

October 2016

Paper 5: Flooding

Gloucester City Plan

Background Topic Paper for Policy Development

Introduction

Gloucester's location at the confluence of the River Severn and the Severn Estuary and at the foothills of the Cotswolds has always meant that it has suffered flood events. The storm of 2007 was a sharp reminder of this when heavy rainfall in Gloucestershire resulted in small streams flowing off the Cotswolds coming out of channel in the urban area of Gloucester. This was followed a few days later by the Severn rising and coming out of bank. On a very local level small scale surface water floods contributed to the problem all of which resulted in infrastructure and properties being inundated. Given predictions that Climate Change will lead to more and heavier storms and sea level rise then flooding will continue to be a key issue for Gloucester. New development, its design and location, will potentially have either a positive or negative impact upon flood risk. We need to ensure that the planning process only improves matters.

Nationally

The National Planning Policy Framework (NPPF) commits us to consider and plan around flood risk. This is defined as a combination of the probability and the potential consequences of flooding from all sources.

NPPF at paragraph 100 states that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere. Local Plans should be supported by a Strategic Flood Risk Assessment and develop policies to manage flood risk from all sources, taking account of advice from the Environment Agency and other relevant flood risk management bodies, such as the Lead Local Flood Authorities and Internal Drainage Boards. Local Plans should apply a sequential, risk-based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk, taking account of the impacts of climate change, by:

- applying the Sequential Test;
- if necessary, applying the Exception Test;
- safeguarding land from development that is required for current and future flood management;
- using opportunities offered by new development to reduce the causes and impacts of flooding; and
- where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to facilitate the relocation of development, including housing, to more sustainable locations.

Paragraphs 101 to 108 offer more detailed advice on the application of the foregoing policy principles.

National Planning Policy Guidance (NPPG)

The NPPG elaborates on the NPPF by confirming that local planning authorities have to (a) assess flood risk; (b) avoid flood risk in the plan-making and decision-taking process;

and (c) manage and mitigate flood risk. It requires local planning authorities to take flood risk into account in the preparation of local plans.

The Joint Core Strategy

The Joint Core Strategy (JCS) authorities have discharged their responsibilities set out in accordance with national policy and have directed developable areas of strategic allocations away from high risk (Zones 2 and 3) flood areas. JCS Policy INF3 sets out the three authorities' approach to flood risk management. Specifically, development proposals must avoid areas at risk of flooding and not increase the level of risk to the safety of occupiers of the site, the local community or the wider environment either on the site or elsewhere. It also commits the three authorities to minimise the risk of flooding. SUDS is given a high profile.

Policy INF3: Flood Risk Management

1. Development proposals must avoid areas at risk of flooding, in accordance with a risk-based sequential approach. Proposals must not increase the level of risk to the safety of occupiers of a site, the local community or the wider environment either on the site or elsewhere. For sites of strategic scale, the cumulative impact of the proposed development on flood risk in relation to existing settlements, communities or allocated sites must be assessed and effectively mitigated.
2. Minimising the risk of flooding and providing resilience to flooding, taking into account climate change, will be achieved by:
 - I. Requiring new development to where possible, contribute to a reduction in existing flood risk
 - II. Applying a sequential test for assessment of applications for development giving priority to land in Flood Zone 1, and, if no suitable land can be found in Flood Zone 1, applying the exception test
 - III. Requiring new development that could cause or exacerbate flooding to be subject to a flood risk assessment which conforms to national policy and incorporates the latest available modelling and historic data and information and guidance contained in the authorities' Strategic Flood Risk Assessments and Supplementary Planning Documents, in order to demonstrate it will be safe, without increasing flood risk elsewhere
 - IV. Requiring new development to incorporate suitable Sustainable Drainage Systems (SuDS) where appropriate in the view of the local authority to manage surface water drainage: to avoid any increase in discharge into the public sewer system; to ensure that flood risk is not increased on-site or elsewhere; and to protect the quality of the receiving watercourse and groundwater. Where possible, the authorities will promote the retrofitting of SuDs and encourage development proposals to reduce the overall flood risk through the design and layout of schemes which enhance natural forms of drainage. Developers will be required to fully fund such mitigation measures for the expected lifetime of the development including adequate provision for on-going maintenance.

