

the **Birmingham** plan  
birmingham's local development framework



## Sustainable management of urban rivers and floodplains

Supplementary Planning Document

june 2007

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# 1 Introduction

The purpose of this Supplementary Planning Document is to provide guidance for development located within river corridors in Birmingham. It builds upon policies contained within the Birmingham Unitary Development Plan 2005 and provides additional proposals that will encourage land use planning to be better linked with water management, access and visual amenity.

For too long the rivers in Birmingham have been neglected. Water quality is poor, the flow of rivers has been increased through culverting and straightening of channels to promote sites for development, developments have 'turned their backs' on the river, habitats have been lost, the ecology of the river has deteriorated and the general amenity value of the majority of the river is at a minimum.

River and watercourses should be seen as assets in contributing to local character, wildlife and ecology, built heritage, open space and recreation and enhancing the setting of development.

Redevelopment provides the opportunity to remediate sites and ensure the water environment is enhanced. Therefore, through careful planning and the promotion of a more sustainable approach to developing within and near to the river corridor, it is intended that the results of years of neglect can be mitigated and the rivers improved for both present and future generations to enjoy.

*River Cole meander, The Dingles.*



## 1.1 Sustainable Management of Urban Rivers and Floodplains (SMURF)

This plan is based on the catchment of the rivers in Birmingham which are typical examples of urban rivers - polluted, heavily modified by culverting, straightening, re-routing and with concrete banks and few natural features.

It builds upon work originally presented as part of an EU funded project (SMURF) which took the River Tame as its specific sample and model. The policies contained in this document are intended to apply to all river and brook courses in the City.

### 1.1.1 Problems of the River Catchment in Birmingham

Despite some improvements in recent years, water quality and quantity are major problems throughout the river catchment.

- Parts of the river system are in a poor ecological state.
- Parts of the river system are inaccessible over much of their length and are of poor amenity value to the local community.
- Fly tipping of domestic and commercial waste.
- Beneath Birmingham, groundwater is rising, bringing with it contaminants that have previously remained in the ground.
- Wildlife habitats in the rivers and at the banksides have been badly damaged.
- During storms pollution flushes into the river, causing a loss of oxygen and killing fish.
- There are also increasing development pressures on bank-side locations which will need to be managed in a sustainable way for both the community and river ecology.

### **1.1.2 Aim of the Document**

The main aim of the SPD is to develop and disseminate a new methodology for improved land use planning and water management in urban floodplains consistent with the objectives of the Water Framework Directive (WFD). (Please see section 2.1 for more information on the WFD.)

## **1.2 The Planning Guidance**

This SPD provides Planning Guidance for development within river corridors.

The focus of the guidance is all the river 'corridors' within Birmingham. It covers the main areas of nearby open space and tributaries flowing in to the rivers.

This SPD aims to tackle the problems of the rivers by encouraging sustainable development and ensuring that all new development makes a contribution to the sustainable development, consistent with the objectives of the Water Framework Directive, thereby helping resolve any current problems.

Policies within the guidance (Chapter 7) have been informed by the public consultation carried out as part of the SMURF project as well as examples of current best practice from various specialists within the City Council and surrounding local authorities (see Chapter 4). Links with existing planning policy are discussed in Chapter 3 and 4.

## **1.3 Status of the Guidance**

This document was adopted as a Supplementary Planning Document by the Cabinet of Birmingham City Council on 25th June 2007, under the provision of the Planning and Compulsory Purchase Act 2004.

## 2 Policy context

This Guidance has been prepared within the context of European Union (EU), National, Regional and Local Planning Guidance in particular, the following documents:

### 2.1 Water Framework Directive

The Water Framework Directive (2000) is a major piece legislation, which aims to rationalise EU water legislation to achieve an integrated system of water protection, improvement and sustainable use.

The WFD objectives include:

- Preventing deterioration in water status.
- Restoring surface waters to good ecological and chemical status by 2015.
- Reducing pollution from priority substances and phasing out certain priority hazardous substances.
- Achieving objectives for EU protected areas.
- Contributing to mitigating the efforts of floods and droughts.
- Preventing and/or limiting pollution input into groundwater.
- Balancing abstraction and recharge.

The Directive came into force on 22 December 2000. This was transposed into legislation by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 which came into force on 2 January 2004. However, implementation of the Directive is a major, long-term task.

The Regulations identify nine River Basin Districts (RBDs) in England and Wales (Birmingham falls within the Humber RBD). For each RBD, River Basin Management Plans (RBMPs) are then required to be developed and implemented. Draft

RBMPs are to be published for consultation in 2008. The Environment Agency is the sole competent authority charged with the Directive's implementation in England and Wales.

This SPD is consistent with 'Initial Advice to Planning Authorities' issued in February 2006'

### 2.2 Planning Policy Guidance Notes (PPGs) and Planning Policy Statements (PPSs)

The UK Government's planning guidance notes set out the policy framework within which local planning authorities are required to draw up their development plans and take decisions on individual applications to secure these objectives. These are currently being replaced by Planning Policy Statements.

Particular reference should be made to:

- Planning Policy Statement 1:  
Creating Sustainable Communities.
- Planning Policy Guidance 2:  
Green Belts.
- Planning Policy Statement 3: Housing.
- Planning Policy Guidance 4:  
Industrial, Commercial and Small Firms.
- Planning Policy Statement 9:  
Biodiversity and Geological Conservation.
- Planning Policy Statement 10:  
Planning for Sustainable Waste Management.
- Planning Policy Statement 11:  
Regional Spatial Strategies.
- Planning Policy Statement 12:  
Local Development Frameworks.
- Planning Policy Guidance 15:  
Planning and the Historic Environment.



- Planning Policy Guidance 16: Archaeology and Planning.
- Planning Policy Guidance 17: Planning for Open Space, Sport and Recreation.
- Planning Policy Statement 23: Planning and Pollution Control.
- Planning Policy Statement 25: Development and Flood Risk.

### 2.3 PPS 25 Development and Flood Risk

This policy statement aims to:

- Ensure flood risk is taken into account at all stages of the planning process.
- Avoid inappropriate development in areas at risk of flooding.
- Direct development away from high risk areas.

It requires:

- Flood risk assessments at the regional, strategic and site level.
- Sustainability appraisals, land allocations and development control policies in the Local Development Framework to be informed by the flood risk assessments.
- A sequential test that matches types of development to degrees of flood risk.
- Partnership working with the Environmental Agency.

It provides for:

- Reducing existing flood risk to communities for example by recreating and safeguarding functional flood plain and washlands.
- Reducing flood risk to new development through location, layout and design, including the application of sustainable urban drainage systems, sustainable defences and increased flood storage.

- An exception test that allows for development that provides wider sustainability benefits to the community that outweigh flood risk.

### 2.4 West Midlands Regional Spatial Strategy (WMRSS)

The WMRSS guides the preparation of local authority development plans and local transport plans. It sets out policies on a range of issues including those for enhancing the environment.

Policy QE9 - The Water Environment, provides guidance on water quality, protection of wetland, species and habitats, consideration of SUDS, maintaining and enhancing river corridors in order to help with regeneration.

### 2.5 The Birmingham Plan 2005

Particular reference should be made to Chapter 3 (Environment) which includes advice on design of new development, good urban design principles and guidance for sustainable development, flood risk, water and drainage, waste treatment and disposal, open space, Green Belt, nature conservation, landfill sites and energy consumption.

References should also be made to the chapters on Environment (Chapter 3), which includes historic buildings, conservation areas and archaeological remains. Economy (Chapter 4), Housing (Chapter 5), City-wide (Chapter 8) as well as each of the relevant Constituency Chapters for individual river and brook courses.

### 2.6 Supplementary Planning Guidance

The Local Development Framework will eventually replace the UDP but a number of Supplementary Planning Guidance documents remain in place:

- The Nature Conservation Strategy for Birmingham (March 1997).  
*Sets out comprehensive advice and direction regarding Birmingham's nature conservation resource and practical guidelines for action.*

- Places for All (November 2001).  
*Provides general design guidance for all types of development throughout the City.*
- Conservation Strategy (1999).
- Archaeology Strategy (2003).
- Places for Living (March 2001).  
*Provides guidance for creating sustainable, inspiring and quality residential developments.*
- Canalside Development in Birmingham - Draft Design guidelines (1996).

## 2.7 Strategic Environmental Assessment

The European Directive 2001/42/EC on the Assessment of Certain Plans and Programmes on the Environment (known as the Strategic Environmental Assessment Directive) requires the 'environmental assessment' of a wide range of plans and programmes, including among others those for town and country planning and land-use.

