

Chichester District Council

Surface Water and Drainage Supplementary Planning Document

January 2016

1. Overview

- 1.1 This Surface Water and Drainage Supplementary Planning Document (SPD) applies to the geographic area covered by the adopted Chichester Local Plan: Key Policies 2014-2029 (CLP). It excludes the part of the district covered by the South Downs National Park because the South Downs National Park Authority is the planning authority for the National Park area.
- 1.2 The SPD will provide further explanation as to how policies within the adopted Chichester Local Plan: Key Policies 2014-2029 will be applied. The specific policies are:
- Policy 9 – Development and Infrastructure Provision;
 - Policy 12 – Water Management in the Apuldram Wastewater Treatment Works;
 - Policy 33 – New Residential Development;
 - Policy 40 – Sustainable Design and Construction;
 - Policy 42 – Flood Risk Management; and
 - Policy 52 – Green Infrastructure

Purpose of the Surface Water and Drainage SPD

- 1.3 The Surface Water and Drainage SPD expands on the objectives and policies of the CLP. The Plan recognises that to deliver the growth sustainably and in a timely manner, the proper management of water and an understanding of whether existing infrastructure can cope with an increased demand are important.
- 1.4 This SPD combines and formalises the approach in the two background documents produced as evidence for the CLP. These are the Wastewater Position Statement January 2014 and the Update to Apuldram Wastewater Treatment Works July 2014. The Table(s) setting out the estimated remaining headroom are updated on a regular basis to take account of planning permissions granted and are essential to the application of this SPD. They can be accessed through the following link - <http://www.chichester.gov.uk/studies#infrastructure>
- 1.5 This SPD will provide further clarification on how these matters should be addressed across the Plan area, recognising some specific geographic issues.

How should it be used?

- 1.6 This SPD will be a material consideration when assessing planning applications or appeals and will be reviewed and updated periodically as necessary. The information contained within the SPD will also provide useful advice to developers and consultants when preparing planning applications to ensure that their development fully considers the water environment and how it should be managed.

2. Background

- 2.1 The water environment in Chichester District is very special. To the south are the internationally important and protected Chichester and Pagham Harbours. These are fed by a number of smaller streams emerging from the South Downs. Many of these streams are supported by the surrounding groundwater which also help to support a range of wildlife and habitats, along with providing a public water supply for the area.
- 2.2 To the north of the District the area is drained by tributaries of the River Arun.
- 2.3 Both Pagham and Chichester Harbour are subject to international nature conservation designations, including protected shellfish waters, which require statutory environmental water quality standards to be met. Furthermore the European Water Framework Directive requires that all water bodies must seek to meet good ecological status and that any actions must not result in deterioration from their current status. The condition of the water environment is not currently good enough to meet the required standards with pressures coming from a range of places, including, point source pollution from sewage wastewater treatment works and diffuse pollution from rural and urban areas. One of the aims of the SPD is to ensure that the quality of the water environment does not deteriorate further as a result of new development.
- 2.4 The south of the plan area is particularly flat and low-lying, being part of the coastal plain, and has suffered from significant flooding events. Whilst there is a risk of river and coastal flooding, a number of areas have suffered from surface water and foul water flooding due to a lack of capacity and infiltration into the sewer network.
- 2.5 Whilst this regular flooding can be caused by poor maintenance of ditches and culverts, discontinuity of the ditch network, or collapses/blockages in piped ditches or drainage, it is important to ensure that new development does not exacerbate existing problems and increase the risk of flooding. Therefore particular attention will be given to the proposals for foul and surface water drainage and the capacity within existing networks to accommodate any increase in flow.

2.6 New development can affect the water environment in various ways – these could be negative through resulting deterioration in water quality but also can offer the opportunity to enhance the quality of the environment. The following sections will set out how development within the Chichester Local Plan area should be managed to achieve both the protection and enhancement of the water environment.

3. Wastewater Treatment Infrastructure

3.1 This SPD covers areas served by the following wastewater treatment catchments: Apuldram (Chichester), Bosham, Thornham, Sidlesham, Pagham, Tangmere, Kirdford, Loxwood and Wisborough Green.

