's website. That document forms Phase 2 of the SWMP Process: Risk Assessment.
- 2.2. **Surface Water:** To create the Hillingdon SWMP Evidence Base, modelling was undertaken to pinpoint key flow paths, velocities and areas where water is likely to pond. Seventeen Critical Drainage Areas have been identified within the Borough, and these have been prioritised by the Council. Potentially 29,300 residential properties and 1,300 non-residential properties could be at risk across the Borough, with significant effects on sections of the road and rail infrastructure.
- 2.3. **Groundwater:** Increased Potential Elevated Groundwater' (iPEG) maps have been produced showing areas where groundwater could rise and interact with the ground surface or rise within 2m of it. This mapping shows the most likely location for this is in the river valleys. Although the majority of historic records of flooding are located in areas highlighted by the iPEG mapping exercise, there are also records of groundwater incidents outside these areas. Groundwater is often heavily influenced by local geological features and man-made factors which are difficult to capture in modelling.
- 2.4. The flood risk from groundwater is considered to be low, as in general terms it rarely poses a risk to life. Although groundwater can have impacts on basements and contribute to the overflowing of sewers and drains and the inundation of low-lying areas, it is often difficult to separate from other sources of flooding.
- 2.5. **Drains and Sewer Flooding:** Thames Water keeps records of drainage and sewerage flooding, although using these do not take account of later improvements to the network, such as the replacement of a sewer. The majority of these records relate to sites clustered in the north-west of the Borough in areas of low elevation, where flooding can be attributed to the 'locking' of surface water sewer outfalls to the river network. A partnership of the relevant stakeholders, such as the utilities and the Environment Agency, is needed for the sharing of data and the provision of solutions.
- 2.6. **Ditches and Ordinary Watercourses:** The SWMP Evidence Base indicates that Hillingdon is at low risk of flooding from ordinary watercourses with little or no standing water in the floodplain. There were no records of flooding from this source at the time of publication of the Evidence Base.
- 2.7. **Main Rivers:** The Environment Agency takes the lead on flood risk from main rivers. More information on their roles and responsibilities can be found on their website or in the Strategic Flood Risk Assessment for Hillingdon.

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## **Public Consultation**

2.8. The SWMP Evidence Base is available on the Council's website. It has also been sent to key partners of the Council. The website seeks feedback from residents and there is an online form to assist residents in recording flooding incidents. This evidence is useful both for confirming the areas already highlighted in the SWMP as being at risk and for identifying additional sites. All evidence collected is recorded by the Council, and will be used in reviews of the SWMP.

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### 3. OPTIONS AND ACTION PLAN

#### Options

- 3.1. Two options were considered for all measures but discounted;
- Do Nothing: discard policies on flood risk and do not investigate flooding.
  - Do the Minimum: continue with existing planning policies and current levels of communication on flooding
- 3.2. The *Do Nothing* approach was excluded as a preferred option as it would be likely to lead to an increase in flooding in the Borough, and would not fulfil the requirements of the Flood and Water Management Act.
- 3.3. The *Do the Minimum* approach was excluded as a preferred option due to the predicted effects of climate change which is likely to increase the intensity and volume of rainfall. Maintaining the current standards of requirements on surface water in the Borough would only be beneficial whilst rainfall intensities and volumes remain at their current level. If intensities and volumes increase as a result of climate change, then the protection afforded by assets (e.g. sustainable drainage) would diminish over time.
- 3.4. Information on flooding is always improving and it is important that this is taken into account and informs future actions. It is therefore clear that to comply with the requirements of the Flood and Water Management Act, additional actions are required by the Council and residents to ensure flood risk is managed in the future.

#### Actions: Site Specific Measures

- 3.5. Specific measures have been considered in the areas at greatest risk of surface water flooding and details given of the work needed to help alleviate that risk. These are set out in Appendix A.
- 3.6. High risk and priority is assigned to areas which:
- Experience regular or significant surface water / groundwater / sewer flooding,
  - Are predicted to face significant surface water flooding taking into account depths and velocities,
  - Have large numbers of people potentially affected, with corresponding safety issues,
  - Contain critical infrastructure such as sections of road or rail networks,
  - Have properties containing basements.