The Directive's main area of emphasis in the 'environmental assessment' procedure are on: collecting and presenting baseline environmental information; predicting environmental effects during plan preparation; identifying strategic alternatives; consulting the public and relevant authorities as part of the assessment process; and monitoring the effects of the plan during its implementation.

The Directive applies to plans and programmes, and modifications to them, whose formal preparation begins after 21 July 2004. However it will also apply to plans and programmes whose formal preparation began before that date, if they have not been adopted (or be in a process to adopt) by 21 July 2006.

*River Tame: Example of engineered channel under the M6.*



## 3 Other policies and initiatives in the guidance area

### 3.1 River Basin Management Plans (RBMPs)

LEAPs are to be replaced by River Basin Management Plans (RBMPs), which will be based on River Basin Districts (RBDs), as required by the WFD. The current plan of potential RBD boundaries is shown in Figure 2. However, it should be noted that these boundaries are not confirmed and are just provided to give an indication of the basins that might be used. Birmingham and the River Tame fall within the Humber RBD. The first RBMPs are to be produced in 2008 by the EA.

### 3.2 City Council Cycling Strategy

The Cycling Strategy sets targets for increasing cycle use generally and suggests more detailed targets for the implementation of a cycle friendly infrastructure in Birmingham. (The City Council has launched a Cycling and Walking Map of Birmingham, which include cycling routes near water courses).

*River Tame next to the One Stop shopping centre in Perry Barr.*



## 4 Consultation

### 4.1 Stakeholder and Public Consultation

The SPD was produced following extensive public consultation to define the local requirements/objectives for the future management of the river system and demonstrate the approach used as part of the EU funded SMURF Project.

An extensive programme of consultation was developed and carried out by representatives of the University of Birmingham and an independent facilitator. This has been carried out in order to inform the policies within this guidance.

The initial programme of consultation for the SMURF project involved interviews with stakeholder groups. This helped set up phase II of the programme, which consisted of the establishment of three community groups of up to 20 individuals who were able to offer, insight into different community interests (eg. parents, children, residents groups, religious groups etc.) Community groups were established in three contrasting areas: Perry Barr (an example of an open section of the river Tame through parkland); Castle Vale (examples of open culverts and underground culverts); and Northfield (River Rea and Worcester & Birmingham Canal and an area that has experienced recent flooding).

A series of workshops including an initial site visit/briefing day were then carried out with each of these groups looking at contrasting case study areas. These included: contrasting types of urban area (residential, industrial, rural etc.); contrasting types of river (natural and contained); areas where the river has been regenerated; and areas where flooding has been an issue.

The results of this process included the establishment of a common community perspective for sustainable urban river management, provision of input into the development of the complementary GIS tool and feedback on the issues and barriers to engaging the community and businesses in a project such as this. These results have in turn helped inform the policies within this guidance and the information contained within the GIS tool.

*Public consultation in Cannon Hill Park.*





## 5 The rivers in Birmingham

### 5.1 History of the Rivers in Birmingham

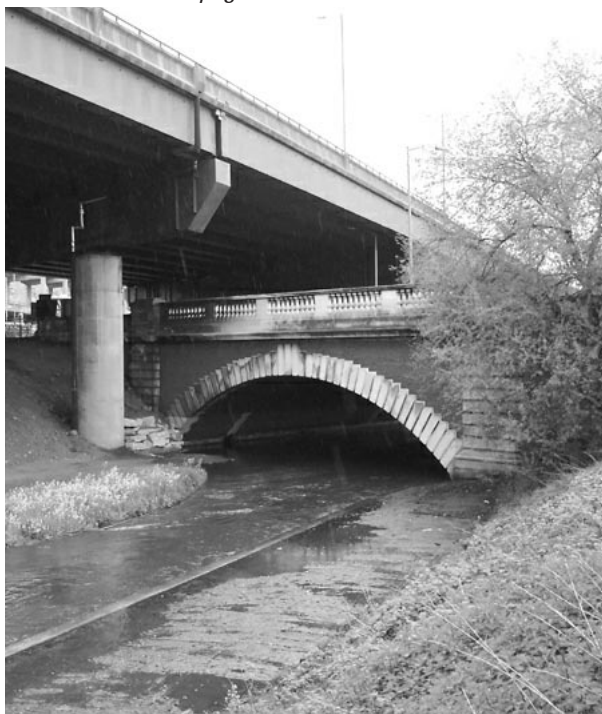
The water of the Tame, Rea and Cole and that of their tributaries, has been used for domestic purposes and as a source of fish and waterfowl for thousands of years. The oldest man-made object from Birmingham, a stone axe, was found near the River Rea at Saltley. From the Middle Ages onwards the water of the three rivers was also used to fill moats and fishponds and for industrial purposes, including powering watermills via leats and millpools. Moats such as those at Perry Hall and Gannow Green were constructed around houses in the 13th century, as status symbols. Small settlements such as Stechford developed near river crossings in the Middle Ages.

From at least the 16th century the River Rea in Digbeth and Deritend was harnessed for leather tanning and textile processing but the town of Birmingham itself originated on higher ground nearby rather than alongside the flood-prone river. There were watermills along all three rivers and their tributaries by the 11th century. They were first constructed to grind grain and some, like Hamstead and Edgbaston, remained corn mills throughout their working life. Others were later used for fulling cloth, making paper, sharpening metal tools, rolling and slitting metal and as iron forges and furnaces, and additional mills were constructed for industrial purposes from the outset. Bricks and tiles were made from local clay in the Cole Valley, at Hamstead on the Tame and elsewhere. Despite this industrial development, the surroundings of Birmingham's rivers outside the city centre were predominantly rural until the end of the 19th century, including agricultural land and estates around country houses. Although none of them has ever been navigable, the valleys of the three rivers form natural routeways and are occupied by roads, canals and railways.

### 5.2 The Historic Environment

The historic environment of the Tame, Rea and Cole corridors consists of a wide range of archaeological remains, historic buildings and historic landscapes, some of which are designated as Scheduled Ancient Monuments, listed buildings, Registered Parks or Conservation Areas. They include finds of prehistoric stone tools; prehistoric burnt mounds; medieval moats; ridge and furrow; several watermills, some with surviving buildings, others with foundations, some with pools, dams and watercouses; icehouses; river and canal bridges; brickworks; and industrial buildings. Many other sites, as yet undiscovered or unrecognised, are likely to survive. Sediments in the valleys of the three rivers and their tributaries also contain evidence of past environmental conditions. The historic environment is a non-renewable resource which is vulnerable to damage or destruction by inappropriate development or other works. Sustainable development therefore includes safeguarding the historic environment.

*River Tame under Spaghetti Junction.*



### 5.3 River Tame Character

The River Tame is the largest tributary of the River Trent. The River Tame rises on the watershed between the River Severn and River Trent in the area of the Midlands known as the Black Country.

The Tame has two main sources, the Wolverhampton and Oldbury arms, which join at Bescot. From here, the river flows eastwards to the north of Birmingham City Centre. The River Rea joins the River Tame close to the Gravelly Hill M6 motorway junction. Continuing eastwards out of the West Midlands conurbation the river then turns north after its confluence with the rivers Blythe, Cole and Bourne and flows into a series of purification lakes at Lea Marston. After the lakes, the Tame continues to flow northwards, entering the River Trent just east of Alrewas. The Trent then flows north, finally flowing into the sea via the Humber Estuary.

### 5.4 River Rea Character

The River Rea rises in the Waseley Hills to the south of Birmingham. It is largely natural in character until it becomes a hard engineered channel at Cannon Hill Park, the exception being at the former MG Rover car plant and associated works at Longbridge where a length of the river flows underground. The reach from Cannon Hill Park to the Ring Road at Highgate, is largely in a deep stone-lined channel behind back gardens and open space.

The journey taken by the River Rea as it meanders through Birmingham, reflects the history of the communities that sprang up throughout the centuries along its banks. Remains of some of the many mills along the River Rea can still be found today giving a glimpse of the City's industrial past. Both the archaeological and ecological landscape of the river has been changed by all of these communities from the Bronze Age to the present day.

The River Rea is now almost totally hidden from sight after it enters the city centre at Highgate. The river channel is entirely man-made through the city centre all the way to its confluence with the River Tame in Nechells.

The heavily urbanised nature of the river means that base flows are depleted in dry weather conditions but with rapid response to rainfall as a result of the sewered run-off. This results in very rapid increase in flows at time of storms.

