

Water Services Infrastructure Guide

A Planning Framework



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- Cambridge Water
- East of England Regional Assembly
- East Midlands Regional Assembly
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Please note that photograph references are the providers and not a description

Foreword

The government has promoted substantial increases in jobs and housing numbers in the Growth Areas of southern and eastern England, and is considering further opportunities through its emerging Growth Points initiative. Increases in population and employment will intensify pressures on limited water resources in parts of the country where the water dependent environment is under stress. It is very important that development planners consider the strain on environmental water quality associated with Water Services Infrastructure (WSI) alongside other impacts in managing future growth.

Water and wastewater infrastructure requirements need to be included in development plans. If WSI is not considered in line with other infrastructure requirements, this may result in slower growth and/or environmental damage and impact on water quality if sewage treatment systems are overloaded. Development planners need to liaise with the Environment Agency and appropriate water and wastewater providers at the earliest opportunity so that all parties understand and take account of each other's processes, practices and issues in order to promote the efficient and sustainable delivery of infrastructure.

The aim of this guide is to promote this change in process and the principles of sustainable development, that is: *"The need to satisfy the requirement for housing, population and economic growth (additional development growth) by providing Water Services Infrastructure in a timely manner through sensitive environmental and social planning, which minimises the additional use of natural resources"*.

Although the principles and good practice in this guide will be applicable everywhere, the particular focus is on Growth Areas, typified by those proposed for major growth in the Sustainable Communities Plan.

The Water Services Infrastructure Group (WSIG) is a task and finish group of the Milton Keynes and South Midlands Environment and Quality of Life (EQOL) Sub-Group. It was set up to promote the principles of sustainable development in the implementation of local water and wastewater services, and to identify a common means to address the need to provide water and wastewater infrastructure services in a timely and sustainable manner.

The group's remit includes addressing issues and developing guidance for the Growth Areas in relation to the provision of WSI. The group will encourage communication and co-ordination of activities between stakeholders.

Information contained in this guide has been prepared by the WSIG task and finish group members, and represents independent advice. It is not a statement of government policy.

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I. Introduction

I.1: Background

This Water Services Infrastructure Guide promotes sustainable development in the implementation of local water and wastewater services. It aims to identify a common means for the development of Water Services Infrastructure (WSI) in a timely, sustainable and efficient manner.

The Sustainable Communities Plan 'Sustainable Communities: Building for the Future', published by the Office of the Deputy Prime Minister in February 2003, proposes higher levels of growth for the Milton Keynes & South Midlands (MKSM), London-Stansted-Cambridge-Peterborough (L-S-C-P Corridor), Ashford and the Thames Gateway (TG) Growth Areas. Together these areas will be expected to accommodate an additional 200,000 dwellings (by 2016) over and above levels provided for in current development plans. Ongoing reviews of relevant Regional Spatial Strategies will increase this further beyond 2016. This growth will require additional water resources, water abstraction and treatment, associated infrastructure of water supply pipes, wastewater treatment and disposal, and surface water drainage. These services are collectively referred to as Water Services Infrastructure in this guide. The provision of WSI is an essential part of Sustainable Communities.

This guide has been written in partnership with development planners, water companies and the Environment Agency (subsequently referred to as the 'major stakeholders'). By working together this partnership aims to ensure a co-ordinated and efficient balance of the needs of each major stakeholder - the need of planners to manage growth sustainably; water companies to comply with their statutory duty to connect new developments; and the Environment Agency to protect the environment. Where drainage is under the jurisdiction of Internal Drainage Boards they should be involved in the process to minimise flood risk. If the necessary Water Services Infrastructure is provided in a timely and sustainable manner the needs of all stakeholders will be met.

The Water Services Infrastructure Group would welcome any feedback on this guide. For more information on the group go to: www.environment-agency.gov.uk/regions/anglian/484767/1198793/?version=1&lang=_e.

Or contact: Sustainable Development Delivery Team, Environment Agency, Kettering. E-mail: daniel.curtis@environment-agency.gov.uk Tel. no: 08708 506 506.



Main photo: Janet Jackson. Inset: Environment Agency

1.2: Purpose of the Guide

The purpose of this guide is to highlight that additional water supplies and wastewater disposal facilities are required to service growth and protect the environment. It explains how solutions are sought and the role of the major stakeholders. It recognises that practices and policies of each stakeholder are not always fully aligned and issues remain to be resolved. These are highlighted for attention and future resolution.

The proposed change in the scale and pace of development in large areas of London, the south east, east midlands and east of England requires major changes to the traditional ways of providing and planning for Water Services Infrastructure (WSI). Regional and local planners, water companies (these include all water and wastewater providers – see also Glossary of Terms for full definition), the Environment Agency and developers can, and need to work together to accommodate growth/development. The need to change the way we address this is recognised by all the major stakeholders and as such this guide will be updated on best practices, regulations and progress on the issues identified as they are raised.

