Havant Borough Council

Emsworth Flood Risk Strategy Review

March 2015

Cleaner, Safer, More Prosperous

Executive Summary

Emsworth occupies a unique situation within Havant Borough, due to its geology, the hydrology within its three drainage catchments, and its historic urban form, which affects the free operation of critical sections of watercourses within these catchments. In the past planning applications for individual developments have been permitted recognising the effects of large incremental changes on the operation of these watercourses, but it is now recognised that the cumulative effect of many smaller developments has had an equal if not greater bearing on the operation - both in terms of capacity and in terms of water quality - of the drainage system.

The primary role of the adopted Local Plan (Allocations) is to allocate land to meet the Borough's development needs set out in the adopted Local Plan (Core Strategy). This includes the allocation of land for housing and employment in Emsworth. During consultation on the Local Plan (Allocations), the community and Councillors of Emsworth aired their concern that cumulative development could exacerbate existing flood risk in the area. The National Planning Policy Framework (NPPF) and Technical Guidance (2012) make it clear that new development should not increase flood risk either to an area already at risk of flooding or elsewhere. All applications for new development in areas of flood risk must therefore under this guidance demonstrate how this can be achieved in order for the development to be permitted. In accordance with these requirements, development of sites within the Local Plan (Allocations) will not exacerbate the existing flood risk situation.

The preparation of this Strategy has been informed by discussions between Havant Borough Council (HBC) and the Environment Agency (EA), Solent Coastal Partnership, Hampshire County Council and the Emsworth Flood Action Group, amongst others. These have also had a direct influence on the preparation of the Local Plan (Allocations), in particular Policy DM25 (Managing Flood Risk in Emsworth) (reproduced at Appendix 1).

The purpose of the Emsworth Flood Risk Strategy is to support the policies in the Local Plan (Allocations) and to provide more detail on mitigation schemes and other improvements that aim to reduce flood risk in Emsworth in the short, medium and long term. The EA, HBC, HCC, the Solent Coastal Partnership, Southern Water, local interest groups and other partners are working together to ensure the timely and effective delivery of this Strategy.

The Strategy was initially published in October 2013. This version updates the original version to take account of the formation of a new working party, progress on existing elements of the Strategy, the addition of new components to the Strategy and the adoption of the Local Plan (Allocations).

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Appendices

1.0 Introduction

1.01 Havant Borough has 56km of coastal frontage and 32km of main river frontage. As a result, a significant proportion of the Borough, approximately 22%, is at risk from tidal and/or fluvial flooding and is therefore designated by the Environment Agency (EA) as being in Flood Zones 2 and 3.

1.02 Emsworth is one of the Borough's few urban areas to suffer from flooding. The settlement is located on the coast and includes the Nore Farm Stream, the West Brook and the River Ems. Over recent years, extreme weather and high tides have resulted in a high frequency of flood events, which have affected local residents and businesses and caused considerable damage to properties. These flood events were caused by a combination of fluvial and tidal influences and principally affected Selangor Avenue, Victoria Road, North Street and Bridge Road in Emsworth.

1.03 The frequency of recent flooding events has resulted in the Environment Agency (EA), which has responsibilities for managing primary water courses, identifying Emsworth as a priority area. This status means that one of the EA's priorities in Havant Borough is to review the current flood risk and investigate ways of reducing the flood risk in the area. This work has included a review of maintenance and incident response procedures, installation of monitoring equipment and investigation of the potential for fluvial and surface water flow attenuation.

1.04 The Local Plan (Allocations) plans for new housing and employment in Emsworth up to 2026. To coordinate this future growth with the work of the EA, Havant Borough Council (HBC) collaborated with the EA and other partners including Hampshire County Council (HCC), Solent Coastal Partnership and Emsworth Flood Action Group (EFAG) in the preparation of the Local Plan (Allocations), to ensure that new development makes the most of opportunities to contribute to the reduction of flood risk in Emsworth.