*River Rea, Cannon Hill Park.*



### 5.5 River Cole Character

The River Cole is about 25 miles long. It rises on the lower slopes at Forhill, one of the south-western ramparts of the Birmingham plateau to enter the River Blythe below Coleshill. Its source is very near the main watershed of Midland England: tributaries are few and very short except in the lower reaches, outside Yardley, so the Cole is only a small stream. Average gradient of the central reaches is 10<sup>1</sup>/<sub>2</sub> feet in a mile. There is a fast run-off from the drift-covered clay which makes up its catchment area, and heavy rain produces sudden floods: in the absence of replenishing side-streams these subside as quickly as they rise. The Cole is normally shallow, except where weirs maintain an artificial depth.

The River Cole flows out of and back into Solihull on the eastern side of Birmingham. Most of the green corridor remains intact with a wide floodplain remaining in places although often with ground levels raised by fill material. Factory estates and some housing developments encroach upon the floodplain here and there.

In common with all urban rivers the Cole is frequently crossed by highways and relies heavily on sewered flows from its catchment area. Unlike the River Rea it is rarely in a hard engineered channel although the earth channel has been affected by realignment and reprofiling.





*River Tame development turning their backs to the development.*

## 5.6 Geology, Flooding and Contamination

### 5.6.1 Geology

The catchment of the river in Birmingham is underlain by Carboniferous and Triassic geology. The most westerly part of the catchment is underlain by Carboniferous Coal Measures strata that are classified as a 'Minor Aquifer' for water resources purposes by the Environment Agency since they can generally only support locally important abstractions. Further to the east there is an outcrop of Triassic Sherwood Sandstone underlying the catchment. This stratum is classified as a 'Major Aquifer' by the Environment Agency due to its permeable nature which can yield significant volumes of water. Historic abstraction from this stratum led to a fall in groundwater levels which have now recovered due to a decline in groundwater abstraction. It should also be noted that contamination can potentially move freely in this permeable stratum. The remainder of the catchment, to the east of Birmingham City Centre, is underlain by Triassic Mercia Mudstone. Due to its low permeability this stratum can generally only support very minor abstractions and consequently it is classified as a 'Non Aquifer' by the Environment Agency (See Appendix 4 showing geology).

### 5.6.2 Flooding

In addition, since 1 July 2004, Flood Zones have replaced the Indicative Floodplain Map as the EA's flooding constraints map for planning purposes. Flood Zones are split into three different risk zones - from Zone 1 (lowest probability of flooding being less than 0.1%) to Zone 3a (high probability of flooding being greater than 1%) and Zone 3b (the functional floodplain being greater than 5%) and show where the water would go if there were no flood defences.

The EA have produced Standing Advice for Flood Zones that will be used by the local authority in conjunction with the Flood Zones to determine flood risk associated with smaller developments. These Zones will be regularly updated. Further information is available from the EA website.

Developers are required to submit a flood risk assessment for all proposals on sites of 1 hectare or more in Zone 1 and for all new development in the other Zones.

### 5.6.3 Contamination

Intense urbanisation and industrialisation have meant in many instances the quality of the water is poor. The amount of previously unregulated industry has left a legacy of contaminated land. These effects may be detected many miles downstream.

*River Tame: Flood defence in Perry Hall Park.*



## 5.7 Responsibilities and Management

### 5.7.1 Riparian Landowners

Owners of land or property adjacent to a river or watercourse are known in legal terms as riparian landowners. They have certain rights and responsibilities for the watercourse based on common law, however there is concern that riparian landowners are not taking responsibility for their land. The EA and the Birmingham City Council Highways Network Management Section will be able to give more detailed information regarding the responsibilities of riparian landowners.

Birmingham City Council as local planning authority has a responsibility for preparing a Strategic Flood Risk Assessment and preparing appropriate policies in Local Development Documents on flood risk management. The Council has a duty to consult the EA on all planning applications in areas of flood risk and where critical drainage problems exist. The Council is required to notify the Secretary of State of any application for major development where it is minded to grant permission against the EA's advice and having done so, to negotiate with the EA in an endeavour to agree a course of action to overcome the objection.

### 5.7.2 Classification of rivers

All watercourses are classified by DEFRA as one of the following categories:

- Main River - these are generally the larger, arterial watercourses and are designated as such on main river maps.
- Critical Ordinary Watercourse - maintained by the City Council on an interim basis on behalf of the EA.
- Ordinary Watercourse - all those that are not designated main river.

The EA has permissive powers to carry out works on all main rivers for the purposes of maintaining and improving the efficient passage of flood flow and the management of water levels. Local Authorities or Internal Drainage Boards (IDBs) have similar powers for ordinary watercourses.

### 5.7.3 Water Quality

The EA also oversees works affecting water quality. For example: monitoring rivers and groundwater; issuing abstraction licenses and impounding licences; issuing discharge consents; providing flood warning systems; and providing advice on flood risk. More information is available on water quality on the EA website.

*Environmental improvement to the Tame corridor, as part of the SMURF project in Perry Hall Park.*





## 6 Policies for development near to river corridors

The following policies are supplementary to the general policies contained within the Birmingham Plan (2005) and complement other relevant Planning Policies within the City and are in conformity with the RSS.

The policies are based on existing European, National and Local Guidance and on the results of consultation, carried out as part of the SMURF project.

The policies apply to all area-based planning documents, planning applications for development, land drainage consents and all other works (including permitted development) adjacent to or likely to have an impact in the river corridors.

However, it should be noted that it is still necessary for the City Council to consult the Environment Agency on developments as required by the Planning Act and other Advice/Circulars.

*Development at the bank of the River Cole on Warwick Road.*



*River Tame.*

### 6.1 Water Quality

#### Policy 1

Measures to improve the water quality of the river corridors should be carried out wherever possible.

Achieving improved water quality is paramount if we are to see a return to 'natural' rivers that the local communities who participated in the SMURF project expressed a desire to see. The ecosystem of the river depends on the quality of the water. We will only see a range of wildlife within river corridors if the water available for their survival is improved.

This can only be achieved through a number of interlinked measures of which many of the other following policies will help.

## 6.2 Water Pollution Prevention

### Policy 2

Measures will be taken to prevent pollution of controlled water within the river catchment.

Pollution prevention will be a priority measure and will need to be addressed from the very beginning of the development process. Developments that could create a potential threat of pollution will not be granted planning permission without appropriate conditions to avoid such risks or without measures either in place or proposed which may be subject to S106 agreements.

Businesses and individuals are responsible for complying with environmental regulations and for preventing pollution of air, land and water. In order to help comply with the law and give practical advice, the Environment Agency has produced a series of Pollution Prevention Guidelines (PPGs). These are available from the Environment Agency and on their web site. They cover either a topic of relevance to many sectors such as oil storage or are specific to a particular type of site eg. schools, vehicle servicing garages or hospitals. The guidelines should be referred to, to determine what measures need to be taken to prevent pollution.

Pollution can occur to both ground and surface water. Since groundwater flows through aquifers and provide the base flow for rivers it is vitally important that all possible pollution of groundwater, as well as surface water, is prevented. Since contamination of sites may affect the groundwater as well as surface water run-off, developers will be required to treat contaminated sites at source.

## 6.3 Sustainable Urban Drainage Systems (SuDs) and Surface Water Run Off

The SuDs (or Sustainable Urban Drainage Systems) approach to drainage tries to copy the way nature deals with rain water, rather than piping surface water run-off from a development directly to a watercourse, to even out peaks and troughs in the amount of run off and to reduce contamination reaching watercourses.

SuDs use a wide range of drainage techniques such as grassed channels, retention ponds,

soakaways and permeable pavements. Infiltration of water into the ground can contribute to the effectiveness of many of these systems.

Surface water arising from a developed site should, as far as practicable, be managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development, while reducing the flood risk to the site itself and elsewhere, taking climate change into account. This should be demonstrated as part of the flood risk assessment. (para F6, Annex F PPS25).

### Policy 3

The full potential for the use of a Sustainable Drainage System (SuDs) will be reviewed in the initial stages of development and it must be demonstrated by the developer that the potential for the use of SuDs has been considered and where appropriate used in the surface water drainage strategy for the site.

In the initial stages of designing a development the range of SuDs should be explored. If appropriate, this should then be incorporated into the development prior to the submission of a planning application and planning conditions will be used to ensure SuDs have been implemented if planning consent is granted.

A surface water drainage risk assessment should be carried out by developers to demonstrate, wherever possible, limiting surface water run off as a result of development or redevelopment and to ensure that there is no net gain in surface water run off as a result.

### Policy 4

There should be no net gain or there should be a reduction of surface water run off where possible as a result of new development and redevelopment sites.

For further guidance, please consult the Environment Agency or the City Council as Land Drainage Authority and Sustainable Urban Drainage - An Introduction (produced by the Environment Agency) and PPS25.

## 6.4 Character of the River Corridors

### Policy 5

A natural character should be maintained, or where appropriate, restored to the river channel.