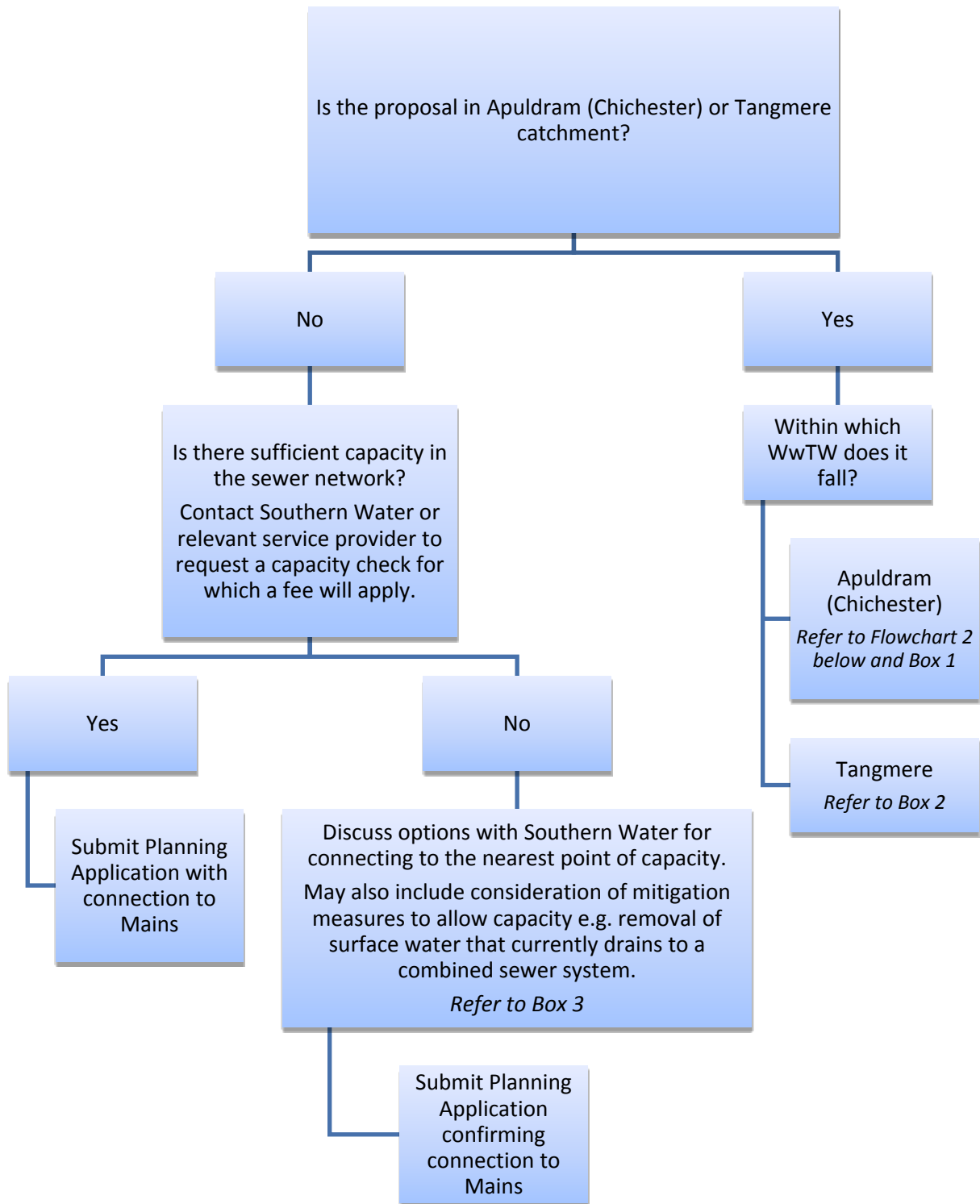
3.2 One aspect of all relevant development that needs to be considered is whether there is sufficient infrastructure available to convey, manage, treat and discharge the wastewater that will be produced. Most settlements are connected to the main foul sewer network, and in these locations development will be expected to connect to that network because it is the most sustainable solution.