1.05 To ensure continued ongoing collaboration on local flood risk issues, a working party (the Emsworth Flood Risk Management Steering Group) has been set up involving EFAG, the Emsworth Resident's Association, the Emsworth Forum, HBC, HCC, the EA, Southern Water and the National Flood Forum. The purpose of this group is to facilitate regular dialogue and sharing of information on flooding and flood risk in Emsworth among organisations with a remit for flood prevention/mitigation, relevant county and borough planning authorities, stakeholders and local Emsworth residents. It also enables group members to proactively seek mitigation measures to help alleviate the problems associated with flooding in Emsworth and to support EFAG in its production of a Flood Action Plan for Emsworth.

2.0 Background

2.01 The EA has explored the historic patterns of flooding in Emsworth. The main sources of fluvial flooding have been overflow from the West Brook and the Nore Farm Stream. This was caused by heavy and/or prolonged periods of rain, and often exacerbated by tidal events and, in the past, by debris blocking flows through existing channels and culverts.

2.02 The flooding event in winter 2010/2011 affected 21 properties in Bridge Road and Selangor Avenue. The properties on Bridge Road were affected by water overflowing from the West Brook and the properties on Selangor Avenue were affected by overflow from the Nore Farm Stream. More recent flooding events have highlighted the very low standard of protection to the properties in Selangor Avenue and Bridge Road.

The West Brook

2.03 The West Brook rises in Southleigh Forest and flows through agricultural land prior to reaching Emsworth. The stream becomes increasingly modified as it passes under the A27, the West Coastway railway line, and then on to Emsworth's existing urban area. Here the river follows a delineated course before reaching Bridge Road.

2.04 From Southleigh Farm to Bridge Road, the stream flows through several culverts, which constrain its flow. It passes under a footpath on Washington Road, the A27 dual carriageway, the railway line and Victoria Road. At Bridge Road the water course flows through a highly modified, largely artificial, channel before entering Bridge Road Culvert and discharging into Emsworth Mill Pond. The Mill Pond has an outflow to Chichester Harbour. Water levels in the pond can be controlled (i.e. lowered) through a sluice gate but are influenced by tidal conditions.

2.05 Historically, flooding has occurred in the proximity of the final culvert at Bridge Road. The capacity of this culvert is 20% of that required for an urban area. Bridge Road is therefore prone to frequent flooding when the culvert capacity is exceeded. The flood water then becomes trapped and held back at Bridge Road by the A259, as the raised level of this road prevents water draining out to the Mill Pond.

Nore Farm Stream

2.06 The Nore Farm Stream rises to the North of the A27. It is channelled southwards through a series of drainage ditches across agricultural land, to a culvert and pipe under the A27 and a single culvert under the railway line. It then flows along a ditch beside the railway to a paddock upstream of Selangor Avenue. It enters two pipes immediately north of 87 and 89 Selangor Avenue, flowing underneath these properties and the road. The stream flows into a single culvert beneath Nore Farm

Avenue and the A259 until it opens into a ditch in a garden to the rear of Barn Close. The stream continues southwards at the boundary of the residential properties at Brook Gardens, where it is constrained by a variety of flood defences, to Nore Barn Wood and finally via marshland in to Chichester Harbour.

2.07 The culvert system underneath Selangor Avenue and Nore Farm Avenue restricts the flow of the stream from its original condition of an open watercourse. As a result, properties in Selangor Avenue flooded in November 2010, and June and December 2012. In extreme events more properties could be at risk in Nore Farm Avenue and the Brook Gardens Area. Increased de-culverting of the watercourse is considered to be economically unviable, disruptive and technically limited due to tidal influence further downstream.

3.0 Emsworth Flood Risk Strategy

Overview

3.01 The EA has considered ways of reducing the flood risk to the residents of Emsworth. Clearly it is not possible to prevent rain and stop the tides, and the risk of flooding could not be removed entirely. However, managing the flow of water in the West Brook and Nore Farm Streams and into the Mill Pond can reduce the probability of flooding in Selangor Avenue, Victoria Road, North Street and Bridge Road.

3.02 The EA and HBC consider that the best way to achieve this is through the measures in the Emsworth Flood Risk Strategy and through Local Plan (Allocations) Policy DM25 (Managing Flood Risk in Emsworth).

