

## **23 Water**

### **23.1 Introduction**

**23.1.1** Flood risk, water quality, human consumption, waste water, and the environment are all linked through the natural process of water circulation through the air, on the surface of the earth, and in the ground, known as the water cycle. Development and the built environment have significant impacts on the operation of the water cycle, and the availability and quality of water for use.

**23.1.2** Building Futures is a Hertfordshire guide to promoting sustainability in development. It includes a 'Water' module which sets out an approach to integrated water management (IWM) which takes account of the water cycle. IWM aims to ensure that the built environment is planned and designed to function in partnership with the natural water environment, so that they can both be sustainable. IWM has a number of sub-management processes, including minimising water consumption, using and reusing alternative sources of water, managing surface water drainage, and improving water quality.

Building Futures is an interactive website which can be accessed at:  
[www.hertslink.org/buildingfutures](http://www.hertslink.org/buildingfutures)  
[www.hertfordshire.gov.uk/microsites/building-futures/building-futures.aspx](http://www.hertfordshire.gov.uk/microsites/building-futures/building-futures.aspx)

### **23.2 Flood Risk**

**23.2.1** Water is an essential resource, but it can also be a hazard. The susceptibility of land to flooding is a material planning consideration. The Council will resist any development which has the potential to contribute to any form of flooding, including sewer flooding, and has adverse impacts on river channel stability or damage to wildlife habitats. The following policies encourage an integrated water management approach to new development.

**23.2.2** East Herts Council's Strategic Flood Risk Assessment (SFRA) contains maps showing flood risks from various sources, including river and surface water flood risk areas, and these represent a snapshot of flood risk at a given moment. The Environment Agency publishes regular mapping updates, and the latest evidence should be a material consideration in determination of planning applications.

The East Herts Strategic Flood Risk Assessment can be viewed on the Council's website at: [www.eastherts.gov.uk/sfra](http://www.eastherts.gov.uk/sfra) [www.eastherts.gov.uk/evidencebase](http://www.eastherts.gov.uk/evidencebase)

**23.2.3** In order to steer new development to areas with the lowest probability of flooding, the Sequential Test, and where necessary the Exception Test will be used. For development proposals of 1 hectare or greater, or on any site within Flood Zones 2, 3a or 3b, a Flood Risk Assessment (FRA) should be submitted with the planning

application. The Environment Agency's Standing Advice for applicants and their agents provides further explanation.

For more information on the Environment Agency's Standing Advice go to:  
[www.gov.uk/guidance/flood-risk-assessment-for-planning-applications](http://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications)

### **Policy WAT1 Flood Risk Management**

- I. The functional floodplain will be protected from inappropriate development and where possible developed flood plain should be returned to Greenfield status with an enhanced level of biodiversity.
- II. Development proposals should neither increase the likelihood or intensity of any form of flooding, nor increase the risk to people, property, crops or livestock from such events, both on site and to neighbouring land or further downstream.
- III. Development should take into account the impacts of climate change and should build in long term resilience against increased water levels. Therefore, appropriate distances and buffers between water courses and built development should be maintained in accordance with Environment Agency guidelines.
- IV. In order to steer new development to areas with the lowest probability of flooding, the Sequential Test will be used. In exceptional circumstances, if developments are proposed which are required to pass the NPPF Exceptions Test, they will need to address flood resilient design and emergency planning by demonstrating that:
  - (a) The development will remain safe and operational under flood conditions;
  - (b) A strategy of either safe evacuation and/or safely remaining in the building is followed under flood conditions;
  - (c) Key services will continue to be provided under flood conditions; and
  - (d) Buildings are designed for quick recovery following a flood.

### **23.3 Water Quality and the Water Environment**

**23.3.1** The abstraction and discharge of water used in the built environment can have a detrimental impact on the quality of the local waters, which in turn can impact biodiversity and ecological processes affecting wildlife.

