Water Management and Water Infrastructure

Policy 36

Water Management

Flood Risk and Sustainable Drainage Systems

All development proposals will be required to consider the effect of the proposed development on flood risk, both on-site and off-site, commensurate with the scale and impact of the development and taking into account the predicted impacts of climate change for the lifetime of the proposal. This includes completion of a Flood Risk Assessment (FRA) where appropriate. Development will not be permitted unless:

a. in the functional floodplain (flood zone 3b), as identified in the Strategic FRA, it is water compatible or essential infrastructure;

b. in flood zones 2 and 3a it passes the Sequential Test, and if necessary the Exceptions Test, as required by national policy; and

c. it can be proven through a FRA that the development, including the access, will be safe, without increasing or exacerbating flood risk elsewhere, any residual risk can be safely managed and where possible will reduce flood risk overall[(129)].

Regarding Surface Water Flood Risk:

d. for major developments [(130)] the management of water must be an intrinsic part of the overall development;

e. on all new development there is no net increase in surface water runoff for the lifetime of the development. Where greenfield sites are to be developed, the runoff rates must not exceed and where possible should reduce the existing greenfield runoff rates[(131)]. On previously developed land, as close as practicable to a greenfield rate must be achieved. In exceptional cases where the developer can satisfactorily demonstrate that greenfield run-off rates are unachievable, a betterment rate (which should be a minimum of 50% of the existing site run-off rate) will be agreed with the council[(132)]. Surface water run-off must be managed at source wherever possible and disposed of in the following order:

    1. To an infiltration or soak away system.

    2. To a watercourse open or closed.

    3. To a surface water sewer.

    4. To a combined sewer.

129 In flood zone 1 an FRA will only be required for sites over one hectare, where it has been identified as being within in a critical drainage area or where proposed development or a change of use to a more vulnerable class may be subject to other sources of flooding.
130 See Glossary for definition.
131 Existing greenfield run off rates for different areas in the county are set out in the Surface Water Management Plan 2011.
132 In line with the County Durham Surface Water Management Plan 2011 and the Durham County Council Sustainable Drainage Systems (SuDS) Adoption Guide 2016 or any subsequent iterations

Disposal to combined sewers should be the last resort once all other methods have been clearly explored and evidenced;

f. part of the development site is set aside for surface water management and uses measures that do not increase flood risk elsewhere. These measures will supplement green infrastructure networks, thereby contributing to mitigation of climate change, water quality and flooding as an alternative to, or complementary to, hard engineering;

g. where sites may be susceptible to over land flood flows (as shown in the Strategic Flood Risk Assessment) or lie within a Surface Water Risk Area (as shown in the Surface Water Management Plan) then developers must put adequate protection in place;

h. the development incorporates a Sustainable Drainage System (SuDS) to manage surface water drainage. Where SuDS are provided arrangements must be put in place for their whole life management and maintenance. Where appropriate SuDS should contribute to the provision of Green Infrastructure and biodiversity net gains; and

i. all new development with culverts running through the site must seek to de-culvert watercourses for flood risk management and environmental benefit, unless it can be clearly demonstrated that this is not practical.

Where improvement works are required to ensure that the drainage infrastructure has sufficient capacity to support proposed new development, developer contributions will be required in accordance with Policy 26 (Developer Contributions).

Water Quality

The quantity and quality of surface and groundwater bodies shall be protected and where possible enhanced. All commercial, industrial and major residential development must demonstrate control of the quality of surface water runoff during construction and for the lifetime of the development. New development will be required to incorporate appropriate water pollution control measures.

Development adjacent to, over or in a watercourse should consider opportunities to improve the river environment and water quality.

Development which could adversely affect the quality or quantity of surface or groundwater, flow of groundwater or ability to abstract water will not be permitted unless it can be demonstrated that no adverse impact would occur or mitigation could be put in place to minimise this impact.

Policy 37

Water Infrastructure

Disposal of Foul Water

In the consideration of development proposals, the hierarchy of drainage options that must be considered and discounted for foul water are (in the following order):

1. Connection to the public sewer;

2. Package sewage treatment plant (which can be offered to the Sewerage Undertaker for adoption[133];

3. Septic Tank (which must drain into an appropriate soak away and not discharge directly into a watercourse).

Applications involving the use of non-mains methods of drainage (including Septic Tanks/Cess Pits) will not be permitted in areas where public sewerage exists.

