

Water Topic Paper

July 2023



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I. Introduction

- 1.1 This paper provides an overview of the water quality (including wastewater) and flood risk issues and requirements to meet needs generated by development at the Western Harbour Arm part of the Shoreham Harbour Regeneration Area.
- 1.2 The paper outlines the existing evidence relating to flood risk and water quality issues in the area. It also identifies the existing policy requirements as set out in the strategic allocations contained in the Adur Local Plan (2017) and Shoreham Harbour Joint Area Action Plan (2019). Lastly, the paper considers the implications of recent development coming forward at the Western Harbour Arm at higher densities than predicted and considerations for the Adur Local Plan Update.

2. Flood Risk

Process

- 2.1 As required by the NPPF the sequential and exceptions tests were undertaken as part of the process in preparing the 2017 Adur Local Plan. The sequential test showed there were no alternative sites available at lower flood risk and the exception test demonstrated that development here would bring wider sustainability benefits in the form of regeneration and that development could be made safe through the provision of new flood defences.

Evidence

- 2.2 The allocation of this area for regeneration was supported by the 2012 Strategic Flood Risk Assessment (SFRA) and the Shoreham Harbour Flood Risk Management Guide (2015) and accompanying Technical Annex. Both of these assumed a predicted flood level for a 1 in 200-year event in 2115 of 5.08m Above Ordnance Datum (AOD), based on UK Climate Projections (UKCP) 09. The majority of this area will be at a high risk of tidal flooding in the future due to climate change, some areas are also affected by surface water flooding and tide locking therefore to ensure development is safe improved flood defences will be required.

Requirements

- 2.3 The Shoreham Harbour Joint Area Action Plan (2019) contains detailed policies. Policy SH6 addresses flood risk and requires residential development proposals to have a finished floor level of 5.77m AOD to protect against a breach scenario, and where undefended land levels are below the 1 in 200 year tidal flood event for 2115, flood defences should be provided to 5.4m AOD.
- 2.4 In 2020 West Sussex County Council, as the Lead Local Flood Authority, commenced the 'Over the Wall'

drainage project to explore the feasibility, design challenges and potential benefits of directing rooftop drainage for waterfront developments over the seawall rather than to traditional underground gravity drainage networks the discharges of which are constrained by tidal flaps. Adur Local Plan Policy 36: Flood Risk and Sustainable Drainage also requires (on relevant sites), storage of runoff during the high part of the tidal cycle. Without over the wall drainage, and with the impacts of climate change the duration that the existing outfalls will be tide locked will increase, therefore also increasing the volume of storage required.

3. Water Quality

Background

- 3.1 The Water Environment Regulations 2017 set out requirements to prevent deterioration and enhance and restore water bodies to 'good' status. The UK's 25 Year Environment Plan (2018) includes a target to achieve clean and plentiful water by:
- Reducing damaging abstraction of water from rivers and groundwater
 - Reaching objectives for biodiversity or drinking water
 - Minimising the amount of water lost through leakage
 - Minimising harmful bacteria in bathing waters.

Local Evidence

- 3.3 The River Adur throughout Adur District is a transitional water body that has been heavily modified. It is currently classified as being of moderate ecological status. The Estuary is also a Site of Special Scientific Interest (SSSI).
- 3.4 There is an area of houseboats on the south side of the River Adur. The houseboats are connected to mains water and electricity but, with a few exceptions, are not connected to the public sewer (Southern Water). Sewage is discharged directly into the river (in the majority of cases first having been macerated). Pollution is caused through the discharge of sewage, paint, oil and other substances from houseboats. This can have a significant negative impact on the water quality of the river, the health of people living, working and playing on/at the water, and on the estuarine biodiversity. The Shoreham flood defence project has installed a blank/empty duct through the new defence for each houseboat, to allow future connection should the houseboat owners agree a way forward with Southern Water Services. Connections would remove these discharges of untreated sewage from the estuary. Untreated sewage could also impact nearby Bathing Water beaches and Shellfish Beds.
- 3.5 Lancing, Shoreham Beach and Southwick designated bathing waters are all classed as having Excellent bathing water quality. Bathing water at all these locations can be affected by the River Adur particularly after heavy rainfall. At Southwick a power plant outfall discharges cooling water to the east of the beach and there are a number of other industrial off-shore outfalls along this section of coast, however none of these are known to affect bathing water quality.