As a result of the public consultation that was carried out as part of the SMURF project, people wished to see 'natural' river courses with a variety of shape and form, that meandered and was not clinical.

Culverts and artificial channels act as a barrier to wildlife, the flow of water, reduce natural cleansing and contribute to rivers being ignored rather than seen as assets. Watercourses with more natural meandering profiles and uneven beds encourage diversity, oxygenate water and support more fish and wildlife.

### Policy 6

Open or closed culverts should only be used where no alternative exists.

There is strong resistance to culverting of watercourses and other options (such as bridge crossings) should be explored and implemented where possible. The Birmingham UDP states that opening up of culverted streams and rivers will be encouraged. For further guidance and information please refer to Environment Agency publication on 'policy regarding culverts' March 1999.

### Policy 7

Where development lies adjacent to the river corridors or their tributaries every opportunity will be sought to benefit the river by reinstating a natural, sinuous river channel.

Most channels are designed with flood defence in mind therefore sinuous channels are not always appropriate where there is concern with flood risk. However, where there is no or little risk of flooding every opportunity should be sought to reinstate a natural sinuous river channel subject to flood management consideration.

## 6.5 The Floodplain

### Policy 8

The floodplain will be maintained and restored.

The floodplain provides natural storage of floodwater and is as much a part of the river as the channel, which carries normal flows. Flooding of the floodplains is part of the natural river system. Reducing the floodplain without compensatory flood storage elsewhere has led to increased flooding problems downstream, as well as reducing the landscape and nature conservation value of the watercourse system.

Perry Hall Playing Fields is a good example of a floodplain which has been maintained as there has been only limited development. This and other historic floodplains must be respected and be maintained or restored where possible.

*River Rea, Hazelwell, Stirchley.*



### Policy 9

A risk based sequential test will be applied to development proposals. Proposals in a flood zone that are not compatible with flood risk vulnerability will be refused unless the proposal meets the requirements of an exception test as set out in PPS25.



The map of Flood Zones produced by the EA show the different risk zones for areas near to rivers. The Local Authority will determine the flood risk associated with development in these zones by consulting the EA's Standing Advice on Flood Zones.

Flood Zone Maps are used to identify the probability of flooding on a potential development site and proposals within a flood zone will require the submission of a flood risk assessment with the planning application. Where a development is not considered vulnerable, residual flood risk may need to be managed through design and other mitigation measures.

*River Cole reeds.*



## 6.6 Nature Conservation and Landscaping

### Policy 10

The nature conservation and landscape value of the river corridor will be safeguarded, enhanced and restored.

The 'SMURF project' consultation revealed that the public would like to see natural rivers with a variety of wildlife and plants, natural ecology, that there should be tranquil places where people can relax with a variety of light and shade and colour.

Some stretches of river are designated in the Nature Conservation Strategy for Birmingham as Sites of Local Importance for Nature Conservation (SLINCs) and as Key Wildlife Corridors. It is a priority that this policy is implemented in sections of river corridor affected by these nature conservation designations.

Where development schemes affect river corridors, particularly those designated for their nature conservation importance, an ecological impact assessment is likely to be required in support of a planning application.

Landscaping to provide visual, accessible and safe amenities and riverside routes should be undertaken.

When sites are being landscaped, only native species should be used and sites should be designed to be low maintenance. Invasive species such as Japanese Knotweed and Himalayan Balsam may be present along some of the City's watercourses, these species should be dealt with in an approved manner.

Both giant hogweed and Japanese Knotweed are listed in Schedule 9, Part II of the Wildlife and Countryside Act of 1981 (as amended); section 14(2) of the Act makes it an offence to plant or cause to grow in the wild the plant species listed in Schedule 9, Part II. The Environment Agency has produced detailed guidance on approved methods of controlling Japanese Knotweed and giant hogweed. Advice is also available from the EA on the treatment of Himalayan Balsam.

Consultation also revealed that people wished to see more 'natural areas' near to rivers. Cutting of all grass adjacent to rivers should be discouraged, to encourage natural areas' near to the rivers edge. However consideration should be given to flood protection as extra vegetation along the bank would reduce the carrying capacity and flow of the channel.

There is a need for holistic and joined up management of the public land areas abutting the river corridors. It also should be linked with the draft Birmingham Parks Strategy and Strategy for playing fields, biodiversity enhancement along the river as a key wildlife corridor, safeguarding measures for protected species eg water vole, kingfisher and measures to fulfill habitat and species action plan objectives of the Birmingham and Black Country Biodiversity Action Plan (eg for rivers and streams).



## 6.7 The Historic Environment.

### Policy 11

All development proposed within or adjoining river corridors and their tributaries must ensure that archaeological remains, historic buildings and historic landscapes are preserved and protected.

The historic environment is an asset of the Tame, Rea and Cole corridors that shows how the rivers and their tributaries have been managed in the past. When proposals for new development within or adjoining river corridors and their tributaries are put forward:

The impact of the proposed development on the historic environment must be assessed by the applicant. This may need to include archaeological evaluation and/or historic building recording and/or palaeoenvironmental sampling.

Proposed development which has an adverse effect on historic environment features of national importance or their settings will not be permitted, whether or not they are statutorily protected.

Where in situ preservation of other historic environment features affected by the development is not feasible or necessary or where there is an opportunity to enhance understanding of those features through further investigation, 'preservation by record' may be acceptable. Such a record must be obtained by appropriate methods and must include all affected parts of the historic environment, including structural remains, earthworks, archaeological remains below ground and palaeoenvironmental evidence.

Where appropriate and where it does not adversely affect the protection and preservation of the historic environment, planning conditions will be imposed or planning agreements entered into, to enhance public appreciation and understanding, as part of the development proposals.



*The Dingles.*

## 6.8 Design of Developments

### Policy 12

All development proposed adjacent to the river corridors and their tributaries shall be designed to take account of its proximity to the river.

The river provides an ideal focus for development outside of the floodplain (where ground levels permit this).

In the past, riverside developments have ignored the watercourse. Consequently, factory backs, storage yards and security fencing line many sections of the river corridors.

However, as water quality improves and public awareness of rivers increases, it will be necessary to focus development around the water environment. This can be done by relating the development to the river through siting and orientation. Choice of materials should also be in keeping with the natural environment. For example, developments could incorporate some form of planting within the development site itself to make spaces for nature within the river corridor.

For more detailed design guidance refer to the SPD's 'Places for All' and 'Places for Living'.

Birmingham's Canals Strategy has been effective in regenerating many parts of Birmingham by making the canal the focus of development and some of the principles can be applied to the river. Reference should therefore be made to Birmingham City Council's "Canalside Development in Birmingham - Design Guidelines".

## 6.9 Access

### Policy 13

Access to the riverside at appropriate locations will be improved for all persons.

Whilst it is accepted that constraints of ownership may prevent public access to some parts of river corridors, access should be improved wherever possible including designation of routes for pedestrians and cyclists. However, a balance needs to be struck between formalising access to the riverside, maintaining a natural character to the river and safeguarding sensitive sections of the river.

### Policy 14

The opportunity for safe access for all persons to the riverside should be of paramount importance to all developments and improvements. In general, development should not restrict access to the riverside.

Access should be available to the riverside for all people including those with disabilities and wheelchair users. However, it is accepted that wheelchair access may not be feasible in all cases.

In some areas access should be restricted to prevent damage to the natural environment. In these cases the local community should be encouraged to be involved by perhaps providing viewing points and educational areas and diversion or diversity of routes.

As an example the Environment Agency has produced the River Tame Footpath Feasibility Study (June 1998). Reference should be made to this document when assessing improvements to access points to the river.

## 6.10 Education and Recreation

### Policy 15

Educational and recreational value of river corridors and their tributaries will be improved.

Where possible, the educational value of river corridors should be recognised and organisations should be encouraged to use rivers as an educational tool providing it is appropriate and safe to do so and where it will not be to the detriment of safeguarded habitats. Public perceptions of rivers and wetlands can often be negative as rivers have previously been ignored in the development of the area. However, through education this perception can be improved.

The river and river corridor can provide a variety of recreational functions and these should be encouraged through land use planning. Public interpretation should demonstrate the interaction of people and their environment. For example, parts of the river near to places of work could be opened up to allow lunchtime recreation/meeting areas. Safe areas should be created that provide access to the riverside. All sorts of sports eg. fishing and canoeing can be encouraged in areas where it is safe and legal to do so. Recognising man-made and engineering designs via interpretation boards would also be beneficial (using panels and markers like those used on the River Rea Heritage Trail.)

All activities would require careful consideration for public safety and should be undertaken only when it safe to do so.