Sewage and Waste Water Infrastructure

Proposals for new or extensions/improvements to existing water treatment, waste water, sludge or sewage treatment works will be permitted, unless the adverse impact of development outweighs the need for greater capacity and other benefits.

Flood Defence Infrastructure

Proposals for additional flood defences will be permitted only where it can be demonstrated that the proposal represents the most sustainable response to a particular threat and demonstrates long term maintenance can be achieved.

Proposals which seek to mitigate flooding, create natural flood plains or seek to enhance and/or expand flood plains in appropriate locations will be permitted.

5.387 The water environment is vital for its contribution to the county's biodiversity and is important to the quality of life of people both within and outside the county. Development must be within environmental limits and carefully consider how the water environment will be affected. How wastewater can be safely disposed of, the protection of vulnerable aquifers (including Environment Agency designated Drinking Water Protected Areas (DrWPAs) and Groundwater Source Protection Zones [134]and the prevention of increased flooding are key considerations in developing sustainable communities.

5.388 The Environment Agency is the regulator for licensing abstractions, pollution control and the quality of the water environment, whilst Northumbrian Water Limited (NWL) is responsible for water services and sewerage. The council has been working closely with the Environment Agency and NWL, and we will continue to collaborate with them and other infrastructure providers to inform future decision making.

5.389 The council as the Lead Local Flood Authority (LLFA), is responsible for developing, maintaining and applying a strategy for local flood risk management and for maintaining a register of flood risk assets. We also have lead responsibility for managing the risk of flooding from surface water, groundwater and all watercourses that are not classified as a main river (which are the responsibility of the Environment Agency).

5.390 As the LLFA, we are a statutory consultee for surface water flood risk on all sites and ensure that the proposed drainage system applies the principles of the surface water management train and meets the National Standards for Sustainable Drainage 2011[135] covering design, construction, operation and maintenance. The council will consider adopting SuDS on major developments providing

133 Package plants must comply with the Sewers for Adoption standards in order for them to be adopted. https://www.nwl.co.uk/business/dev-sewerage-services.aspx
134 EA mapping can be accessed via https://magic.defra.gov.uk/MagicMap.aspx
135 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/82421/suds-consult-annexa-national-standards-111221.pdf

they meet specific design and maintenance criteria, as set out in the Durham County Council Sustainable Drainage Systems (SuDS) Adoption Guide, which also provides guidance on applying the surface water management train[136].

5.391 The Water Cycle Study (WCS)[137] was carried out to ensure that the growth envisaged for the county can be supported and is not hindered by water infrastructure and resources. This has informed the Infrastructure Delivery Plan (IDP) as well as allocations in this Plan. Water shortage is a great concern in relation to climate change, however the WCS identifies that due to the presence of Kielder Reservoir, Northumbrian Water is confident that "both of the Company's water resource zones have a supply surplus across the full planning period to 2060".

5.392 The Strategic Flood Risk Assessment (SFRA)[138]provides an overview of the areas susceptible to flooding and the risk posed by flooding from rivers, the North Sea, groundwater and surface water runoff. The SFRA assessed the risk at the time it was prepared, as well as the increased risk from a number of factors including a changing climate and the construction of new development. It is also necessary to take into account updated Environment Agency flood maps which may include changes to flood zones 2 and 3, which have occurred since the SFRA was completed together with up to date climate change allowances.

5.393 The Surface Water Management Plan (SWMP)[139] contains more detail and informs and interacts with the Plan by giving action plans and priorities for each area, in line with our proactive approach to flood risk and climate change. It identifies Surface Water Risk Areas (SWRAs) and has an action plan for these and other issues. Additional attenuation measures are required within these areas including decreasing the volume of surface water entering the combined sewer system by managing this on-site or disposing to a watercourse where flood risk would not be increased. The removal of surface water from combined sewers has two benefits - the reduction in downstream sewer flooding risk and the reduction in unnecessary treatment of surface water at sewage treatment works (thereby increasing available capacity). The majority of SWRAs are in the east of the county or around the urban conurbations. Critical Drainage Areas have also been identified and development in these areas will need careful consideration including a Flood Risk Assessment where appropriate.