**23.3.2** East Herts Council will continue to work with the Environment Agency and other partners to address the objectives of the Water Framework Directive through

the relevant actions identified in the Thames River Basin Management Plan and River Catchment Management Plans for individual watercourses across the District in order to continuously improve their water quality. Wherever possible, an undeveloped buffer strip, with no new structures, roads or pathways, should be left alongside all watercourses, to maximise the ecological benefits of waterways.

For more information and for the latest updates on the status of rivers in East Herts, see the Environment Agency's website at:

[www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency)

**23.3.3** To help prevent surface water contamination following heavy rainfall, effective drainage strategies will be required as part of an integrated water management strategy. Such strategies will encompass a range of measures addressed in policies in the District Plan, covering drainage, water infrastructure and water quality.

**23.3.4** Source Protection Zones (SPZs) exist around abstraction points for potable (drinking) water. In Source Protection Zones (SPZs), development proposals for any of the uses identified in Policy WAT2 will be required to submit an assessment of potential impacts and any mitigation measures required.

#### **Policy WAT2 Source Protection Zones**

In Source Protection Zones (SPZs), development proposals for any of the following uses will be required to submit an assessment of potential impacts and any mitigation measures required:

- incinerators
- waste transfer stations
- vehicle dismantlers
- metal recycling
- waste treatment facilities and all other non-landfill waste management activities
- cemeteries
- discharge of foul sewage to ground
- cess pools
- waste sites and underground storage of hazardous substances (i.e. petrol stations)
- new trade effluent discharges or stores
- storage of manure, slurry, sewage sludge and other farm waste.

A map of Source Protection Zones is available on the Environment Agency's website at: [maps.environment-agency.gov.uk](http://maps.environment-agency.gov.uk)

**23.3.5** As well as providing essential water resources, the water environment, in particular the district's waterways, provide opportunities for recreation and transport,

and are important wildlife habitats. The waterways provide green corridors which contribute to the physical character of the district.

### **Policy WAT3 Water Quality and the Water Environment**

- I. Development proposals will be required to preserve ~~and~~ **or** enhance the water environment, ensuring improvements in surface water quality and the ecological value of watercourses and their margins and the protection of groundwater.
- II. Unless there is clear justification for not doing so, an undeveloped buffer strip at least 8 metres wide should be maintained alongside all main rivers, and an appropriate buffer strip should be maintained at ordinary watercourses. Any development proposals should include an appropriate management scheme for buffer strips.
- III. Opportunities for removal of culverts, river restoration and naturalisation should be considered as part of any development adjacent to a watercourse. Additional culverting and development of river corridors will be resisted.

### **23.4 Efficient Use of Water Resources**

**23.4.1** East Hertfordshire lies within one of the most water-stressed areas of the East of England, which is itself one of the most water-stressed regions of the country. Abstraction for human consumption can impact on the water environment, for example contributing to low river levels. Installation of water efficient fixtures and fittings is a cost-effective way to reduce water consumption at new development. Dual-flush toilets and water butts for garden use are two examples, although there are many other simple and low-cost measures which are potentially available to developers.

**23.4.2** Between 2007 and 2012 the average resident of East Herts consumed 160 litres/day. This compares with the national average of 150 litres/day over the same period. Projections for population growth in East Herts and the wider south-east will mean that over the plan period, new strategic water resources will be required.

**23.4.3** East Hertfordshire forms part of the water supply grid encompassing Hertfordshire, Bedfordshire, and parts of Essex, managed by a number of water supply companies. Water supply is the subject of a national policy debate about the configuration of the water industry and consumer pricing, water metering, leakage reduction and many other issues in this nationally regulated industry. Water supply companies are required to demonstrate how they will meet these national standards in their Water Resources Management Plans, which are published every five years.

