

<b>Subject:</b>	<b>Surface Water Management Plan</b>		
<b>Date of Meeting:</b>	<b>26 November 2013</b>		
<b>Report of:</b>	<b>Executive Director – Environment, Development and Housing</b>		
<b>Contact Officer:</b>	<b>Name:</b>	<b>Neil Fearnley</b>	<b>Tel: 294597</b>
	<b>Email:</b>	<b>Neil.Fearnley@brighton-hove.gov.uk</b>	
<b>Ward(s) affected:</b>	<b>All</b>		

**FOR GENERAL RELEASE****1. PURPOSE OF REPORT AND POLICY CONTEXT**

- 1.1 Brighton and Hove City Council is designated as a Lead Local Flood Authority responsible for local flood risk management for all sources of flooding with the exception of the sea, main rivers and reservoirs. These are the responsibility of the Environment Agency.
- 1.2 Supported by funding from DEFRA a Surface Water Management Plan (SWMP) has been prepared to facilitate integrated flood risk management and to assist the city council meet its statutory obligations. The SWMP helps identify locations at highest risk of surface water flooding, analyse the source of flooding and consider options to reduce the likelihood and impact of flooding at these locations.
- 1.3 The Committee is asked to approve the SWMP which will be used to develop schemes to reduce the risk of flooding at locations highlighted. The Plan will then form part of the Local Flood Risk Management Strategy that the council has a statutory duty to prepare.
- 1.4 The Environment Agency, in accordance with its statutory requirements, will be publishing updated flood maps in December 2013

**2. RECOMMENDATIONS:**

- 2.1 That Committee approves the Surface Water Management Plan to coincide with the publication of updated flood risk maps by the Environment Agency in December 2013.
- 2.2 That Committee authorises the Executive Director Environment, Development and Housing to commence local consultation on options for reducing flood risk at the locations identified in the Surface Water Management Plan as being at highest risk of flooding.

### **3. CONTEXT/ BACKGROUND INFORMATION**

#### **Background**

- 3.1 Following several years of national flood events, most notably in summer 2007, the Pitt Review 2008 was published which highlighted lessons learnt from these events. It noted that the consequences of flooding could have been reduced through more effective local co-ordination between relevant parties and recommended that Local Authorities take the lead on managing local flood risk, supported by relevant stakeholders. It went on to recommend that a Surface Water Management Plan should be adopted particularly where surface water flood risk is seen as high.
- 3.2 The area of Brighton and Hove was designated nationally as being in the top 10 areas at risk of flooding due to the impact of flooding from rising groundwater in the underground chalk aquifers, combined with surface water flooding, having the potential to flood a significant number of properties. This resulted in funding being made available by DEFRA to support development of a local SWMP.

#### **Legislation**

- 3.3 In 2009, an EU Floods Directive, introduced in response to cross border European flooding in 2000 and 2004, was transposed into English law through the Flood Risk Regulations 2009. This introduced the role of a Lead Local Flood Authority (LLFA), defined as either the unitary authority for the area or the County Council. Brighton and Hove City Council thus became a LLFA with a duty under the Flood Risk Regulations to prepare the following deliverables to the Environment Agency by specific dates:
  - Preliminary Flood Risk Assessment – by 22<sup>nd</sup> June 2011
  - Flood Hazard maps and Flood Risk Maps – by 22<sup>nd</sup> June 2013 (for publication by the Environment Agency by 22<sup>nd</sup> December 2013)
  - Flood Risk Management Plan – by 22<sup>nd</sup> December 2015

The Preliminary Flood Risk Assessment was produced and published by the due date on the Environment Agency web-site.

- 3.4 The Flood Risk maps are to be published in December 2013 by the Environment Agency. These are third generation flood risk maps with enhanced flood modelling showing a more accurate representation of areas at risk of flood than earlier editions. The benefits for the city council in producing a Surface Water Management Plan at the same time will support publication of the updated flood maps by raising awareness and giving confidence to the public that a plan is in place to manage and reduce the impact of flood risk on properties and reduce disruption to transport.
- 3.5 The city council will shortly be working with the Environment Agency to prepare a Flood Risk Management Plan, the third duty under the Flood Risk Regulations, by June 2015. This is likely to be a consolidated Plan, in a defined Environment Agency river basin district, that will include flooding from river, coastal, reservoir as well as surface water and groundwater.

3.6 The culmination of the government's work on flood risk strategy and policy was the Flood and Water Management Act 2010. The principal duties of a Lead Local Flood Authority under the Act are:

- To develop, maintain and monitor a Local Flood Risk Management Strategy
- Requirement to investigate floods and publish findings
- Duty to maintain a register of assets which affect flood risk
- Power to designate third party assets which affect flooding
- Establish the role of a Sustainable Drainage System (SuDS) Approving Body, an approval process for surface water drainage systems on new developments (SAB).

3.7 The work initiated by the Surface Water Management Plan is a key element that will support development of both the Local Flood Risk Management Strategy required under the FRR 2009 and the Flood Risk Management Plan required under the FWMA 2010.