5.394 It is acknowledged that over the life time of the Plan, groundwater levels in some areas will increase, due to wetter climates and changes to mine water pumping regimes. The Coal Authority in partnership with the Environment Agency has developed a groundwater screening tool which seeks to raise awareness of a variety of mining and groundwater constraints which could affect development and to influence the type of SuDS which may be used, to ensure they are appropriate and effective, both now and in the future. This screening tool has been introduced to provide developers and competent authorities with a better understanding of the drainage implications they will need to consider within new development proposals, and if necessary to seek pre-consultation advice with the Coal Authority and/or the Environment Agency. The screening tool is currently part of a North East pilot and is being tested by Local Authorities and Northumbrian Water Group which will be reviewed in 2019. The mapping and guidance document can be found on the Coal Authority webpage. [140]

5.395 The River Tyne, Wear and Tees Catchment Partnerships were established under Defra's Catchment based approach in 2014. The partnerships include representatives from a range of organisations, including the Environment Agency, Local Authorities, Northumbrian Water, the Rivers Trusts as well as a number of other stakeholders. Their purpose is to support flood management, environmental enhancement and water quality improvement at a catchment scale. This allows partners

136 https://durhamcc.objective.co.uk/portal/planning/cdpev/
137 http://durhamcc-consult.limehouse.co.uk/file/4958669
138 http://durhamcc-consult.limehouse.co.uk/file/4958652
139 https://durhamcc.objective.co.uk/portal/planning/cdpev/
140 http://mapapps2.bgs.ac.uk/coalauthority/home.html

to work collaboratively across administrative boundaries, avoid competing for resources and maximise the benefits of projects being delivered on the ground. This approach is welcomed and encouraged when looking at wider flood risk implications and mitigation opportunities. More information about the role of the Partnerships and current project delivery can be found on their respective websites. (141)

Flood Risk

5.396 In County Durham flood risk is mainly fluvial, from rivers and watercourses, although we are seeing increasing events of surface and ground water flooding due to climate change and development pressure. The SFRA assesses all sources of flood risk including fluvial, surface water, ground water, sewer and highway drainage flooding. National policy is clear that planning policy should minimise vulnerability and provide resilience to impacts arising from climate change and avoid inappropriate development in areas at risk of flooding, which is primarily done through sequential/exception testing in line with National Planning Practice Guidance. Where there is the possibility of any flood risk to a proposed development site, or the potential for flood risk impact on other sites, a site-specific Flood Risk Assessment will be required, once it has passed the sequential and exception test. The sequential test can also be used to inform site layout by locating the most vulnerable elements of a development in the lowest risk areas as well as building in resilience into a site's design for example through raised floor levels or dry pedestrian access routes.

Sustainable Drainage Systems (SuDS)

5.397 Green infrastructure can be an important flood management and flood mitigation mechanism as well as providing benefits for communities, wildlife, biodiversity, ecological networks and helping to reduce the impact of climate change. Similarly SuDS can make a contribution to the green infrastructure provided on a site. If surface water is removed from combined sewers it increases their capacity, therefore reducing the risk of sewer flooding downstream and reducing the unnecessary treatment of surface water at sewage treatment works (thereby increasing available capacity). This is particularly important to development proposed in key SWRAs, as identified in the SWMP.

5.398 SuDS and green infrastructure can also prevent pollution by filtration of surface water run-off thereby contributing to improvements in the quality of watercourses in line with legislation thereby contributing to the Water Framework Directive objectives. The Northumbria River Basin Management Plan prepared by the Environment Agency is the key over-arching source of information on the water environment including the condition of water bodies and measures to help meet Water Framework Directive objectives. (142) Developers will be encouraged to explore how SuDS within their scheme can achieve reductions to wider catchment flood risk issues where possible. This reduction in flow rate is termed by the industry as 'Betterment'.

5.399 SuDS developments in the south east of the county may fall within the aerodrome safeguarding zone as detailed in Policy 29 (Safeguarded Areas). Proposals within this zone will need to consider the risk of potential bird strikes and choose appropriate SuDS techniques which will minimise any risks.

Water Quality

5.400 It is important to consider the protection of water resources from pollution particularly when assessing any development that has the potential to adversely affect water quality either above or below ground, directly or cumulatively. The Magnesian Limestone Principal Aquifer underlies the eastern part of the county and is a source of drinking water for both NWL and Hartlepool Water Company. It is therefore vital that this resource is protected. Pollution can affect groundwater for

141 http://www.tynecatchment.org , http://www.wear-rivers-trust.org.uk/ and http://teesriverstrust.org/.