3.3 However, there are parts of the Plan area where the wastewater infrastructure is constrained due to a range of environmental factors, or where further treatment infrastructure is required to be installed prior to capacity becoming available. When developing a site in these areas specific criteria may need to be considered.

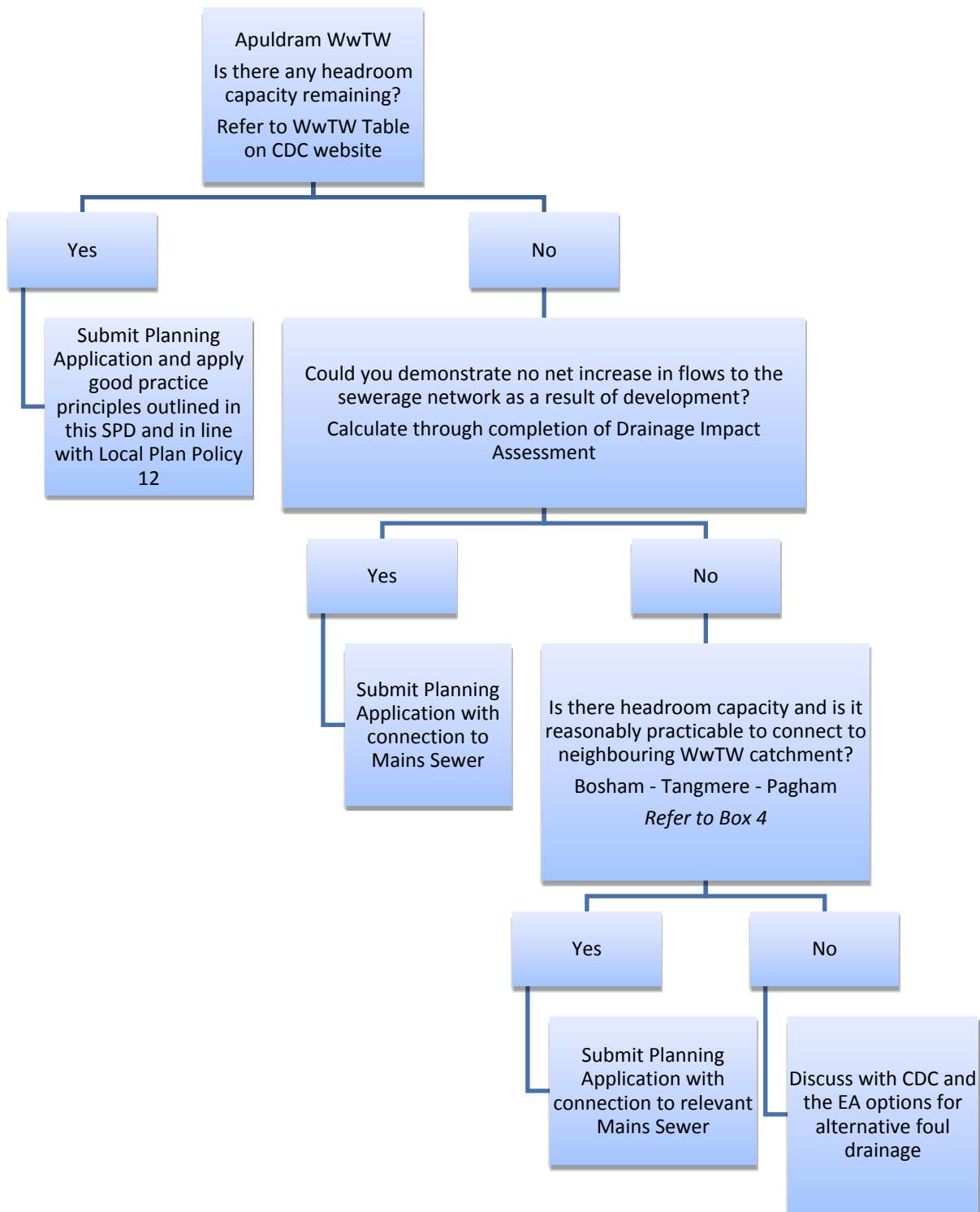
3.4 The Local Plan provides direction for the strategic development locations with regard to foul drainage, however, in order to support smaller scale development, the following flowcharts and supporting text will guide developers, consultants and decisions makers and help them ensure that the necessary infrastructure can be provided.