**23.4.4** East Herts will continue to explore the role that local policy can play in contributing to the ultimate goal of water neutrality. Cost-effective measures such as the requirement for water efficient fixtures and fittings at new development can make a significant contribution over the next twenty years. The Council will continue to work with partners to encourage the sustainable and responsible abstraction of

water. These measures can have significant environmental benefits for the district's rivers. Assessments of residential water consumption should be submitted using the Government's Water Efficiency Calculator for New Dwellings or other appropriate method by prior agreement with the Council.

For more information on the Water Efficiency Calculator for New Dwellings go to: [www.gov.uk](http://www.gov.uk)

**23.4.5** Building Regulations require that water consumption in new dwellings should not exceed 125 litres per person per day. However, the Regulations allow for a lower standard of 110 litres per person per day to be implemented in water stressed areas. Given that the Environment Agency has identified this area as being particularly water stressed, it is considered appropriate to apply this standard.

#### **Policy WAT4 Efficient Use of Water Resources**

Development must minimise the use of mains water by:

- (a) Incorporating water saving measures and equipment;
- (b) Incorporating the recycling of grey water and utilising natural filtration measures where possible;
- (c) Designing residential development so that mains water consumption will meet a target of 110 litres or less per head per day.

### **23.5 Sustainable Drainage**

**23.5.1** Sustainable Urban Drainage systems (SUDS) mimic natural drainage from a site and enable rainwater to run back into natural systems, rather than the storm water drainage network. SUDS also treat run-off water to remove pollutants. This can have multiple benefits:

1. increased recharge of groundwater and aquifers
2. reduced runoff into the sewer system (resulting in reduced energy and chemical costs of treatment)
3. improved groundwater quality via natural infiltration
4. reduced degradation of chalk stream habitats

**23.5.2** Depending on the type of drainage techniques used, there can be flood reduction benefits, pollution control benefits, and landscape and wildlife benefits. When selecting appropriate drainage techniques, it is important to try to maximise the number of benefits, and to prioritise the most sustainable approaches. These can be set out in the form of a hierarchy. The SUDS hierarchy contained within the Council's SFRA is shown below:

**Table 23.1 Sustainable Urban Drainage Hierarchy**

SUDs Technique	Flood Reduction	Pollution Reduction	Landscape and Wildlife Benefit
<b>Most Sustainable</b>			
Living Roofs	√	√	√
Basins and Ponds <ul style="list-style-type: none"> <li>• Constructed wetlands</li> <li>• Balancing ponds</li> <li>• Detention basins</li> <li>• Retention ponds</li> </ul>	√	√	√
Filter Strips and Swales	√	√	√
Infiltration Devices <ul style="list-style-type: none"> <li>• Soakaways</li> <li>• Infiltration trenches and basins</li> </ul>	√	√	√
Permeable Surfaces and Filter Drains <ul style="list-style-type: none"> <li>• Gravelled surfaces</li> <li>• Solid paving blocks</li> <li>• Porous paviers</li> </ul>	√	√	
Tanked Systems <ul style="list-style-type: none"> <li>• Over-sized pipes/tanks</li> <li>• Storm cells</li> </ul>	√		
<b>Least Sustainable</b>			

**23.5.3** The sustainable drainage hierarchy is intended to ensure that all practical and reasonable measures are taken to manage surface water higher up in the hierarchy and that the amount of surface water managed at the bottom of the hierarchy is minimised. The hierarchy is also relevant to paving of front gardens, where the cumulative impact of impermeable paving on run-off rates may be considerable.

**23.5.4** There are many practical issues of design, installation and maintenance in the implementation of effective SUDS. The Flood and Water Management Act 2010 requires upper tier authorities to set up a Sustainable Urban Drainage System (SUDS) Approving Body or ‘SAB’ to:

1. Evaluate and approve SUDS proposals for new development or redevelopment where construction work would have drainage implications, and
2. Adopt and maintain SUDS on schemes that meet the evaluation criteria set out in the National SUDS Standards.

