

## **DESIGNERS AND DEVELOPERS**

### **Submission Requirements**

#### **Flood Risk Assessment (FRA)**

A Flood Risk Assessment (FRA) is a report required in support of any planning application for any developable area of 1ha or more or for any developable area in Flood Zones 2 and 3. FRA identifies the level of flood risk to your property or site. This will enable you to identify the measures (if any) that are necessary to make your property or sites safer. It will also enable the LPA to assess to what extent that risk is a consideration when determining your planning application.

Further information on when you need to do an FRA and what to include can be found [HERE](#);

#### **Sustainable Drainage Systems (SuDS)**

Sustainable drainage is a way of mimicking natural drainage in a built environment. Instead of surface water being piped underground, water remains at the surface, where it is cleaned and stored, reducing flood risk and improving the quality of the water before it either soaks into the ground or discharges to a watercourse. This allows for greater biodiversity and amenity to be created.

South Gloucestershire Council encourages all new development and redevelopment that requires planning permission to use SuDS in order to reduce flood risk, improve water quality and present options for biodiversity and public amenity. This is consistent with existing national guidance and local planning policy.

Through the West of England (WoE) partnership a WoE Sustainable Drainage Developer Guide Section 1 has been produced which provides guidance on the requirements for the design and approval of sustainable drainage systems (SuDS) in the sub-region of the West of England and Somerset.

The guide can be found [here](#) and further information can be found on the South Gloucestershire Council website; Planning and Development page.

#### **Drainage Strategy**

A Surface Water Drainage Strategy is a report into how surface water, usually caused by rain, affects a development site and the surrounding area. It establishes how water behaves on a site, and determines the runoff rate, flow pathways and infiltration potential. It then investigates what effect development will have on these things, and outlines measures the developer can take so that runoff rates meet the requirements for the site set by the National Planning Policy Framework (NPPF), the Environment Agency (EA) or by local planning policy.

#### **Proof of Concept**

We encourage developers to prepare a proof of concept for dealing with the surface water drainage for all major developments as part of a pre-application. This approach may also be taken for minor developments as this could assist in producing an acceptable planning application.

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The Proof of Concept is to be based on a constraints plan that includes the existing natural flow paths and the proposed Blue Corridors across the site together with any discharge restrictions, maintenance restrictions or access issues that the relevant Flood Risk Management Authorities (FRMAs) and Local Planning Authority (LPA) may require.

A Proof of Concept can be used to inform the site masterplan, as it will confirm the developable area within the site. The benefits of producing a Proof of Concept is that it allows the developer to gain a clearer indication of any potential issues that may create significant concerns at an early stage and avoid any issues that may be very costly to deal with if they are not highlighted until a much later stage.

Further information on creating a Proof of Concept and what information to include can be found in the WoE Sustainable Drainage Developer Guide Section 1 [Here](#)

### Calculations

As part of the drainage strategy for developments we would expect the submission of drainage calculations in order to demonstrate that the proposed drainage system has been designed accordingly to accommodate the critical storm event.

Calculations for proposed site drainage systems will need to demonstrate that no flooding on site occurs during the 30 year storm event and that no flooding to building occurs during the 100 year plus additional rainfall percentage for climate change event (30% for residential and 20% for commercial).

We would request that drainage calculations are submitted as mdx files to enable auditing.

### WFD & Water Quality

The Water Framework Directive (WFD) is a European Law, which provides a framework for the protection of the water environment including rivers, lakes, estuaries and groundwater. In England and Wales, WFD is being implemented through using River Basin Management Plans.

The main aims of the WFD are to:

- Improve and protect inland and coastal waters
- Promote the sustainable use of water as a natural resource
- Create better habitats for wildlife that live in and around water
- Create a better quality of life for everyone

A significant problem is diffuse pollution<sup>1</sup>. SuDS can reduce this and therefore help meet WFD requirements. Drainage systems must be designed and constructed so surface water discharged does not adversely impact the water quality of receiving water bodies, both during construction and when operational.

If development interacts with a sensitive water body or is in a source protection zone a water quality risk assessment will be required to quantify the potential risk. The water quality risk assessment could form part of a wider WFD compliance assessment if required at the planning stage.

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<sup>1</sup> Diffuse Pollution is the release of potential pollutants from a range of activities that, individually, may have no effect on the water environment, but at the scale of catchment can have a significant effect

More information on the Water Framework Directive can be found [here](#) on the Environment Agency website.