- V. Working with key partners, including the Environment Agency and Gloucestershire County Council, to ensure that any risk of flooding from development proposals is appropriately mitigated and the natural environment is protected in all new development.

Local Issues and Objectives

Since April 2015 the County Council as Local Lead Flood Authority is a statutory consultee with regard to the management of surface water runoff on major planning applications. To aid developers and planning authorities they have published 'Gloucestershire SuDS Design & Maintenance Guide' November 2015, along with standing advice and FRA guidance.

With regard to flooding associated with the river Severn, the EA have undertaken detailed hydraulic modelling of over 40 scenarios to assess their impact on water levels in and around Gloucester. This has taken account of tide and high river levels. Scenarios ranged from bypass channels to the raising of traditional flood defences. The scenarios were then tested against an economic model to assess viability.

The initial assessment suggests that raising of defences at certain sites around Gloucester, in particular around Westgate will deliver the most benefit.

With regard to fluvial flooding from small rivers and streams along with surface water, the City council continues to implement schemes to better flood management and to increase resilience.

Objectives of the future taken from Gloucester City Vision

- A City where people feel safe and happy in their community
- A flourishing economy and City Centre which meets the needs of our residents, business and visitors
- A healthy City with opportunities available to all
- A vibrant evening economy
- A City which improves through regeneration and development

Responses to Previous Local Plan Consultations

Below is a selection of responses from residents and key stakeholders to previous City Plan consultations.

City Plan Scope Consultation Responses

"Stop building on flood plains"

City Plan Part 1 – Context and Key Development Principles Consultation Document Responses

"Whilst we welcome the 'Development Principles' that have been set out, we consider greater focus should be made on the environment to ensure the resultant Plan is truly sustainable. We believe the following themes should be included (or given greater emphasis) within the 'Development Principles' when taking the Plan forward: Flood Risk Flood risk is a key constraint and its consideration should be a prominent 'development

principle' for the City Plan. We do not consider its relative importance is reflected in the consultation document. We have provided much guidance in this respect for the emerging Joint Core Strategy (JCS) and this advice remains pertinent for this consultation”

“The incorporation of SuDS should be a key 'development principle'. The SuDS approach can play a key role in delivering water quality improvements and Water Framework Directive (WFD) objectives. It involves using a range of techniques including soakaways, infiltration trenches, permeable pavements, grassed swales, ponds, wetlands and green roofs to reduce flood risk by attenuating the rate and quantity of surface water run-off from a site.”

“The Woodland Trust believes that tree planting, even in constricted urban areas, is especially important because of the unique ability of woodland to deliver across a wide range of benefits. These include for both landscape and biodiversity (helping habitats become more robust to adapt to climate change, buffering and aesthetic public realm benefits), for quality of life and climate change (amenity & recreation, public health, flood amelioration, urban cooling, green infrastructure) and for the local economy (timber, woodfuel and 'fruiting' markets).”

“Throughout the UK winter is predicted to be wetter and summers drier and there is also a predicted increase in the frequency of very heavy rainfall. Trees can reduce the likelihood of surface water flooding, when rain water overwhelms the local drainage system, by regulating the rate at which rainfall reaches the ground and contributes to run off. Slowing the flow increases the possibility of infiltration and the ability of engineered drains to take away any excess water. This is particularly the case with large crowned trees. Research by the University of Manchester has shown that increasing tree cover in urban areas by 10 % reduces surface water run-off by almost 6%. (Using green infrastructure to alleviate flood risk, Sustainable Cities - www.sustainablecities.org.uk/water/surface-water/using-gi/).”

City Plan Part 2 – Places, Sites, City Centre Strategy Consultation Responses

“Concern regarding location of site within the floodplain. The flood defences of The Quay (not recognised by the Environment Agency as formal defences) are at the previously predicted level of 1/100 year flood and need to be raised to the currently predicted level.”

General concerns over flooding from new development were also raised on specific sites. It is important to note that any planning application for the development of these sites would need to demonstrate how surface water will be managed. This work would need to satisfy the requirements of the Environment Agency and Severn Trent.

Policy

The JCS, NPPF & NPPG cover most policy concerns for Gloucester and all development will be expected to be in accordance with these policy statements.

Furthermore on all planning applications involving surface water discharge, development will be expected to be in accordance with the latest version of Gloucestershire County Council's SuDS Design and Maintenance Guide.