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- 3.7. In addition to the above criteria, the Council will consider evidence of flooding which supports the modelled findings and any evidence of other areas of significant<sup>1</sup> flooding. This is to ensure the plan is realistic and robust.
- 3.8. The modelling work in the Evidence Base shows areas potentially at risk based on assumptions regarding drainage arrangements. If however it is clear that there is little evidence of actual flooding, the site has been given a lower priority rating.
- 3.9. Although a flood event may not be considered significant per se, the Council is asking residents to report all events, so that new trends and issues can be identified.
- 3.10. The Site Specific actions within the Action Plan will be undertaken in order of priority and will be dependant on the availability of resources.
- 3.11. For most sites, the initial actions are to clarify the current drainage arrangements and any future programme of work planned by the utilities and other partners. Findings then need to be assessed to see if current drainage arrangements are sufficient given the evidence. Finally a decision needs to be made as to whether further work is required.
- 3.12. The Council is working to secure external funding to deliver flood risk works for a number of key areas identified within the site specific Action Plan.
- 3.13. Some areas identified as being of high priority are already being addressed by the Council. For example, a project is underway to manage flood risk along the Cannons Brook. This was identified by the surface water modelling as Critical Drainage Area No 027, Ladygate Lane.

### **Resident and Council Actions**

- 3.14. Managing flood risk should not be confined to specific areas subject to flooding, but include all areas contributing to that flooding. Residents can play a key role in helping to reduce flood risk in Hillingdon, for example by making their front gardens more permeable to prevent run off, or providing sustainable drainage and using rain water harvesting such as water butts.
- 3.15. As a first step to improving communications, the Council can provide the public with more detailed flood risk information through its website. A number of flood risk management pages are already available together with recommendations on how to deal with flooding, with links to other key organisations such as the Environment Agency. Actions which can be undertaken by residents to help reduce flood risk to themselves and others, are set out in Appendix B.

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<sup>1</sup> Significant events – For example where flooding caused road closures or residents have experienced flooding inside homes.

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## **Council Actions**

- 3.16. Actions which the Council needs to undertake to alleviate flood risk are set out in Appendix C.
- 3.17. All measures are prioritised into Short, Medium and Long Term actions. Short Term actions are those that the Council is working on currently, which have a high priority, Medium Term will take longer to deliver, while Long Term actions are those which will take longer than 6 months to deliver. However the resources, technical knowledge, equipment and costs involved in implementing each of these actions will be factors in programming work as these actions are developed in more detail.
- 3.18. The Council will continue to work with the North West London Flood Risk Strategic Partnership, to share information and identify how resources can be shared, as well as forming partnerships with other bodies such as Transport for London, Network Rail and Thames Water.
- 3.19. Ongoing maintenance of the drainage network and small scale improvements are already undertaken as part of the Borough's operations. However the improvement of maintenance regimes and targeting of those areas identified as flooding regularly or reported as having blocked gullies, will now be informed by the SWMP to ensure that resources are allocated to greatest effect.
- 3.20. Although the Action plan will help fulfil the duties the Council is required to undertake under the Flood and Water Management Act, the full statutory duties will be explored in the Hillingdon's Flood Risk Management Strategy.

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## **4. MONITORING AND REVIEW**

- 4.1. The partnership arrangements established as part of the SWMP process will continue beyond the completion of the SWMP, for example the working partnership between the North West London Flood Risk Strategic Partnership (Groups 1 & 2) and membership of the wider London Drainage Engineers Group (LoDEG). These partnerships enable an understanding of flood risk across the region, an opportunity to discuss proposed actions, opportunities for operational efficiency and any legislative changes and the sharing of best practice management procedures.
- 4.2. It is in the interests of the Council and residents that the SWMP Action Plan remains up-to-date. It will be reviewed and, where appropriate, updated annually. However there may be circumstances which will trigger a review and/or an update of the Action Plan in the interim such as:
- Occurrence of a surface water flood event;
  - Additional data or modelling becoming available, which may alter the understanding of risk within the study area;
  - Outcome of investment decisions by partners is different to the preferred option, which may require a revision to the action plan; and
  - Additional (major) development or other changes in the catchment which may affect the surface water flood risk.

### **Updating and incorporating new Datasets**

- 4.3. A key action from the Action Plan is to ensure that the most up-to-date datasets are used. The following tasks should be undertaken when including new datasets in the Hillingdon SWMP:
- Identify new dataset. For example new information produced by the Environment Agency.
  - Save new dataset/information.
  - Record new information in log so that next update can review this information.
  - Continue updating existing datasets with new information.
  - Add to GIS layers for internal awareness and process.

### **Updating the SWMP**

- 4.4. In recognition that the SWMP will be updated in the future, it has been divided into Part 1 Evidence Base and Part 2 Options and Action Plan so they can be updated independently. However there may be occasions where the Action plan may trigger a review of reports and figures within the Evidence Base or the

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Maps held in the Appendices. Each should be given a version number and date so it is clear which version should be used.

- 4.5. Any amendment should trigger the reissue to departments within the Council and other stakeholders as well as the website.
- 4.6. The actions and priorities will be continually reassessed as more information on flooding is collected from residents and as actions are progressed and investigated. The action plan is a living document and will be updated regularly for internal use. Periodically the version published on the Council's website will be updated.