**23.5.5** Drainage aspects of policy have become the responsibility of the County Council. However, East Herts still has an involvement in drainage management and the environmental and amenity aspects of drainage schemes. Hertfordshire County Council has produced a SUDs Design Guide For Hertfordshire (March 2015) which sets out the relevant requirements. It is possible that some developments (especially smaller sites) could be offered to East Herts District Council for adoption.

For more information on Hertfordshire County Council's approach as SUDs Approval Body go to:

[www.hertfordshire.gov.uk/services/envplan/water/floods/surfacewaterdrainage/](http://www.hertfordshire.gov.uk/services/envplan/water/floods/surfacewaterdrainage/)

### **Policy WAT5 Sustainable Drainage**

- I. Development must utilise the most sustainable forms of drainage systems in accordance with the SUDS hierarchy, unless there are practical engineering reasons for not doing so.
- II. Development should aim to achieve Greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible.
- III. Drainage should be designed and implemented in ways that deliver other policy objectives of this Plan, including water use efficiency and quality, biodiversity, amenity and recreation. The provision of balancing ponds as part of an area of public open space for recreation or wildlife should be designed to ensure the safety of other users of the space. Where SUDs are provided as part of a development, applicants should detail how it will be maintained in the long term.
- IV. Where practicable, SUDS should be designed to ensure the sustainable drainage networks have the additional capacity required to cope with infrequent adverse weather conditions and therefore reduce flood risk.

### **23.6 Wastewater Infrastructure**

**23.6.1** Effective wastewater infrastructure is fundamental to sustainable urban life and therefore investment and expansion are required. There are a number of Sewage Treatment Works (STWs) in the district, notably at Bishop's Stortford, Buntingford, and at Rye Meads in the far south of the district. Bishop's Stortford and

Rye Meads STWs serve not only East Herts but also settlements within the catchment but outside the district.

**23.6.2** Like water supply, waste water treatment is a nationally regulated industry and water quality standards for treatment discharge are balanced with other regulatory issues including consumer water pricing through the water companies' Asset Management Plans, which are updated every five years.

**23.6.3** Rye Meads STW lies within a highly sensitive ecological environment, adjacent to a Site of Special Scientific Interest, Ramsar Site and Special Area of Conservation. East Herts Council will work with the waste water treatment company and other Local Planning Authorities in the Rye Meads catchment area, in accordance with the Duty to Co-operate, to ensure that adequate capacity can be found at Rye Meads, or that alternative waste water treatment options can be identified.

**23.6.4** East Herts Council will seek to ensure that there is adequate wastewater **network** infrastructure to serve all new developments. Developers will be required to demonstrate that there is adequate infrastructure capacity both on and off the site to serve the development and that it would not lead to adverse amenity impacts for existing or future users. In some circumstances this may make it necessary for developers to carry out appropriate appraisals and reports to ascertain whether the proposed development will lead to overloading of existing water and wastewater infrastructure. Where there is a capacity constraint and no improvements are programmed by the waste water treatment company, East Herts will require the developer to provide appropriate improvements that must be completed prior to occupation of the development. Unless special circumstances apply, this requirement is unlikely to apply to minor and householder development.

**23.6.5** East Herts Council will work with Stansted Airport, the waste water treatment company, and the Environment Agency to ensure that any fuel discharges from the airport are safely treated and do not compromise the quality of the District's water courses or groundwater.

### **Policy WAT6 Wastewater Infrastructure**

- I. Development proposals must ensure that adequate wastewater infrastructure capacity is available in ~~tandem~~ with advance of the occupation of development.
- II. Upgrade and expansion of existing, or provision of new, waste water treatment infrastructure will be supported provided that:
  - a) It utilises best available techniques, and provided that
  - b) It does not have an adverse effect on the integrity of Special Protection Areas, Ramsar Sites and Special Areas of Conservation either alone or in combination with other projects and plans, and

- c) A strategy to meet relevant national and European environmental standards can be demonstrated.