3.5 This SPD is designed to guide developers through most scenarios. If you find that your situation does not fit with this please contact a planning officer in the first instance.

Flowchart 1 - All Catchments



Flowchart 2: For developments in Apuldram (Chichester) WwTW ¹catchment



Please note that the Apuldram Wastewater Treatment Works catchment may also be referred to as the Chichester Wastewater Treatment catchment.

Supporting text for Flowcharts

How do I know which Wastewater Treatment Catchment I am in?

Appendix 1 provides a catchment map for the Plan area. If you are in doubt over which Wastewater Treatment Works (WwTW) catchment is closest to your site please contact Southern Water to confirm.

How do I know whether there is a capacity issue at the WwTW?

The Council is monitoring the available headroom at the individual WwTW in the Local Plan area, taking advice from the Environment Agency and Southern Water.

Reference should be made to the [Table\(s\)](#) which set out the estimated remaining headroom.

To ensure the delivery of the CLP and the numbers that it allocates to Parishes, the Council has committed headroom available at Apuldram (Chichester) WwTW as follows:

- development at Fishbourne Parish (50);
- development at Chichester City North (approximately 130); and
- Chichester City allocation (235).

With an average windfall delivery rate of approximately 100 dwellings per year in Chichester City, allowing development on greenfield sites to connect to Apuldram (Chichester) would erode the remaining headroom and prevent development from occurring on brownfield sites within existing settlements. Therefore, it is considered appropriate to refuse planning permission on greenfield sites, if intended to utilise the treatment facilities at Apuldram (Chichester), in favour of retaining the existing headroom for brownfield development.

Box 1: Apuldram (Chichester) WwTW catchment

The Apuldram (Chichester) WwTW serves the Chichester city area and neighbouring parishes of Apuldram, Donnington and Fishbourne. The WwTW discharges treated effluent in to Chichester Harbour. There are two issues that affect the WwTW. These are:

i. Environmental Permit

Due to the sensitive nature of the Harbour the current environmental permit limit at the WwTW has stringent limits. The discharge is already treated to exceptionally tight nitrogen levels, established under the Habitats Review of Consents process, and any further tightening of the standard would probably require further investment at the site.

ii. Infiltration

The Chichester catchment is affected by high levels of groundwater infiltration into the sewer network. When groundwater levels are high, water leaks in to the sewer system and causes the operation of the storm tank overflow. The purpose of the sewerage system and the treatment works is to convey and treat foul and combined flows, not groundwater flows that should be dealt with by land drainage. The flows into the WwTW are therefore greater than its hydraulic capacity leading to prolonged

use of the storm tank overflow when partially treated sewage, diluted by groundwater flows, are discharged into Chichester Harbour.

Following the installation of UV treatment on the storm overflow in 2014 some headroom capacity has been made available. However, it is recognised by the Environment Agency and Natural England that under current catchment conditions, any further connections beyond this headroom would have a significant impact on the nitrogen loads and weed growth in the Harbour.

For small scale development within the Apuldram (Chichester) WwTW catchment there are a number of steps to take as detailed in the two flowcharts.

How to demonstrate no net increase in flows to the WwTW

For greenfield development sites it is unlikely that it will be possible to be able to demonstrate no net increase in flows.

For brownfield sites it may be possible to offset the existing use against future use. It is recommended that planning applications are supported by a Drainage Impact Assessment which considers both the existing drainage arrangements and proposed uses for the site. Appendix 2 provides a template and more details.

Policy 12 sets out the minimum criteria that should be adopted for development within the Apuldram (Chichester) WwTW catchment. However, there may be further opportunities for additional mitigation measures, such as retrofitting water efficiency devices into existing development.

Case Study: The Heritage, Winden Avenue, Chichester (CC/10/02034/FUL)

The development site at The Heritage covers approximately 2.4 acres and consists of a mixture of 1970s general housing and sheltered residential accommodation for the elderly. It was proposed that the existing dwellings would be replaced with new mixed tenure dwellings around a small public square.