- 3.6 Wastewater in this area drains to Shoreham Wastewater Treatment Works (WTW). In 2002 the sewage works were upgraded and the effluent receives further treatment before being discharged through a long sea outfall to protect designated bathing waters.
- 3.7 Shoreham WTW serves Shoreham-by-Sea and Portslade-by-Sea with a population of some 54,577 people. Within the catchment there are 16 Pumping Stations with 3 located within Ropetackle Street, Beech Green and Harbour Way in Shoreham and are followed by a Rising Main which is longer than 1000m. The Dry Weather Flow (DWF) discharge permit at the WTW is currently 10,714m³ per day. Southern Water have confirmed that available headroom currently equates to approximately 4,500 additional dwellings taking into account developments that have planning permission or have already been allocated in Local Plans.
- 3.8 Storm overflows are a necessary part of the combined sewer system, which is designed to take both foul water from homes and businesses, and rainwater runoff from roofs, roads, and driveways. Storm overflows protect homes, businesses and roads from flooding when the system becomes overwhelmed with excess rainwater, and are permitted and regulated by the Environment Agency. Southern Water has committed to significantly reducing storm overflows by 2030. This is different to an emergency overflow which is triggered when there has been a technical fault or a blockage in the system. However both have the potential to impact water quality, particularly bathing waters and blockages can also result in flooding to properties.
- 3.9 Southern Waters draft [Drainage and Wastewater Management Plan \(DWMP\)](#) recognises that blockages are a significant issue in the Shoreham sewer catchment. Blockages are usually caused by a build up of fats, oil and grease (known as FOG), or by items which don't break down in the sewers (such as wetwipes) which can build up and cause blockages.
- 3.10 The DWMP also identified attenuating excess flows in the sewer network using storage tanks and upsizing sewers as the feasible and preferred option for investment to reduce the risk of spill events and flooding. Southern Water has also identified that preventing water from entering the combined sewer system during heavy rainfall through the use of Sustainable Drainage Systems (SuDS), is the most sustainable and cost-effective way to reduce storm overflows.
- 3.11 Developers have a right to connect to the public sewer therefore where Southern Water identifies infrastructure capacity issues planning conditions are used to phase occupation with network reinforcements.

Development Requirements

- 3.12 The National Planning Policy Framework (2021) (NPPF) states that planning should prevent development from contributing to, being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution. Development should where possible help to improve water quality.
- 3.13 National planning guidance highlights that plan-making may need to consider phasing new development so that water and wastewater infrastructure will be in place when and where needed (Paragraph: 005 Reference

ID: 34-005-20140306).

'The preparation of plans should be the focus for ensuring that investment plans of water and sewerage companies align with development needs.... The timescales for works to be carried out by the sewerage company do not always fit with development needs. In such cases, local planning authorities will want to consider how new development can be phased' (Paragraph: 020 Reference ID: 34-020-20140306)

- 3.14 The Shoreham Harbour Joint Area Action Plan (2019) Policy SH7: Natural environment, biodiversity and green infrastructure at point 12 requires that:
'All development must consider implications upon the sewerage and water supply network and ensure that capacity is adequate. New development must connect to the sewerage and/or water supply system at the nearest point of adequate capacity in collaboration with the service provider.'
- 3.15 In addition Adur Local Plan Policy 35: Water Quality and Protection states that development will be permitted provided that *'It protects and enhances groundwater, surface water features and controls aquatic pollution'* and that it has *'sufficient foul and surface water drainage and adequate sewage treatment capacity.'* It recognises that *'Development must be phased to take into account the timing of any water and/or wastewater infrastructure required which must be in place prior to the occupation of development.'*

4. Implications

- 4.1 Waterfront developments permitted to date have included flood defences, this includes Parcellforce (AWDM/0501/12), Free Wharf (AWDM/1497/17 and Kingston Wharf (AWDM/0204/20). In addition West Sussex County Council are recommending that any outfalls are high enough to avoid tide locking throughout the lifetime of the development.
- 4.2 A new Strategic Flood Risk Assessment (SFRA) is being commissioned to support the Adur Local Plan Update which will ensure the specified levels remain accurate and explore additional opportunities across individual potential sites to reduce flood risk.
- 4.3 In relation to wastewater and foul drainage, Southern Water have confirmed that the potential increase identified in scenarios to the number of houses allocated through the Adur Local Plan (2017) and Shoreham Harbour Joint Area Action Plan (2019) can be accommodated within the capacity at Shoreham WwTW. However this is separate to the issue of network capacity and blockages causing emergency overflows which has been identified as an issue for the catchment.
- 4.4 Southern Water is a consultee in the planning process for both Local Plans and Planning Applications. For those developments already permitted, where network capacity issues have been identified, planning conditions were imposed to phase occupation with delivery of network reinforcements. Previously regeneration of the Shoreham Harbour Western Harbour Arm was considered as a whole area. As further information is gathered on the potential capacity and deliverability of individual sites, the Council will work with Southern Water to identify where network reinforcement will be required and seek to phase development in line with this.