### Fish & Fisheries

If your development proposals include the building of a new structure or the alteration or refurbishment of an existing one on a river, then you may need to install a fish pass or screen in accordance with the Salmon and Fresh Water Fisheries Act 1975, or an eel pass or screen in accordance with the Eels (England and Wales) Regulations 2009 Statutory Instrument No.3344.

The free passage of migratory fish is a key requirement of the Water Framework Directive, and is being used as an indicator for assessing whether water bodies are meeting Good Ecological Potential or Status.

Well-designed fish passes can help deliver objectives of the Water Framework Directive by;

- Ensuring that fish can move freely between the river and coastal waters in order to access breeding, nursery or feeding grounds.
- Allowing passage of other mobile aquatic species, such as invertebrates and plankton.

More information on this requirement can be found [here](#) on the Environment Agency website or by contacting the Fisheries and Biodiversity team at your local Environment Agency office.

### Climate Change & Urban Creep

Urban creep is the conversion of permeable surfaces to impermeable over time e.g. surfacing of front gardens to provide additional parking spaces, extensions to existing buildings, creation of large patio areas. Much research has been carried out in to the effect of urban creep and its effect on the drainage systems which cater for urban areas. It has been shown that, over the lifetime of a development, urban creep can increase impermeable areas by as much as 10%.

Whilst we have always considered the impermeable areas proposed on new development sites and accounted for climate change we have not, previously, accounted for urban creep. From 1 February 2015 an allowance for urban creep will now be required as part of the surface water drainage proposals for new development in South Gloucestershire. The requirement is shown below.

The consideration of urban creep should be assessed on a site by site basis but is limited to residential development only. The appropriate allowance for urban creep must be included in the design of the drainage system over the lifetime of the proposed development. The allowances set out below must be applied to the impermeable area within the property curtilage:

Residential development density, Dwellings per hectare	Change allowance % of impermeable area
≤ 25	10
30	8
35	6
45	4
≥ 50	2
Flats & apartments	0

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*Note: where the inclusion of the appropriate allowance would increase the total impermeable area to greater than 100%, 100% should be used as the maximum. "Curtilage" means area of land around a building or group of buildings which is for the private use of the occupants of the buildings.*

## **Climate Change**

The frequency and intensity of rainfall is predicted to increase as a result of climate change and an allowance for how this will affect the proposal will need to be factored into design. An allowance for climate change needs to be incorporated as part of the design, which means adding an extra amount to peak rainfall (20% for commercial development, 30% for residential).

Further information on the specific drainage requirements that the LLFA would require can be found in the following [document](#).

## **Consents**

### **Land Drainage Consent/Ordinary Watercourse Consent**

South Gloucestershire Council is responsible for consenting works that affect the flow of an ordinary watercourse. An ordinary watercourse is any passage through which water flows which is not part of a main river. This includes rivers, streams, ditches, drains, cuts, culverts, dykes, sluices and sewers (other than public sewers).

If you intend to undertake works which may affect the flow or storage of water, even temporarily, you need to apply to our Drainage & Flood Risk Management team for consent. Please contact our Drainage & Flood Risk Management team before you start your application as consent may not be required and we may be able to help you avoid unnecessary delays. Please email [LeadLocalFloodAuthority@southglos.gov.uk](mailto:LeadLocalFloodAuthority@southglos.gov.uk) or phone **01454 868000**.

Further information on Land Drainage Consents can also be found on our website [here](#).

### **Flood Defence Consent (Main Rivers)**

If you intend to carry out works in, over, under or adjacent to a main river then flood defence consent will need to be obtained from the Environment Agency (EA) who manage main rivers.

Main rivers are typically larger streams and rivers, but some are smaller watercourse of local significance. To identify whether your watercourse is a main river visit the EA's website and view their flood maps ([www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)).

### **Byelaw/Land Drainage Consent (Internal Drainage Board)**

If your proposals include discharging surface water into or within the Lower Severn Internal Drainage District or to obstruct or alter the flow of or erect, place or construct any structure or service in, over, under or within 8 metres of a watercourse within their district then consent from the Lower Severn Internal Drainage Board (LSIDB) will need to be sought.

More information can be found on their website here; [LS IDB](#) and to see if your site falls within the LSIDB drainage district then you can check the following map [within South Gloucestershire](#).

### **Environmental Permit (Foul Water disposal)**

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If there are no public foul systems in the vicinity of your development to connect into then you may require an Environmental Permit from the Environment Agency. This permit covers the use of either a septic tank or package treatment plant with a secondary form of treatment, cesspool/cesspit or any other non-standard systems (reed bed, trench arch system etc.) in order to dispose of foul sewage.

More information on permits for septic tanks can be found on the Environment Agency website [here](#)