#### *Access issues with different users.*







*Perry Bridge (Grade II listed structure and Scheduled Ancient Monument) and 1930's bridge over River Tame.*

## 6.11 Safety and Litter

### Policy 16

Measures will be taken to increase safety and prevent litter dumping and crime.

Safety is critical to how people use the environment. People will only use the river for recreation if it is perceived as safe. Developments that are designed with windows and public routes to overlook the river environment can help with perceived and actual safety.

Lighting will be discouraged to minimise disturbance to wildlife. However, exceptions may occur on short sections in built up areas where there is potential for frequent public access at night and public safety considerations.

Litterbins should be provided near to areas frequented by the public. However, these should be few in number and designed so that rubbish does not blow out of the bins. It is preferable that people are encouraged to be responsible and take their litter home. Signs should also be displayed to discourage illegal dumping.

## 6.12 Community Involvement

### Policy 17

The local community will be consulted in any developments that may have an impact on the river corridors.

One of the main aims of the 'SMURF project' was to involve the local community to discover their views on the 'ideal river'. The groups that took part in the project were from different areas of Birmingham with different experiences of rivers. Whilst many of their views as to the ideal river were similar, some were different. It was also evident that people are very keen to get involved and help develop and care for the rivers in their area.

Local knowledge is of major importance in the development of any site and is vitally important that local representatives are involved from the start. This will help form a 'knowledge base' at the start of the project and also encourage local people to 'own' and care for that area of the river in the future.

The level of public consultation on a planning application will depend on the type of development that is proposed and will be in accordance with the draft Statement of Community Involvement (SCI). Ward and Constituency Committee meetings will be used in addition to normal consultation methods as part of engaging with the wider communities.



*Green Road Ford by Sarehole Recreation Ground.*

## 7 Planning obligations

Developers in the vicinity of the river corridors may be required to contribute to the improvements of the river and the river corridors and catchments as described in this guidance, by means of Planning Obligations, where appropriate.

S106 agreements will be sought, where appropriate, to secure the following:

- Sustainable Urban Drainage Systems and future management.
- Restoration of river channels or land close to river channels.
- Opening up of culverts.
- Restoration of flood plains.
- Development in flood plain that requires flood risk management, including defence and mitigation works, that meets wider sustainability aims and passes the sequential and exception tests.
- Nature conservation including off site enhancements.
- Access, recreational, physical, historic and education enhancements.
- Protection and public interpretation of the historic environment.
- Lighting, fences and design features where appropriate.

The use of planning conditions will be used to ensure the necessary works are undertaken in accordance with the approved plans. Consultation with the Environment Agency will be sought to advise on issues and opportunities to improve the River.

## 8 Limitation of liability

This SPD is intended to be as helpful as possible and is believed to be accurate at the time of issue. However, information may be subject to change and no responsibility can therefore be taken for inaccuracies or omissions. The City Council advises that it is the responsibility of developers to check site areas, conditions and the availability of services etc, prior to entering into contracts.

Any views expressed by the Local Planning Authority represent the current policy at the time and may be varied by the Local Planning Authority as necessary.

## 9

## References for further information

Birmingham City Council (2005), The Birmingham Unitary Development Plan

Birmingham City Council (1997), Nature Conservation Strategy for Birmingham

Birmingham City Council, Canalside Development in Birmingham - Design Guidelines

Booth. D.N, Warwickshire Watermills (1978)

Dilworth, D. Tame. Mills of Staffordshire (1976)

Dudley Metropolitan Borough Council/Sandwell Metropolitan Borough Council, Stour Valley Action Plan

Environment Agency (July 2004), A Flood Risk Management Strategy for the River Tame: Scoping Report

Environment Agency (June 1998), River Tame Footpath Feasibility Study Survey

Environment Agency (1980), Nature's Way - Designing for Pollution Prevention (Video)

Environment Agency (1998), Nature's Way - Designs that Prevent Water Pollution (Leaflet)

Environment Agency (March 1997), Liaison with Local Planning Authorities.

Environment Agency (March 1999), Local Environment Agency Plan - Action Plan (West Midlands - Tame)

Environment Agency, Pollution Prevention Guidelines (PPG1 - PPG27)

Environment Agency (July 2002) Managing Water Abstraction

Environment Agency, Sustainable Urban Drainage - An Introduction

For further information on the SMURF project: [www.smurf-project.info](http://www.smurf-project.info)

Gerrard and Slater (1996) Managing A Conurbation - Birmingham and its Region.

Hodder, M (2004) Birmingham: the hidden history Land Use Consultants for The Countryside Agency (December 2001), The Green Arc Partnership - A Prospectus

National Rivers Authority (January 1996), Tame Catchment Management Consultation Report

Stoke on Trent City Council - Rivers of Renewal. Stoke on Trent's Rivers Strategy

Biodiversity Action Plan for Birmingham and the Black Country.

ODPM (July 2004), A Draft Practical Guide to the Strategic Environmental Assessment Directive

ODPM (October 2003), The Strategic Environmental Assessment Directive: Guidance for Planning Authorities

SMURF Project Team (July 2003) SMURF Project Methodology and Techniques

HR Wallingford & Wallingford Software (July 2003) Integrated Catchment Planning and Land Use Planning - Benchmark Report on existing 'know-how' in the EU

SMURF Project Team (June 2003) Report of 'Know-How' Workshop, 25th April 2003, University of Birmingham

UK Groundwater Forum, Groundwater - Our Hidden Asset

Upton C (1997) A History of Birmingham

West Midlands County Council (1988), Barr Beacon and Sandwell Valley Countryside and Recreation Subject (Local) Plan

Environment Agency (2006), The Water Framework Directive and Planning - Initial advice to planning authorities in England and Wales.



## 10 Glossary

### A

#### Abstraction license

An authorisation granted by the Environment Agency to allow the removal of water from a source.

#### Aquifer

A water bearing-stratum situated below ground level. The water contained in aquifers is known as ground water.

#### Artificial channels

Not a natural channel where a river flows through.

#### Attenuation

Breakdown or dilution of contaminant in water.

### B

#### BCC

Birmingham City Council

#### Best practice

A technique or methodology that, through experience and research, has proven to reliably lead to a desired result.

#### Biodiversity

The range of soils, climate, water, plants and animals that make up the worlds of life and landscape.

#### Biodiversity Action Plan (BAP)

Plan identifying targets improving and protecting biodiversity in an area. There are regional, county and local BAP's.

#### Brook

A small stream

#### Brownfield Site

Previously developed land.

### C

#### Catchment

The total area from which a single river collects surface run off.

#### Carboniferous and Triassic Geology

A general name for all strata formed in the Carboniferous and Triassic periods of geological history. Carboniferous strata were formed approximately 360 to 290 million years ago, while Triassic strata were formed approximately 250 to 210 million years ago. The Carboniferous and Triassic periods were separated by the Permian period which is not represented to any significant extent in the Birmingham area.

#### Carboniferous Coal Measures Strata

A general name for strata formed in the later stages of the Carboniferous period. Coal Measures generally comprise a succession of beds of mudstone, siltstone, sandstone and seams of coal. Due to the permeability of the sandstone beds and the fractures within the strata Coal Measures are classified as a Minor Aquifer under the Environment Agency's 'Policy and Practice for the Protection of Groundwater'.

#### Channelisation

The practice of straightening a water course or stream to remove meanders and make the water flow faster. Sometimes concrete is used to line the sides and bottom.

#### Climate Change

Commonly used interchangeably with 'global warming' and 'the greenhouse effect'.

#### Conservation

The preservation or restoration of the natural environment and wildlife, or the careful use of a resource.

**Controlled Washlands**

An area of the floodplain that is allowed to flood or is deliberately flooded by a river or stream for flood management purposes, with potential to form a wetland habitat.

**Corridor**

A strip of natural habitat that connects two adjacent nature reserves to allow migration of organisms from one place to another.

**Culverts**

Channel carrying water across or under a road canal etc.

**D****Discharge consents**

Authorisation from your Environmental Regulator to discharge any sewerage, trade effluent or contaminated surface water to controlled waters in the form of a discharge consent.

**E****Ecology**

The study of the relationships between living things and their environment (see Ecosystem).

**Eco Record**

The Ecological Database for the Black Country and Birmingham. It is managed by The Wildlife Trust for Birmingham and the Black Country on behalf of Birmingham City Council, Dudley, Sandwell, Walsall and Wolverhampton Borough Councils.

**Ecosystem**

The system in which animals and plants depend on their environment and the environment depends on them.

**Effluent**

Liquid waste from industrial agricultural or sewage plants.

**Environment**

Physical surroundings; all that is around you.

**Environmental Assessment**

A process designed to identify, analyse and evaluate the environmental effects of proposed projects.