### **Surface Water Management Plan**

3.8 Led by the city council a local partnership was brought together with principal representation from:

- The Environment Agency,
- Southern Water, the local water and sewerage company,
- Peter Brett Associates, consultants who have supported the City Council throughout its work on flood risk management.

Other stakeholders that were contacted to obtain information and data included: East Sussex Fire and Rescue Service, Network Rail, Highways Agency, South Downs National Parks Authority.

3.9 Phase 1 of developing the SWMP was to establish the partnership and to collect data from each partner and stakeholder of previous flood events that have occurred throughout the area of the City Council. The quality of data varied with some being 'best possible' where partners had robust records backed up by river/sewer flow data and rain gauge data. Data from others was based on anecdotal evidence. Some stakeholders were unable to provide any information. The last most significant flood event to take place in Brighton and Hove was during winter 2000/2001 when many properties were flooded and a number of roads were closed over a sustained period due to the high groundwater levels.

3.10 Phase 2 of the SWMP was the risk assessment stage utilising the initial flood data and modelling rainfall events. From a total of 42 locations that had historical records of flooding, seven 'hotspot' sites were identified as remaining at highest risk of future flooding.

3.11 Phase 3 of the SWMP was to identify measures that could be taken at each hotspot site and to undertake an assessment of each option leading to a preferred option being agreed.

- 3.12 Phase 4 is to then prepare an action plan and secure funding in order to implement the preferred option.

### **Hotspot locations and flood mitigation measures**

- 3.13 The seven hotspot sites ranked in order of greatest flood risk were identified as:

1. Mile Oak
2. Bevendean
3. Patcham
4. Carden Avenue/Warmdene Road
5. Moulescombe Primary School/Lewes Road
6. Ovingdean – Ketts Ridge
7. Blatchingham Mill School

Each of these locations is considered briefly below. A more detailed analysis of options, including drawings, is included in the complete SWMP available in the Member's Room.

#### **Mile Oak**

- 3.14 Flooding occurred in 2000 through two mechanisms: groundwater flooding and overland surface water flow from the area to the north of the A27. Several residential properties and garages were flooded as well as gardens. Springs emerged in gardens due to the high groundwater level which persisted for over two weeks.
- 3.15 Solutions involve managing the overland flow of water. There are currently flood defence structures (bunds and ditches) to the north of Mile Oak farm. One option is to supplement these with a further surface water detention basin to the north of the A27 to capture run-off from Cockroost Hill and to make local highway amendments to manage the flow of water into the existing super gullies. Property level protection will also be considered.

#### **Bevendean**

- 3.16 Flooding has previously occurred in Bodiam Close, Bodiam Avenue, Health Hill Avenue and Leybourne Parade. There are three cascades that provide flood defence to the area by storing the run-off from the hills. Once these have reached capacity the water overflows to a soakaway on Bodiam Avenue, and from there to gully soakaways along the road. In extreme conditions these can become saturated with further run-off leading to flooding of properties that are below highway level.
- 3.17 Solutions involve ensuring that the cascades operate effectively and carrying out minor highway works to contain any overland flow on the highway. Soakaways at the school and earthworks will be considered as a retention area to store run-off downstream. Ensuring regular maintenance of the cascades, surrounding ditches and soakaways is also a priority.

## Patcham

- 3.18 During intense rainfall water emerges from springs in the railway embankment and from soakaways in the petrol station at Mill Road. Water then follows the topography of the land into Patcham Recreation Park, past Patcham Place and onto London Road (A23). Flooding then takes place at properties on Old London Road. The overland flow results in the Southern Water sewer exceeding capacity, as a result raw sewage has emerged in Patcham and Preston Park (downstream of Old London Road).
- 3.19 Options for reducing the risk of flooding are to retain the overland flows within the large recreation ground and to assess property level protection.

## Carden Avenue / Warmdene Road

- 3.20 Flooding occurs at the bottom of Wilmington Parade with overland flow along Carden Avenue leading to flooding at the low spot on Warmdene Road.
- 3.21 Options being considered to relieve flooding are to construct a raised table in the highway at the junction of Carden Avenue and Warmdene Road and to increase kerb heights to direct surface water flow away from Warmdene Road. The possibility of constructing a siphon from Warmdene Road to the playing field at the rear of the properties is also being investigated.

## Moulescombe Primary School / Lewes Road

- 3.22 Flooding of the Lewes Road area due to combined rising groundwater and surface water run-off has led to flooding of the A270 Lewes Road and the local primary school. The flooding occurs due to run-off from Lewes Road and the adjacent Wild Park.
- 3.23 Solutions include earthworks in Wild Park to attenuate run-off and footway amendments adjacent to the primary school to provide increased protection.

## Ovingdean, Ketts Ridge

- 3.24 Historically flooding has occurred due to a build-up of run-off from the arable fields at the embankment behind the property, Ketts Ridge.
- 3.25 Flood defences that include an embankment and a ditch currently exist. Further analysis of the rural run-off and ditch capacity will be undertaken to assess whether these defences, once maintained, are adequate.