Given the unique position of Gloucester at the interface of tidal and fluvial events in the Severn, any development within the Severn Floodplain will be expected to increase flood flow across this area.

The Environment Agency Briefing Note: *Reducing flood risk from the River Severn in Gloucester and the surrounding area – Initial Assessment* (March 2016) seeks to protect properties predominantly within Westgate Ward by increasing flood defences along the Eastern Parting of the Severn. Development that contributes to the delivery of the Environment Agency plans outlined in the Briefing Note, and any subsequent amendments, will generally be supported.

All 23 sites proposed for allocation in the Gloucester City Plan January – February 2017 consultation have been subject to SFRA Level 1 scoping. This work was carried out by external consultants in consultation with the Environment Agency. Any new sites that come forward through the consultation, as well as the existing sites that are proposed for allocation when the plan is submitted, will be subject to SFRA Level 2.

Policy F7: Flooding

All development should not be subject to flood or lead to increased flooding elsewhere. Drainage schemes should broadly be in accordance with the Local Lead Flood Authority Gloucestershire SuDs Design and Maintenance Guide and Gloucester City Council Sustainable Drainage Design and Adoption Guide, and any subsequent amendments.

Large Scale Development should deal with its own water and provide betterment of 20% on the calculated greenfield run off rate.

Large scale development within flood zone 2 and 3 in Lower Westgate will be expected to contribute to new flood defences along the eastern parting of the River Severn.

The effective management of water is important in the development of sustainable communities. It reduces the impact flooding may have on the community, maintains the quality and quantity of our water environment, and can help to enhance local amenity value and biodiversity through the provision of green space.

The Strategic Flood Risk Assessments (SFRAs) for the JCS area identify fluvial flood risks from the River Severn and local tributaries, in addition to increased problems from surface water runoff. Site specific flood risk assessments (FRAs) should be submitted alongside development proposals, consistent with national policy and JCS Policy INF4. Developers should use the SFRAs as a starting point for understanding the level of flood risk posed to a particular site. FRAs should be proportionate to the level of flood risk, scale, nature and location of the proposed development, as identified within the SFRAs.

The City Council seeks to avoid flood risk. It recognizes also that there is a need to reduce the impact of flooding when it does occur. Proposals should have specific regard to the design principles outlined in the SFRAs, including taking a sequential approach to site layout, ensuring safe access is available for the lifetime of the development and is supported by flood warning and suitable evacuation plans. Surface water runoff can

contribute to flood risk and new development will be required to incorporate Sustainable Drainage Systems (SuDS) where appropriate to manage runoff and to ensure that flood risk is not increased elsewhere and to improve the quality of the receiving watercourse and groundwater.

All development, including any proposals relating to the existing building stock, should contribute to the management of surface water runoff through the use of SuDS. Consideration should be given to the appropriate application of SuDS, in relation to the scale of development and site characteristics. Proposals should recognize the multi-functional role of SuDS and demonstrate that provision has been made for their long term maintenance and management.

Objectives Met

- Objective 6 of JCS.
- Key Principles 1, 8, 11, 13 of City Plan Part 1.

The Evidence Base

- National Planning Policy Framework.
- National Planning Policy Guidance.
- Joint Core Strategy.
- Strategic Flood Risk Assessment Level 1, *Halcrow on behalf of JCS Authorities*, December 2007.
- Strategic Flood Risk Assessment Level 2, *Halcrow on behalf of JCS Authorities*, October 2011.
- Strategic Flood Risk Assessment Level 2 – Additional Assessment, *Capita Symonds on behalf of JCS Authorities*, January 2013.
- Pitt Review (2008).
- Sustainable Drainage a Design and Adoption Guide, *Gloucester City Council*, July 2013.
- Gloucestershire SuDS Design & Maintenance Guide, *Gloucestershire County Council*, November 2015.
- Briefing Note - Reducing flood risk from the River Severn in Gloucester and the surrounding area – Initial Assessment, *Environment Agency*, March 2016.
- Scoping (SFRA Level 1) of City Plan proposed allocations – *Atkins Global* 2017.

Monitoring

The City Plan will align with the monitoring framework within the JCS. More detailed Indicators and targets will be developed in consultation with the City Council Neighbourhood Management team and others following the end of the City Plan consultation 16th January to 27th February 2017.