**Environmental indicators**

Offer a simple measure of the status of an environmental attribute. Examples include indicators of potential damage, such as toxic emissions, as well as indicators of potential benefits, such as biodiversity. Environmental indicators can be used in trade-off analysis.

**European Directive**

The legislative acts of the European Union (EU) can have different forms: regulations, directives, decisions, recommendations and opinions.

**F****Fauna**

Animals and all living things in an ecosystem that are not plants (see Flora).

**Flood flow**

Flow of water from a reservoir down a spillway. This happens when the reservoir overflows because of heavy rain in its catchment.

**Flood mitigation**

Levee banks and other structures which hold back water in time of flood, reducing (mitigating) damage to property.

**Floodplain**

Low-lying land around a river which becomes inundated (covered in water) when the river level rises in time of flood.

**Flora**

Flowers and plants and things that look like plants, including fungi.

**G****GIS (Geographical Information System)**

Both a database designed to handle geographic data as well as a set of computer operations that can be used to analyse the data.

### GIS layers

The visual representation of a geographic data set in any digital map environment. Conceptually, layer is a slice or stratum of the geographic reality in a particular area and is a more or less equivalent to a legend item on a paper map. On a road map, for example, national parks, political boundaries and rivers are examples of different layers.

### Good status

A general term meaning the status achieved by a surface water body when both the ecological status and its chemical status are at least good or, for groundwater, when both its quantitative status and chemical status are at least good.

### Green Belt

A designation used by planning authorities on land adjacent to towns or cities, defined for the purpose of restricting the outward expansion of the urban area and to protect the countryside.

### Green Wedge

An area within the Green Belt that extend into the city, often along a river valley. They provide links to the open countryside.

### Groundwater

Water which saturate a porous soil or rock substratum (or aquifer). Water held in storage below ground level.

### Groundwater abstraction

The removal of water below ground level either permanently or temporarily.

## H

### Habitats

The place where a population (eg. human, animal, plant, micro-organism) lives and its surroundings, both living and non-living.

### Habitat

The are where a plant or animal lives and grows under natural conditions.

### Highly modified river

A river often in an urban environment, which has been modified to cope with flooding and urbanisation and often of poor quality.

## I

### Infiltration

The movement of water through soil or other porous material; the entry of stormwater into the sewerage treatment plant (see Effluent).

### Influent

The waste water that enters a sewage treatment plant (see Effluent).

## L

### Landscape architecture

Design and detailing of external spaces.

### LEAP

Local Environment Agency Plan

### Listed Buildings

List of buildings of special architectural or historic interest compiled by Central Government under the Planning (Listed Buildings and Conservation) Act 1990.

### Local Development Framework (LDF)

New system for local planning, introduced by the Planning and Compulsory Purchase Act 2004, which will replace existing statutory plans.

### Local Nature Reserves (LNR's)

Statutory nature reserves, designated by local authorities under national legislation.

## M

### Major Aquifer

These are highly permeable formations usually with a known or probable presence of significant fracturing. They may be highly productive and able to support large abstractions for public supply and other purposes.

Environment Agency Policy and Practice for the Protection of Groundwater.

### Meander

The circuitous winding or sinuosity of a stream, used to refer to a bend in the river.

**Minor Aquifer**

These can be fractured or potentially fractured rocks, which do not have a high permeability, or other formations of variable permeability. Although these aquifers will seldom produce large quantities of water for abstractions, they are important both for local supplies and in supplying base flow for rivers. In certain local circumstances minor aquifers can be highly vulnerable to pollution.

Environment Agency Policy and Practice for the Protection of Groundwater.

**N****Non Aquifer**

These are formations with negligible permeability that are generally regarded as not containing groundwater in exploitable quantities. However, groundwater flow through such rocks, although imperceptible, does take place, and needs to be considered when assessing the risk associated with very slowly degrading pollutants.

Environment Agency Policy and Practice for the Protection of Groundwater.

**P****Permeable Strata**

A general term to describe geological layers which have the ability to transmit water due to their physical structure. Water can move either between individual grains of a rock or in fractures.

**Permissive powers**

Power which confer on the Agency the right to do things but not the duty to do them.

**Pollution**

Pollution is anything that would harm us and other living things in an environment. Water pollution generally includes chemicals, bacteria and viruses, other micro-organisms and rubbish. These are called pollutants.

**Pollutant**

A substance that destroys the purity of air, water or land.

**PPS**

Planning Policy Statements.

**PPG**

Planning Policy Guidance.

**R****Reach**

A length of river.

**Reservoir**

Any natural or artificial holding area used to store, regulate or control water.

**Riparian**

Of, or on, land adjacent to the river.

**River**

A body of running water of considerable volume usually moving over the earth's surface in a channel or bed.

**River Basin**

The area of land from which all surface water run-off flows, through a sequence of streams, rivers and lakes into the sea at a single river mouth, estuary or delta.

**River Basin District Plan**

A plan of an area where all the surface run-off flows through the river basin into the sea at a single river mouth, estuary or delta.

**River catchment**

This is where water is drained by a particular river system.

**RPG**

Regional Planning Guidance.

**RSS**

Regional Spatial Statements.

**Run-off**

Rainfall water which flows from a catchment into a river, stream, lake or reservoir.

**S****Scenario manager**

The scenario manager allows the creation, viewing and modification of a scenario.

**Sedimentation**

The process by which suspended particles in waste water settle to the bottom.

### **Sewage and sewerage**

Sewage is the waste carried in our sewers. Sewerage is the system of pipes, pumps and treatment plants to manage sewage.

### **SINC**

Site of Importance for Nature Conservation.

### **Sites and Monuments Record (SMR)**

Record of known sites of archaeological importance held by the City Council.

### **Sites of Special Scientific Interest (SSSI)**

Nationally important areas of land, designated under Section 28 of the Wildlife and Countryside Act 1981 by English Nature as being of a special interest by reasons of their flora, fauna, geological or physiographical features.

### **SLINC**

Site of Local Importance for Nature Conservation.

### **SMURF**

Sustainable Management of Urban Rivers and Floodplains.

### **SPD**

Supplementary Planning Document.

### **Species and Habitat Action Plans**

Summary of descriptions of ecological conservation, wildlife, natural, semi-natural and urban habitats and the current status and issues affecting the habitat and broad policies to address and improve them.

### **SPG**

Supplementary Planning Guidance.

### **Strategic Environmental Assessment**

Derived from the SEA Directive 2001/42/EC which took effect in July 2004. SEA involves the systematic identification and evaluation of the impacts of a strategic action (eg. a plan or programme) on the environment. The proposed Local Development Framework will require a SEA.

### **Stream**

A body of running water moving over the earth's surface in a channel or bed.

### **SuD**

Sustainable Urban Drainage System.

### **Surface water**

Water which flows or is stored on the ground surface.

### **Sustainability**

The ability of an ecosystem to maintain ecological processes and functions, biological diversity and productivity over time.

### **Sustainable**

The yield of a natural resource that can be produced continually from generation to generation, without depleting the resource.

### **Sustainable Development**

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

### **Swales**

Vegetated areas used in place of curbs or paved gutters to transport stormwater run-off. They can also temporarily hold small quantities of run-off and allow it to infiltrate into the soil.

## **T**

### **Toxic**

Harmful, destructive or deadly to living things.

### **Triassic Mercia Mudstone**

Red-brown, silty mudstones deposited in the Triassic period following deposition of the Triassic Sherwood Sandstones. Due to the fine grained nature of the mudstones these strata have only negligible permeability and are therefore classified as a Non Aquifer under the Environment Agency's 'Policy and Practice for the Protection of Groundwater'. Occasional thin beds of siltstones and sandstones (known as 'skerries') can support very minor abstractions.

### Triassic Sherwood Sandstone

A collective term to describe a number of sandstone formations deposited in the Triassic period which have similar aquifer properties and are therefore considered as a single unit in terms of groundwater. Due to the structure of these strata they have a significant permeability and can support large abstractions, consequently they are classified as a Major Aquifer under the Environment Agency's 'Policy and Practice for the Protection of Groundwater'. However, the permeability of the strata also means that contaminants can move relatively easily through them and they are therefore vulnerable to contamination. Occasional mudstone beds may locally inhibit the movement of groundwater.

### Tributary

A stream or river that flows into another larger stream or river.

## U

### Urban Design

The interface between planning and architecture. It can also mean the design of the city as a whole or elements within it.

### Urban fringe

Can be described as the 'landscape interface between town and country'.

### UDP

Unitary Development Plan.

### Urban river

A river which flows through an urban environment and is modified to cope with flooding and urbanisation.

## W

### Water Table

The level of water in an aquifer.

### Wetlands

Low lying areas of land regularly or permanently covered with either fresh or salt water. They occur naturally and can be constructed.