3.03 The Emsworth Flood Risk Strategy outlines a series of improvements to the existing flood maintenance regime and to new flood management and storage works in the Emsworth area. These improvements will help to control the flow of water, and slow its discharge into Chichester Harbour. Collectively these measures will help to reduce the frequency of flooding events in Emsworth from 1 in 2 years (i.e. 50% probability) to a desired return period of 1 in 75 (i.e. 1.33% probability).

3.04 The following projects fall within the scope of these works. Many of these are now complete or are in the process of being implemented:

- Replacement of the deteriorated sluice and fish pass at Constant Spring on the River Ems. This structure helps to control and manage the rate of water flow through to Chichester Harbour via the Slipper Mill Pond. This improvement was completed during 2013.
- More frequent and regular clearing of existing channels, culverts and their trash screens in the area. This was approved by the EA in spring 2013 and is now in operation.
- Replacement of the trash screen at Bridge Road to best practice standards. This will reduce the probability of the screen collecting debris and make it more accessible for maintenance. This will help to reduce the likelihood of total blockage. The replacement was fitted in summer 2013 and now operates to best practice standards.
- Installation of a telemetry at the Bridge Road Grille to monitor the rate of flow and any blockages, and to act as an early warning system of a localised flooding event at Bridge Road. This was put in place in summer 2013 and now operates to best practice standards.
- Investigation of attenuation of surface water flows from existing Horndean Road development, with a view to delivering a flow improvement scheme. This will be a joint partnership between the EA, Southern Water and all other flood risk authorities. The aim is to hold water back at times of high rainfall in order to reduce flood

risk to properties in Victoria Road, North Road and Bridge Road. The review is scheduled to take place during 2015.

- Production of a River Ems, Lumley Mill, Slipper Pond and Peter Pond flow management strategy, with the benefit of reducing flood risk in Lumley Road. Delivery is planned for 2015.
- New flood storage area to alleviate water flows into Nore Farm Stream. This element of the strategy is called the Emsworth Flood Alleviation Scheme. The new flood storage area will be located in arable land and ditches north of the A27 and the railway. This will hold water back at times of high rainfall and reduce the probability of flooding to properties on Selangor Avenue. Securing land for the works will be the subject of a legal agreement between the EA and landowners. A planning application has been submitted and is being considered. Subject to receiving formal approval it is anticipated that work will commence in 2015/16.
- New flood storage areas are being reviewed to alleviate water flow into the West Brook. These storage areas will be located north of the A27 adjacent to the West Brook. One such site has been identified on arable land immediately to the west of allocated site UE13 (West of Horndean Road). This will hold water back at times of high rainfall and reduce the risk of flooding to properties on Victoria Road, North Street and Bridge Road. The allocation and development of UE13 provides a unique opportunity to relieve flooding problems experienced in the north of Emsworth. The site's topography and location relative north of the railway line and A27 culverts makes it the ideal location for the West Brook's flood storage area. In addition, by working with the landowners and developers of UE13, the cost of the construction of the flood storage in this location are significantly reduced, as a result of coordinating the timing of construction of the alleviation works to coincide with the phased development of the site. The scheme has been put forward for inclusion in the EA's national programme for Flood Defence Grant and Aid Funding. An outline planning application for development of the site was approved at committee in December 2014 and it is now awaiting completion of a legal agreement which will include management of the flood risk area.
- A second flood storage area forms part of proposals for allocated site UE37 (West of Coldharbour Farm). This will again hold water back at times of high rainfall and reduce the risk of flooding to properties on Victoria Road, North Street and Bridge Road. The construction and delivery of these alleviation works can again be tied to development of the site. A planning application for the development of the site has been approved in principle.
- Emsworth Mill Pond (Tidal Flooding): Property Level Protection Options. The EA have put forward a bid for funds from government grant for a proposed build in 2020/21.
- Improvement to the layout and hydraulic performance of Bridge Road and Bosmere Gardens sewer network junction to prevent foul water exeedence and eradicate illegal cross-connections.

Policy DM25

3.06 The Local Plan (Allocations) not only allocates sites for new development, but also includes policies that help to manage new development. Policy DM25 (Managing Flood Risk in Emsworth) is a proactive policy to manage future flood risk in Emsworth in response to local circumstances. This policy and its accompanying text has been reproduced at Appendix 1.