There is an existing piped drainage network that currently serves the existing buildings on the site which in turn outfalls into a public foul sewer located at "The Hornet".

It was proposed that foul drainage from the site would be restricted to the existing rates of discharge subject to the approval of Southern Water. Post development all surface water would be directed to adequate soakaway or infiltration drainage systems with only foul flows being discharged into the foul public sewer.

Whilst the foul discharge calculations showed a slight increase in foul flows this is easily mitigated by removing any surface water connections and the implementation of high water efficiency standards.

A planning condition was included on the permission to ensure that the development was designed to meet level 3 of the Code for Sustainable Homes (CSH) for water.

Box 2: Tangmere

The current remaining headroom at Tangmere WwTW has been committed through recent planning permissions. An investment scheme has been included in Southern Water's Business Plan to provide additional wastewater treatment capacity. This is based on the level of development set out in the Local Plan (3,000 new homes). The tighter permit limits and upgrade to the treatment works proposed by Southern Water will ensure that there is no deterioration in water quality status under the Water Framework Directive. Southern Water has also confirmed that it is technically feasible to provide wastewater treatment capacity for further future development.

Until the upgrade is complete additional development within the catchment will need to consider how waste water will be treated.

Box 3: What to do when there is no capacity in the public sewer network?

Even if existing capacity is insufficient, this may not be a constraint to development as it may be possible for additional capacity to be provided. Options should be discussed with Southern Water. The principle is that the development should connect to the local sewerage system at the nearest point where capacity exists. This may require off-site infrastructure.

Developers will need to obtain accurate specifications from Southern Water to provide additional capacity in the network. These details will need to be provided as part of the planning application. The provision of the additional capacity proposed will be secured by a planning condition which will require implementation prior to first occupation or, for larger sites, agreed phasing.

In addition to more formal improvements to the sewerage infrastructure, the inclusion of relevant mitigation measures in a planning application may also overcome constraints to capacity. These could include the removal of surface water that currently drains to a combined sewerage system or is misconnected to the foul sewerage system.

We would also recommend that consideration is given any recommendations in published Surface Water Management Plans in the area. Please contact West Sussex County Council as the Lead Local Flood Authority to discuss any opportunities.

Box 4: Is it reasonable to connect to a neighbouring public sewer network?

The distance at which it is reasonable for a development to connect to the public foul sewer will vary from site to site. The topography of the area, the size of the development, and other factors that affect how easy it will be for that development to connect to the public sewer, will all have a bearing on whether it is reasonable for a particular development to connect to the public sewer.

In general the following approach gives an initial ball park figure for the purposes of considering whether a connection to a public foul sewer may be reasonable:

“if the distance from the site to the public sewer is less than the number of properties x 30 metres then it is likely that it would be reasonable for that development to

connect to a public sewer”. This figure has been calculated by the Environment Agency following a number of environmental permitting decisions.

Other catchments:

Bosham and Thornham

The Bosham and Thornham WwTW discharge treated effluent into Chichester Harbour. Both of these works had their treatment processes updated in 2015. There are no environmental constraints in using the remaining headroom in the existing permit. This headroom is sufficient to meet the level of development set out in the adopted Local Plan. However, development above this level could require further tightening of the standards and further investment at the sites due to the environmental sensitivity of the receiving waters.

If you are proposing development in these catchments please check with Southern Water that capacity is available within the sewer network.

Sidlesham and Pagham

If you are proposing development in these catchments please check with Southern Water that capacity is available within the sewer network.

Lavant

The catchment for the Lavant WwTW does not fall within the Local Plan area and it is not expected that development would connect there.

North of the Local Plan Area

(Kirdford, Loxwood and Wisborough Green)

If you are proposing development in these catchments please check with Southern Water that capacity is available within the sewer network.

How to manage the impacts of high groundwater levels

We would recommend that in designing your developments you consider the use of plastic pipes for any foul and surface water drains or sewers connecting in to the public foul sewer.