142 Emerging evidence from the Woodland Trust and Manchester University states that the planting of trees or woods in the right locations can bring about improvements in water quality of 90% and can also help alleviate certain types of flooding.

many decades and may be impossible to remove completely, even after the source of the pollution has been cleared up. The NPPF requires pollution prevention in new and existing development. Water quality assessments will be required for any physical modifications to a watercourse or any development which could adversely affect water bodies. Where appropriate, management plans will be required to demonstrate sufficient pollution prevention measures, including maintenance arrangements for agreed measures, have been incorporated into the development proposals. This can include commercial enterprises which discharge trade effluent or where potentially polluting materials are to be used/stored either during redevelopment works or as part of the new land use i.e. use of tanks to store chemicals or fuels.

5.401 Where development is in close proximity to a watercourse then opportunities to improve the river environment and water quality should be explored. This could include naturalising watercourse channels, improving the biodiversity and ecological connectivity of watercourses, safeguarding and enlarging river buffers with appropriate habitat or mitigating diffuse agricultural and urban pollution.

Sewage and Waste Water Infrastructure

5.402 NWL is the supplier of water and sewerage services for the county, looking after around 136 sewage treatment works. Changes in population distribution and economic growth over the Plan period will increase demand on sewage treatment and the disposal of waste water. We have been working closely with NWL and the Environment Agency to ensure there is adequate and timely provision of treatment works in areas identified for growth in the Plan. This is a key part of the IDP and the detail is contained in the WCS. In addition to these roles, once 'Sewers for Adoption 8' comes into effect in 2019 regulatory Water and Sewerage Companies, in addition to the LLFA, will be able to adopt SuDS going forward. The LLFA will remain a statutory consultee in relation to surface water flood risk.

5.403 Priority should be given, where possible, to accommodate any additional flows within existing sewage treatment works. Where new sewage treatment works are required there will need to be a balance between meeting higher discharge standards, the environmental benefits of the development and the protection of the existing environment and amenity.

5.404 Non-mains drainage systems, such as package treatment plants and septic tanks should only be employed in non-sewered areas. Where they are required, careful consideration of their siting and design will be required to ensure that there is no adverse impact upon ground water, water quality or existing ecosystems. It is advised that any new development proposing the use of a non-mains foul drainage system should be supported by a Foul Drainage Assessment (FDA1) as a minimum. The form provides the information required to assess the development's impact, however in certain instances further justification and/or assessment may be required to ensure no detriment to the environment or quality of receiving water bodies.

5.405 Policy 32 (Amenity and Pollution) highlights that sensitive receptors, such as dwelling houses, should not be built in close proximity to existing sewage treatment works as this is likely to lead to amenity issues arising. A buffer has been provided in the policy to overcome these issues.

5.406 Increased demand for sewage treatment and higher water quality standards will mean that in the future there will be additional sludge (a by-product of the process) to be disposed of. Proposals for the recovery of sludge to produce beneficial end products will be encouraged where they can be located without significant adverse effects on local communities or the environment.

5.407 Whilst this policy is applicable to all forms of development, a policy addressing the specific requirements for Minerals and Waste proposals (the disposal of sewage sludge) will be contained in the future Minerals and Waste Policies and Allocations Development Plan Document. The policy approach to the Durham Coast is addressed separately in Policy 38 (Durham Heritage Coast and Wider Coastal Zone).

Works Carried Out To or Near a Watercourse

5.408 Any works carried out to, or near, a watercourse, either open or closed, may require Water Course Consent from the LLFA. Works within eight metres of a main river will require a Flood Risk Activities Permit from the Environment Agency.

5.409 Any culverting, de-culverting or works affecting the flow of a watercourse require the prior written consent of either the Environment Agency (for main rivers), or the council (for ordinary watercourses) under the terms of the Land Drainage/Water Resources Act 1991 and Flood and Water Management Act 2010. These regulatory bodies seek to avoid culverting and their consent for such works will not normally be granted except as a means of access.

How will Policy 36 (Water Management) be monitored?

Indicator:

1. Number of water bodies which show Water Framework Directive improvement as a direct consequence of new development.
2. Percentage of major developments which include SuDS.

Target:

1. An increasing trend.
2. 100%.

How will the Policy 37 (Water Infrastructure) be monitored?

Indicator:

1. Number of major developments permitted where connection to a mains sewer is not possible and an alternative solution has not been secured.

Target:

1. Zero.