## Blatchingham Mill School

- 3.26 Flood records indicate that the drains and soakaways at the school were unable to cope with the surface water run-off during extreme rainfall events.
- 3.27 A survey of the existing drainage lay-out is proposed to confirm whether the existing system is adequate. Property level protection will also be considered.

#### **4. ANALYSIS & CONSIDERATION OF ANY ALTERNATIVE OPTIONS**

- 4.1 The purpose of the Surface Water Management Plan is to provide a strategic and detailed assessment of flood risk within Brighton and Hove. This will help prioritise areas at greatest risk of surface water flooding and form the basis of developing flood mitigations measures at these sites.
- 4.2 Producing a SWMP is supported by DEFRA as a key process that will help enable the city council to comply with its statutory duties under the Flood Risk Regulations 2009 and Water Management Act 2010.
- 4.3 The alternative would be to not produce a Surface Water Management Plan. This would mean that the current high risk of flooding to properties and local transport infrastructure would continue.

#### **5. COMMUNITY ENGAGEMENT & CONSULTATION**

- 5.1 The Surface Water Management Plan will be incorporated into the Local Flood Risk Management Strategy, a statutory document required within the Flood and Water Management Act 2010. The city council has a duty to consult on this Local Strategy. In order to avoid consultation overload on flood risk management themes it is intended to consult once only across the city council on this latter document which is anticipated to be available in Spring 2014.
- 5.2 Subject to approval of the SWMP by Committee, consultation will commence at the individual locations identified in the Plan. The local community, business, public authorities, transport bodies and emergency services will be consulted on the options for flood mitigation measures at these sites.

#### **6. CONCLUSION**

- 6.1 The Surface Water Management Plan provides an evidence based assessment of flood risk in Brighton and Hove. Approval of this document will allow the city council to progress important work in this area as Brighton and Hove has been identified as one of ten high flood risk authorities in England.
- 6.2 Approval of the SWMP is timely as it co-incides with updated flood maps being published by the Environment Agency in December 2013. This is likely to raise the profile of flood risk nationally and increase awareness within the local community. Having a SWMP in place will help demonstrate progress being made and provide action plans for further work in locations at highest risk of flooding.

#### **7. FINANCIAL & OTHER IMPLICATIONS:**

##### Financial Implications:

- 7.1 Since 2010/11 the city council as a Lead Local Flood Authority has allocated approximately £915,000 of revenue funding towards surface water management planning, of which £273,000 was funded by Area Based Grant, £497,000 by the Local Services Support Grant and £145,000 from 2013-14 as part of the councils core funding received from government. It is anticipated that further revenue

funding of approximately £258,000 will be available in 2014/15 of which £108,000 is expected to be grant funded. Future grant contributions will be subject to government spending review.

- 7.2 Costs to date of approximately £110,000 have covered consultant's fees for producing the Surface Water Management Plan and internal officer time.
- 7.3 Unspent budget has been carried forward each year and will be used to fund minor flood alleviation schemes arising from the SWMP. It will also be used to fund the cost of local consultation on the flood schemes, ongoing maintenance costs of flood defence structures, preparation of further statutory flood risk management plans and staff costs that include the recent recruitment of a Flood Engineer.
- 7.4 Following consultation on the options for flood mitigation measures a programme of projects and other ongoing costs will be prepared. The residual revenue budget will be used to fund minor schemes. Bids for more expensive capital projects will be submitted to the Environment Agency for funding from the Local Levy fund or for inclusion in their Medium Term Financial Plan managed by the Southern Regional Flood and Coastal Defence Committee.

*Finance Officer Consulted: Steven Bedford*

*Date: 31/10/13*

#### Legal Implications:

- 7.5 The city council has a duty under the Flood Risk Regulations 2009 and the Flood and Water Management Act 2010 to co-ordinate flood risk management in relation to flooding from surface water and groundwater. It is also required to take account of flooding from the sea, coast and reservoirs where they have an impact on local flood risk.
- 7.6 In carrying out consultation the Council is under a general duty to ensure that any consultation is fair. This means that it must be carried out when proposals are being formulated, that adequate time and information about proposals must be given to consultees to ensure that they can provide a proper response, and that any consultation responses must be properly considered in reaching the decision.

*Lawyer Consulted:*

*Carl Hearsom*

*Date: 31/10/13*

#### Equalities Implications:

- 7.7 The Surface Water Management Plan does not present any equality implications. Any equality issues, particularly with regard to accessibility, will be addressed when identifying options for flood mitigation measures at the locations of highest flood risk.

#### Sustainability Implications:

- 7.8 Flood attenuation measures will provide for sustainable use of water allowing infiltration of the water into the ground over a period of time and evaporation into the air. Property protection will ensure that buildings remain in use for longer than

if they were impacted by floods leading to repair or rebuild using natural resources.

Any Other Significant Implications:

- 7.9 Some locations identified as being at risk of surface water flooding are also prone to discharge from sewers leading to raw sewage entering properties. Steps taken to reduce flooding will therefore have a beneficial impact on public health.

## **SUPPORTING DOCUMENTATION**

### **Documents in Members' Rooms**

1. Surface Water Management Plan

### **Background Documents**

1. Brighton and Hove Preliminary Flood Risk Assessment – June 201