5. Non-mains drainage

5.1 Proposals for development should be able to demonstrate no adverse impact on the water environment. Government guidance contained within the National Planning Practice Guidance (Water supply, wastewater and water quality – considerations for planning applications, paragraph 020) sets out a hierarchy of drainage options that must be considered and discounted in the following order:

1. Connection to the public sewer
2. Package sewage treatment plant (adopted in due course by the sewerage company or owned and operated under a new appointment or variation)
3. Septic Tank

- 5.2 Foul drainage from new developments should be connected to the public sewer and developers are advised to follow the flowcharts in order to achieve this. Where all other options have been exhausted and connection to the public sewer is not possible alternative non-mains drainage solutions may be considered.
- 5.3 Please note that the discharge of treated sewage effluent to either surface water or groundwater will either need to be registered as an exempt discharge activity or require a Permit from the Environment Agency under the Environment Permitting Regulations, 2010. A detailed assessment of information provided for the treatment for foul drainage will be undertaken as part of the permitting process.
- 5.4 This will include a thorough assessment of the justification for non mains drainage. The environmental acceptability of the discharge on the receiving waters will also be fully determined as part of the permitting process. An application for an Environmental Permit will be determined in accordance with Defra guidance and there are therefore no guarantees a Permit will be granted. A Permit will be refused if the environmental impacts are unacceptable.
- 5.5 We would advise that the applicant should begin pre-permitting discussions or submit an application for a permit at the earliest opportunity with the Environment Agency.

6 Surface Water Drainage

- 6.1 Built development can lead to increased surface water run-off; therefore new development is encouraged to incorporate mitigation techniques in its design, such as permeable surfaces and surface water drainage schemes.
- 6.2 Any proposed surface water drainage scheme must consider the use of sustainable drainage principles.

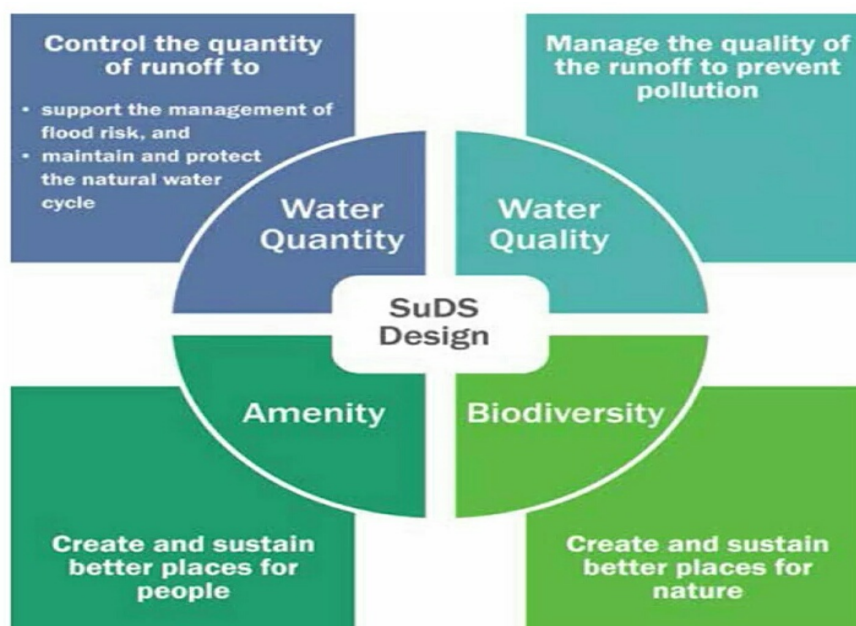


Figure 2.1 The four pillars of SuDS design

Figure 1 – The Four Pillars of SuDS Design (CIRIA SuDS Manual 2015)