3.07 Emsworth is already currently affected by high incidences of flooding, however it is likely that this situation will worsen in future as a result of climate change and more extreme weather events. Therefore, it is appropriate to make the most of opportunities wherever possible to reduce flood risk in the future through Local Plan policies and on- and off-site alleviation measures.

3.08 The purpose of Policy DM25 is to reduce surface water runoff from new development and thus reduce the volume of water eventually entering the West Brook, Nore Farm Stream and the River Ems. This is achievable through the use of sustainable drainage systems (SUDS) and through the use of developer contributions towards the Emsworth Flood Alleviation Scheme. SUDS help to reduce pressure on the drainage system and alleviate flooding. The policy applies to all new developments in Emsworth, with the exception of residential extensions.

4.0 Delivery and Monitoring

4.01 The Local Plan (Allocations) was adopted in July 2014. All the policies contained in the Plan are a material consideration in the determination of planning applications within the Borough. Policy DM25 may therefore be applied where it is considered appropriate.

4.02 It is anticipated that work on the Emsworth Flood Alleviation Scheme, that is the Nore Farm Stream element of the strategy, will be completed by the end of the 2015/2016 financial year. HBC expect that works relating to the West Brook will be delivered alongside the development of the allocated sites adjacent to the West Brook before the end of the Local Plan period.

4.03 The Annual Monitoring Report (AMR) will monitor the delivery of these important pieces of infrastructure and report on any delays or changes to the estimated completion dates. Should difficulties in delivering the works become apparent, whether through issues with viability or in collaboration with landowners, HBC and the EA will review the Emsworth Flood Alleviation Scheme and identify the preferred alternative in the AMR.

Appendices

Appendix 1: Policy DM25 Managing Flood Risk in Emsworth

Below is Policy DM25 and its accompanying text, as reproduced from the Local Plan (Allocations):

Planning permission will be granted for developments within the Emsworth urban area boundary that can demonstrate how post development runoff has been reduced by the greatest percentage rates and volumes that are possible in the context of cost, technical feasibility and viability. Extensions to existing houses and change of use are exempt from the requirements of this policy.

Planning permission will be granted for developments within the Emsworth urban area boundary of greater than 1 hectare and in Flood Zones 2 and 3 that are supported by onsite sustainable drainage systems.

New developments that fall within the Emsworth urban area boundary; and/or has an impact on the flood risk of the areas within the Emsworth urban area boundary may be required to make a contribution towards the Emsworth Flood Alleviation Scheme (FAS)

9.28 Emsworth occupies a unique situation in the Borough due to its geology, the hydrology within its three drainage catchments, and its urban form. All of which affect critical sections of watercourses within these catchments. In the past, large developments were permitted and the potential effects on the operation of these watercourses were recognised and addressed, however it is now understood that the cumulative effect of many smaller developments has had an equal if not greater bearing on the operation, both in terms of capacity and of water quality of the drainage system.

9.29 Havant Borough Council, Hampshire County Council and the Environment Agency have therefore determined that it is now necessary to understand and take account of the drainage impact of any changes to impermeable areas within proposals for development. This policy forms part of an overall flood risk management strategy for Emsworth. Another critical element of this strategy is the delivery of the Emsworth Flood Alleviation Scheme, which is a series of physical interventions to the Emsworth watercourses that will help reduce the frequency of flooding events in the future. More information is set out in the Emsworth Flood Risk Management Strategy, which is an evidence base study that supports this plan.

9.30 All new development in Emsworth should follow the SUDS Management Train (prevention, source control, site control and regional control) to reduce pressure on the existing drainage regime and aim to improve the existing standard of protection. Planning applications for new development should therefore demonstrate how post development runoff has been reduced. This evidence should be

set out in a flood risk statement, where the development is of less than 1 hectare. This statement should be proportionate in scale and detail of the planning application and should also demonstrate that the development does not have a negative effect on the watercourse, groundwater and/or sewerage. Planning applications for development of 1 hectare or more and those in Flood Zones 2 and 3 should be supported by a flood risk assessment, which should in addition demonstrate how the sustainable drainage system will operate on-site and will reduce the existing greenfield and brownfield runoff rates and volumes. More information on the information required for a flood risk assessment is contained in the government publication called Technical Guidance to the National Planning Policy Framework (NPPF).