### Wildlife corridors

Strips of trees, shrubs and vegetation that provide cover and habitat for wildlife and serve as travel lanes for movement across open areas and between isolated patches of habitat. They provide wildlife with access to the different types of habitat they require.



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If you have hearing difficulties please call us via Tynetalk 18001 0121 303 3030 or e-mail us at:  
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## **A** Appendix: Summary of policies

### **Policy 1**

Measures to improve the water quality of the river corridors should be carried out wherever possible.

### **Policy 2**

Measures will be taken to prevent pollution of controlled water within the river catchment.

### **Policy 3**

The full potential for the use of a Sustainable Drainage System (SUDS) will be reviewed in the initial stages of development and it must be demonstrated by the developer that the potential for the use of SUDS has been considered and where appropriate used in the surface water drainage strategy for the site.

### **Policy 4**

There should be no net gain or there should be a reduction of surface water run off where possible as a result of new development and redevelopment sites.

### **Policy 5**

A natural character will be maintained, or where appropriate, restored to the river channel.

### **Policy 6**

Open or closed culverts should only be used where no alternative exists.

### **Policy 7**

Where development lies adjacent to the river corridors or their tributaries every opportunity will be sought to benefit the river by reinstating a natural, sinuous river channel.

### **Policy 8**

The floodplain will be maintained and restored.

### **Policy 9**

A risk based sequential test will be applied to development proposals. Proposals in a flood zone that are not compatible with flood risk vulnerability will be refused unless the proposal meets the requirements of an exception test as set out in PPS25.

### **Policy 10**

The nature conservation and landscape value of the river corridor will be safeguarded, enhanced and restored.

### **Policy 11**

All development proposed within or adjoining river corridors and their tributaries must ensure that archaeological remains, historic buildings and historic landscapes are preserved and protected.

### **Policy 12**

All development proposed adjacent to the river corridors and their tributaries shall be designed to take account of its proximity to the river.

### **Policy 13**

Access to the riverside at appropriate locations will be improved for all persons.

### **Policy 14**

The opportunity for safe access for all persons to the riverside should be of paramount importance to all developments and improvements. In general, development should not restrict access to the riverside.

### **Policy 15**

Educational and recreational value of river corridors and their tributaries will be improved.

**Policy 16**

Measures will be taken to increase safety and prevent litter dumping and crime.

**Policy 17**

The local community will be consulted in any developments that may have an impact on the river corridors.

# B Appendix:

## Summary of other planning policies and guidance

The draft Supplementary Planning Document has been produced in the context of the following Planning Policies.

### National Level

National Planning Policy guidance (PPG) and Planning Policy Statement (PPS), are:

#### PPS 1

Delivering Sustainable Development (February 2004).

#### PPG2

Green Belts (January 1995).

#### PPS3

Housing (November 2006).

#### PPG4

Industrial, commercial development and small firms.

#### PPS 9

Biodiversity and Geological Conservation (August 2005).

#### PPG10

Planning for sustainable waste management.

#### PPS11

Regional Spatial Strategies (October 2004).

#### PPS12

Local Development Framework (October 2004).

#### PPG15

Planning and the Historic Environment (1994).

#### PPG16

Archaeology and Planning.

#### PPG17

Planning for Open Space, Sport and Recreation (July 2002).

#### PPS23

Planning and Pollution Control (2004).

#### PPS25

Development and Flood Risk (Dec 2005).

### Regional Level

#### West Midlands Regional Spatial Strategy (June 2004)

The draft Supplementary Planning Document has been produced in the context of the West Midlands Spatial Strategy (RSS), formerly known as Regional Planning Guidance for West Midlands. It sets out what should happen where and when across the West Midlands Regional up to 2021.

The Spatial Strategy covers a wide range of subjects including housing, economic development, the built historic and natural environment renewable energy, mineral waste and transport.

#### Relevant policies

##### QE1

Conserving and enhancing the environment.

##### QE2

Restoring degraded area and managing and creating high quality new environment.

##### QE3

Creating a high quality built environment for all.

##### QE4

Greenery urban green spaces and public spaces.

##### QE5

Protection and enhancement of the historic environment.

##### QE6

The conservation, enhancement and restoration of the region landscape.

##### QE7

Protecting, managing and enhancing the region's biodiversity and nature conservation resources.



**QE8**

Forestry and Woodlands.

**QE9**

The water environment.

**T3**

Walking and Cycling.

**T9**

The management and development of national and regional transport networks.

**Local Level**

The Birmingham Plan, Birmingham Unitary Development Plan (UDP) 2005.

The draft Supplementary Planning Document has been prepared in accordance with the adopted UDP 2005.

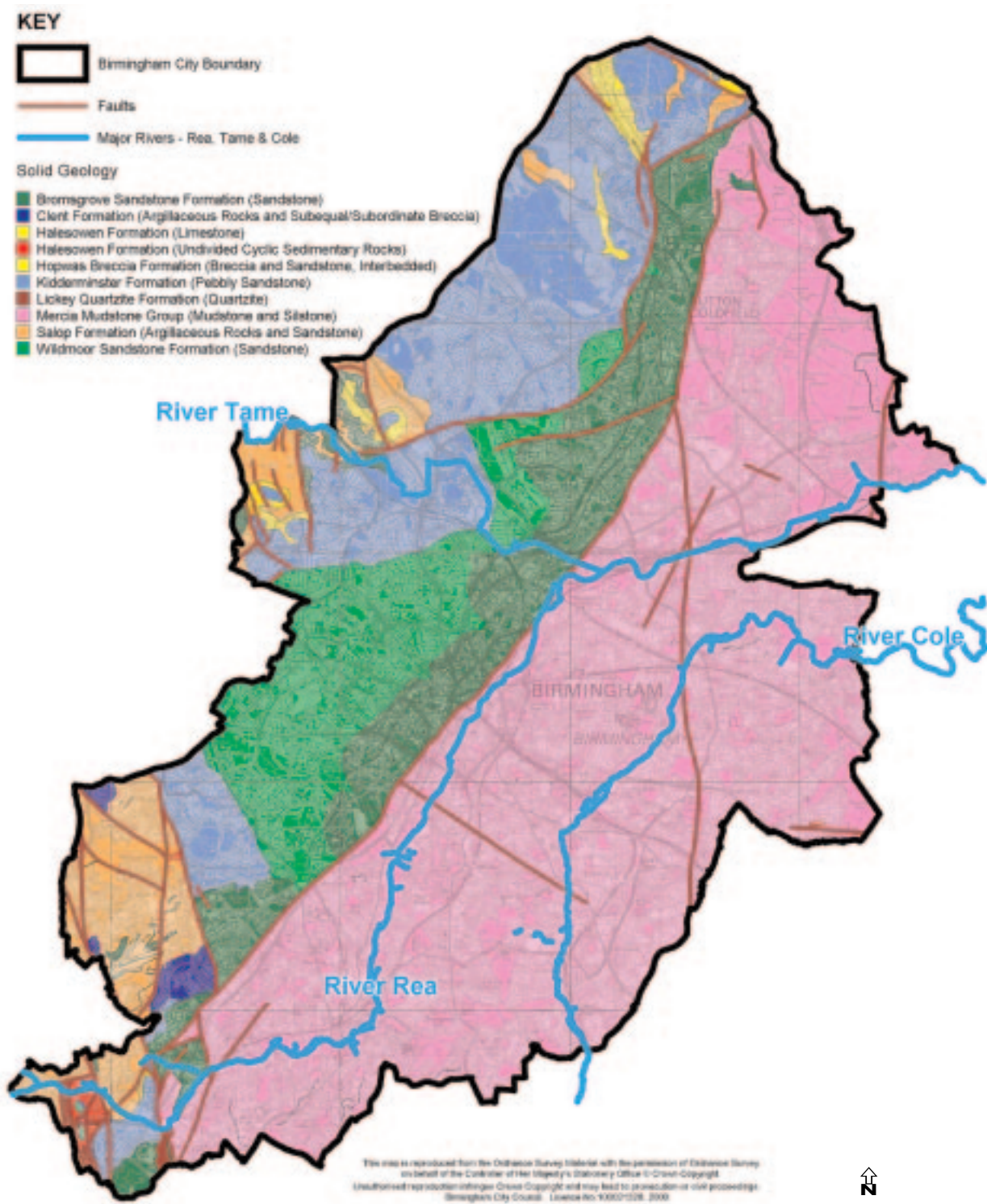
References should be particularly made to chapter 3 on Environment, which covers a number of policy areas such as surface run off, Sustainable Urban Drainage, Open Space, Flooding, Nature Conservation, Green Belt, Historic buildings, Conservation Areas and archaeological remains and development proposals affecting archaeological remains.