- 6.3 The design should follow the hierarchy of preference for different types of surface water drainage systems as set out in Approved Document H of the Building Regulations and the Sustainable Drainage System (SuDS) Manual produced by CIRIA (Construction Industry Research and Information Association). This means that the developer must first consider the discharge of surface water into an infiltration device (eg. soakaway, basin, swale, permeable paving etc.). If this is not achievable then attenuated flows into a watercourse at an agreed run off rate would be considered. If no suitable watercourse is available, then attenuated flows into a surface water sewer at an agreed rate is the third option. Surface water must not in any development, be discharged into the foul sewer system.
- 6.4 Infiltration rates for soakage structures are to be based on percolation tests undertaken in the winter period and at the location and depth of the proposed structures. The percolation tests and design must be carried out in accordance with BRE 365, CIRIA R156 or a similar approved method and cater for the 1 in 10 year storm between the invert of the entry pipe to the soakaway, and the base of the structure. It must also have provision to ensure that there is capacity in the system to contain below ground level the 1 in 100 year event plus 30% on stored volumes, as an allowance for climate change. Adequate freeboard must be provided between the base of the soakaway structure and the highest recorded annual groundwater level identified in that location.
- 6.5 Any SuDS or soakaway design must include adequate groundwater monitoring data to determine the highest winter groundwater table in support of the design.
- 6.6 Residential developments in excess of five properties will require groundwater monitoring to be carried out between October and March inclusive, prior to application. The extent of monitoring required for smaller developments will be subject to agreement with the Council's Engineers.
- 6.7 Discharge to a watercourse or surface water sewer must be restricted to an agreed rate by means of a controlled outflow. Report number 124 from the Institute of Hydrology (see link to Centre for Ecology and Hydrology at Appendix 4), or similar documents, enable greenfield runoff rates to be calculated, and will be used to estimate the correct flow for the development area. Any storage designs must be submitted with groundwater monitoring data where applicable. Storage areas are preferred to be in an 'open' form i.e. ponds, etc., over the use of underground tanks. Any discharge from on-site treatment works will need to be included in the approved rate.
- 6.8 Culverting (piping) of a watercourse is not advised unless there is no other alternative. Culverting can lead to an unacceptable loss of habitat, reduced flood storage volume, reduced flow capacity, and increased difficulty in future maintenance. Where a culvert is proposed consent will also need to be given from the Lead Local Flood Authority (West Sussex County Council) or its

agent (Chichester District Council) for ordinary watercourses and from the Environment Agency for Main Rivers.

- 6.9 If access is required across a watercourse, then a single continuous spanning bridge is preferred, in order to maintain the capacity of the watercourse. Any structure should be as short as reasonably possible in terms of its length along the watercourse, in order to maintain good access for future maintenance.
- 7.0 SuDS need to be designed to remain safe and accessible for the life-time of the developments they serve, as well taking into account future amenity and maintenance requirements. Details should be provided which demonstrate the future management, funding and maintenance of the entire scheme.

7. Water Efficiency

- 7.1 Policy 40 of the Chichester Local Plan Key Policies sets out a standard for water use in new dwellings of 110 litres per person per day. This comprises 105 litres for internal water use and an allowance of 5 litres per person per day for external water use. Where Local Plan policies have more stringent standards, these will be enforced through the Building Regulations. Regulation 36(3) of the Building Regulations 2010 (as amended) applies. Approved Document G (2015 edition) sets out the regulatory requirements and guidance on achieving this option within the Regulations. Appendix A of Approved Document G provides a Water Efficiency Calculator which aids achievement of these standards.
- 7.2 The relevant Building Control Body must be informed that the optional 110 litre standard applies to the development due to planning policy requirements.
- 7.3 This option has been specified in Policy in order to reduce the amount of water being used to help mitigate for the impacts of climate change, protect water quality and make a more efficient use of limited resources.
- 7.4 The Council encourages developers who wish to voluntarily enter into an agreement for a higher standard of water efficiency than specified in Policy 40. We will work with developers to consider further voluntary measures to increase water efficiency from new developments. This may be as part of wider mitigation for increased wastewater flows, or to demonstrate an exemplary sustainable development.
- 7.5 A range of case studies which demonstrate how water efficiency measures can be integrated into new developments is available at www.water-efficient-buildings.org.uk

Appendix 1 – Wastewater Treatment Works Catchment Map

**** Circulated at the 14 January 2016 DPIIP meeting ****

These are available in colour on the Council's website but are not printed with this agenda.