9.31 Contributions may also be required from developments that fall within or impact on the flood risk of the area within the Emsworth urban area boundary, where the Emsworth Flood Alleviation Scheme is expected to be in place or approved within five years of the date of the application. The use of independent third party valuation expertise, at the developer's cost, may be required to find a negotiated solution to developer requirements.

9.32 This policy relates to applications for developments within the Emsworth urban area boundary. However, it may also be necessary to apply this policy on a case by case basis to developments that are adjacent to the urban area boundary, which may have the potential to impact upon the level of flooding within the urban area boundary. Due to their scale, planning applications for extensions to existing houses are exempt from the policy. However, in some cases the Council may suspend permitted development rights for new developments where the Council considers there to be potential for a negative impact from the development, whether alone or in combination.

Appendix 2: Emsworth Flood Risk Strategy - Summary Table

Improvement to Existing Infrastructure or New Measure	Description	Benefit	Phasing
Improvement	Replacement of the deteriorated sluice and fish pass at Constant Spring on the River Ems.	This structure helps to control and manage the rate the flow of water through the main river and into Chichester Harbour via the Clipper Pond.	Completed.
Improvement	More frequent and regular clearing of existing channels, culverts and their trash screens.	Reduce the risk of blockages. To ensure it does not block significantly during a flood event.	Approved by the EA in spring 2013 and now in operation.
Improvement	Replace the trash screen at Bridge Road to best practice standards.	Reduce the risk of blockages. To ensure it does not block significantly during a flood event.	Replacement fitted in summer 2013 and now operates at best practice standards.
Improvement	Installation of a telemetry at the Bridge Road Grille.	Monitor the rate of flow, identifies blockages and act as a warning system for early identification of a localised flooding event in the Bridge Road area.	Installed in summer 2013 and now operates at best practice standards.

Improvement to Existing Infrastructure or New Measure	Description	Benefit	Phasing
Improvement	Investigation of attenuation of surface water flows from existing Horndean Road development, with a view to delivering a flow improvement scheme.	Hold water back at times of high rainfall in order to reduce flood risk to properties in Victoria Road, North Road and Bridge Road.	Review scheduled to take place during 20015.
Improvement	Production of a River Ems, Lumley Mill, Slipper Pond and Peter Pond flow management strategy.	Reducing flood risk in Lumley Road.	Delivery planned for 20015.
New	Emsworth Flood Alleviation Scheme: New flood storage area to alleviate water flows into Nore Farm Stream, located in arable land and ditches north of the A27 and the railway.	This would hold water back at times of high rainfall and reduce flood risk to properties on Selangor Avenue.	Planning application submitted. Works expected to take place during financial year of 2015/16.
New	New flood storage area to alleviate water flow into the West Brook, located on arable land immediately adjacent to allocated site UE13 west of Horndean Road.	This would hold water back at times of high rainfall and reduce flood risk to properties on Victoria Road, North Street and Bridge Road.	Outline consent for this scheme was granted in December 2014 as part of the development of site UE13. Works expected to be delivered before end of Local Plan period.

Improvement to Existing Infrastructure or New Measure	Description	Benefit	Phasing
New	New flood storage area to alleviate water flow into the West Brook, forming part of allocated site UE37 west of Coldharbour Farm.	This would hold water back at times of high rainfall and reduce flood risk to properties on Victoria Road, North Street and Bridge Road.	Agreed as part of current planning application for development of site UE37, which has been approved in principle. Works expected to be delivered before end of Local Plan period.
New	Emsworth Mill Pond (Tidal Flooding).	Property Level Protection Options.	The EA have put forward a bid for funds from government grant for a proposed build in 2020/21.
Improvement	Bridge Road and Bosmere Gardens sewer network junction: Improvement to the junction's layout and hydraulic performance and eradicate illegal cross-connections.	To prevent foul water exeedence.	No timescale proposed at present.