And references should also be made to Chapter 4 on the Economy, Chapter 5 on Housing and the relevant Constituency Chapters.

# C Appendix: Context plan



# D Appendix: Birmingham's geology











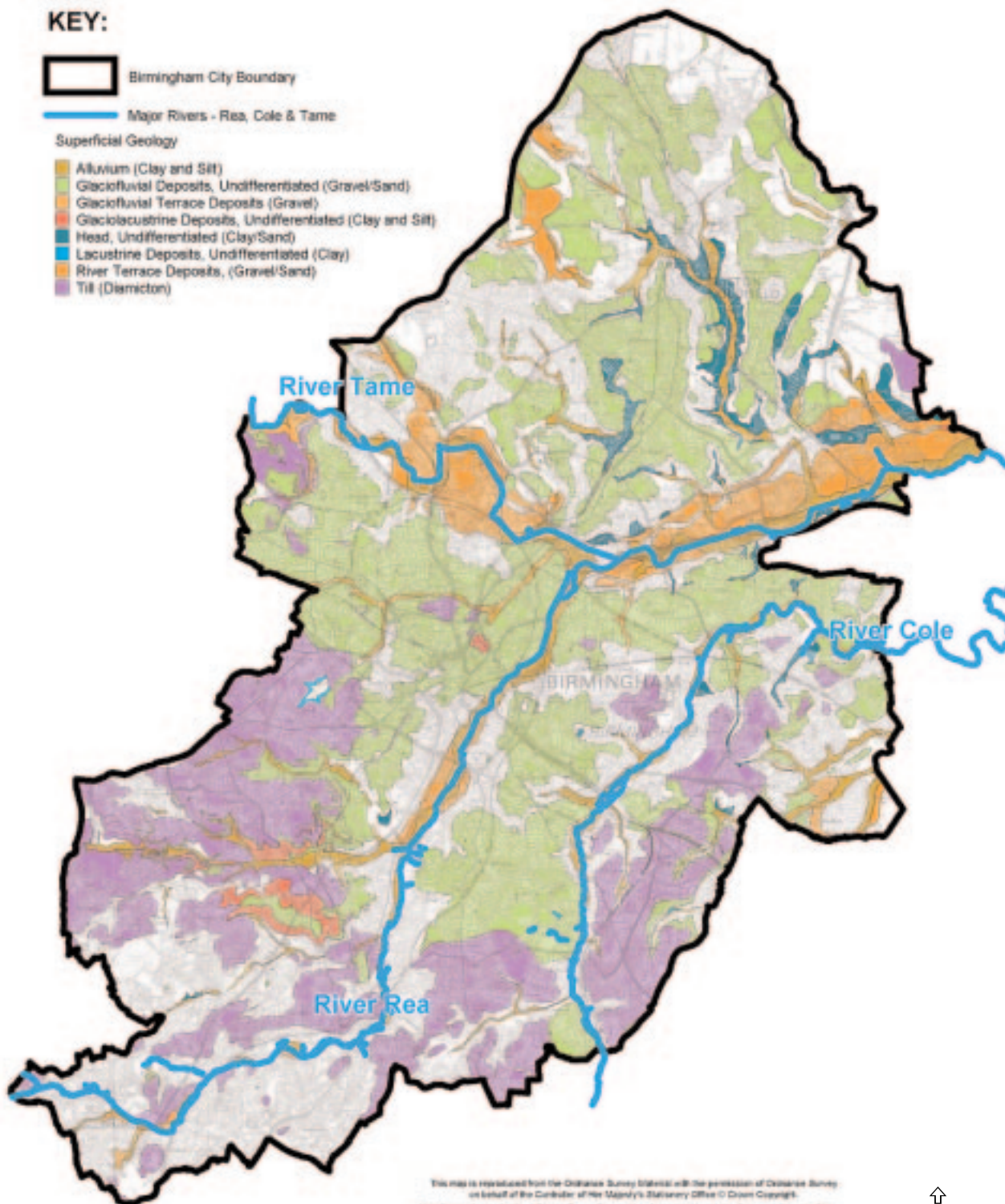


**KEY:**

-  Birmingham City Boundary
-  Major Rivers - Rea, Cole & Tame

Superficial Geology

-  Alluvium (Clay and Silt)
-  Glaciofluvial Deposits, Undifferentiated (Gravel/Sand)
-  Glaciofluvial Terrace Deposits (Gravel)
-  Glaciolacustrine Deposits, Undifferentiated (Clay and Silt)
-  Head, Undifferentiated (Clay/Sand)
-  Lacustrine Deposits, Undifferentiated (Clay)
-  River Terrace Deposits, (Gravel/Sand)
-  Till (Diamicton)

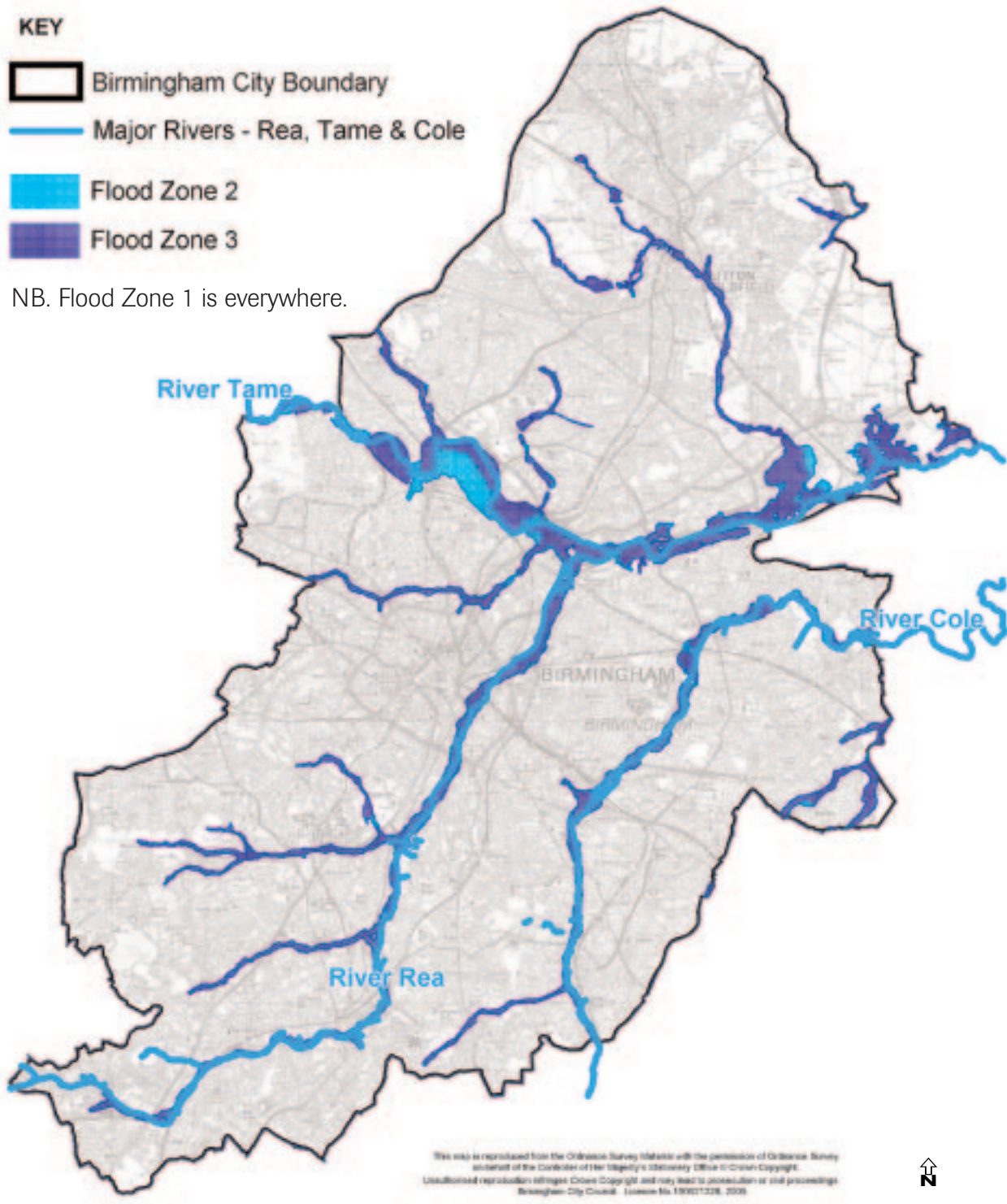


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# E Appendix: Birmingham's flood zones





the **Birmingham** plan  
birmingham's local development framework

Sustainable management of  
urban rivers and floodplains

Supplementary Planning Document

june 2007