Appendix 2 – Drainage Impact Assessment

Applicant Details
Name
Address
Telephone No.
Email

Please provide details of the proposed development below:

1. Existing Drainage System

Is the current use on the site served by a mains connection Y/N

If so, please provide details of the existing drainage arrangement for the site including identifying the flows to the public foul sewer.

2. Proposed Drainage Arrangement

Please provide details of the proposed drainage system for the new development including relevant mitigation measures to be implemented on the site including water efficiency measures.

Please identify the proposed loads to the public foul sewer from the new development.

3. Comparison of Flow to Public Foul Sewer pre- and post- development

Will your development result in a net increase in flow to the sewer network?

4. Further Mitigation

Where the above demonstrates a net increase in flows to the sewer network please consider further mitigation that may be possible to reduce the flows further.

If no further mitigation is possible please set out your proposal to manage foul drainage from the development.

Appendix 3 – Glossary of Terms

Wastewater services (foul water drainage)

Wastewater services can be separated into two elements: wastewater drainage (sewerage) and wastewater treatment.

Wastewater drainage (sewerage)

Wastewater drainage is the transportation of wastewater arising from individual homes, businesses and community buildings across intervening land to the wastewater treatment works for treatment. The sewerage system, which transports the flows, is made up of a network of underground sewers and associated infrastructure such as pumping stations.

Wastewater treatment

Once the flows arrive at the works, the wastewater is treated to remove pollutants. In the treatment of wastewater, strict environmental quality standards must be met, as set by the Environment Agency.

Wastewater services to new development

When development proposals come forward, the planning authority will look to satisfy itself that there is (a) sufficient sewerage capacity available to serve the site (i.e. the underground pipes and associated pumping stations have capacity to accommodate the increased flows without a significant increase in the risk of flooding), or sufficient capacity can be provided in parallel with the development in collaboration with the service provider and (b) sufficient wastewater treatment capacity is available in the catchments that are environmentally constrained, or additional capacity can be provided by the service provider in parallel with the development.

Environmental Permit

Under the Environmental Permitting Regulations 2010 any persons wishing to discharge polluting substances into the environment are required to apply for an environment permit. For wastewater treatment these permits restrict the quality of the discharge. Depending on the location, the permit will control different elements. Coastal discharges are limited by nitrogen and inland are limited by phosphorous.

Best Available Technology (BAT)

This is a term applied when regulating the discharge of polluting substances. It is the most advanced technology that is economically viable.

Public Foul Sewer

This is also referred to as the “mains” and is the sewer network owned and operated by the sewerage undertaker.

Appendix 4 - Links and Further Guidance

Centre for Ecology and Hydrology - <http://www.ceh.ac.uk/>

CIRIA - <http://www.ciria.org/>

Susdrain/CIRIA publications - <http://www.susdrain.org/resources/ciria-guidance.html>

Building Regulations Part G (Sanitation, Hot Water Safety and Water Efficiency) - <http://www.planningportal.gov.uk/buildingregulations/approveddocuments/partg/>

Building Regulations Approved Document G - <http://www.planningportal.gov.uk/buildingregulations/approveddocuments/partg/approved>

West Sussex County Council Surface Water Management Plan (Manhood Peninsula Final Report) - https://www.westsussex.gov.uk/media/5607/manhood_peninsula_swmp_final_report.pdf

Appendix 5 - Contact Details

Chichester District Council

For pre-application enquiries please contact a planning officer at dcplanning@chichester.gov.uk or telephone 01243 534734.

Environment Agency

For pre-planning enquiries please contact the Sustainable Places team at planningssd@environment-agency.gov.uk in the first instance.

For enquiries relating to an environmental permit please contact enquiries@environment-agency.gov.uk or telephone 03708 506 506.

Southern Water

For capacity checks and other enquiries for your proposed development please contact the Developer Services team at developerservices@southernwater.co.uk or telephone 0330 303 0119

Further information is also available at <https://www.southernwater.co.uk/developers-and-builders-overview>

West Sussex County Council

For enquiries please contact the Council at FRM@westsussex.gov.uk or telephone 01243 777100.