As noted in the “*East of England Plan, Examination in Public Report of the Panel*” (June 2006), “*the traditional approach has been for the planning process to decide the quantity and location of development, and then for the water industry to bring forward the infrastructure... to cope with the demand*”. The Panel noted that this process must not continue – “*there is a need for the two things to be addressed in parallel, and in a more integrated way.*”

Although focused on the Growth Areas identified in the Sustainable Communities Plan this guide will be appropriate to all those involved in development in the UK at a regional, local and development level. It is designed to guide regional and local planning authorities and those responsible for co-ordinating infrastructure at a local level, such as Local Delivery Vehicles (LDVs) and individual developers. Their roles and responsibilities in assisting water service providers in maintaining a sustainable WSI are outlined, and how to engage with other stakeholders such as regulators and environmental organisations. It also helps water companies and the Environment Agency to appreciate the planning process and how, and why, they will need to be engaged.

For Information

There have been a number of initiatives that can be drawn upon to guide you in taking forward growth plans or preparing action plans to address any existing shortfalls in Water Services Infrastructure. Such initiatives are listed as “Further Resources”.



Did you know...?

- The impact of climate change will exacerbate the stress on water resources and could affect river water quality through decreased dilution;
- The Water Framework Directive and development of River Basin Management Plans may require even higher environmental standards which will impact both on water available for abstraction and wastewater effluent standards;
- Significant changes to Water Services Infrastructure, for example a new sewage treatment works or a storage reservoir have a long lead in period requiring extensive consultation and studies, before necessary planning permissions and/or consents are approved.



Photo: South East England Regional Assembly

Many of the principles proposed in this guide (as referred to in Section 1.3: Principles) are currently taken forward through 'non-statutory' mechanisms. However, the long-term objective is to move towards implementation through the statutory development plan process at regional, sub-regional and local levels. Issues currently affecting take up of these principles in the planning process are also identified.

The Water Services Infrastructure Guide intends to raise awareness of these issues by providing an outline of the roles and responsibilities of each stakeholder involved and by providing:

- a checklist of WSI planning and delivery principles – relevant best practice references and case studies;
- references to the statutory duties of water service providers;
- advice on options for infrastructure providers and means of funding;
- a list of issues so far identified and potential resolutions;
- signposts to further resources and information;
- an opportunity for feedback from practitioners on WSI issues raised in this guide.

Water Services Infrastructure is provided by a number of different organisations in what is an involved and complex process from planning to provision.

1.3: Principles

This guide aims to establish a set of overarching planning and delivery principles for the provision of Water Services Infrastructure (WSI). The three key principles endorsed are:

- **A joined up planning approach** - through:
 - involvement of all stakeholders early in the planning process;
 - identification and solution of existing constraints to provide sustainable outcomes;
 - the use of local development documents and supplementary planning documents to require and promote sustainable development e.g. through water efficiency, Sustainable Drainage Systems (SuDS) – refer to Section 4.5: Case Study – Millennium Green, Nottinghamshire;
 - awareness and promotion of the relevant aspects of Water Supply Regulations and Building Regulations;
 - incorporation of Green Infrastructure opportunities e.g. recreation, biodiversity.

- **Strategic and integrated provision prior to development** – through:
 - agreement of housing and population forecasts;
 - stakeholder agreement to a plan and a programme of implementation;
 - the financing of infrastructure in a timely manner.
- **Building sustainable Water Services Infrastructure (WSI)** – through:
 - the promotion of best practice principles;
 - minimisation of water consumption and maximisation of water efficiency;
 - the management of wastewater quality and quantity to satisfy environmental needs;
 - minimisation of potential flood risk and the adoption of sustainable urban drainage methods e.g. SuDS.

1.4: What is Water Services Infrastructure?

More development means that more water is abstracted from the environment, therefore more water is treated, stored and consumed. More wastewater flows to, and discharges from sewage treatment works, then back to the environment. As a result there is a greater risk of flooding from rainwater run off.

More water increases the need for additional Water Services Infrastructure (WSI). In this context WSI is defined as:

- licensed systems for abstraction from reservoirs, rivers and aquifers;
- new storage provision (e.g reservoirs) and long distance movement of water between catchments;
- raw water abstraction and treatment;
- major transfer pumping stations and pipelines to local areas of demand;
- local water supply distribution infrastructure;
- additional infrastructure to control surface water runoff in urban areas;
- local drainage and storage infrastructure;
- wastewater network and treatment;
- the receiving watercourses.



Photo: Environment Agency

- South East England Regional Assembly, Adapting to climate change impacts on water management: A guide for planners – www.southeast-ra.gov.uk/our_work/planning/sust_nat_res/index.html;
- SEEDA Sustainability Checklist – www.sustainability-checklist.co.uk/index-3.htm;
- DTI: Sustainable Water Management in Land-Use Planning, CIRIA, 2006 – www.ciria.org/acatalog/c630.pdf;
- Sustainable Communities Plan, February 2003 (Link to National Sustainable Communities Plan, plus subsequent regional based Sustainable Communities Plans) – www.communities.gov.uk/index.asp?id=1139868;
- Homes for All – www.communities.gov.uk/index.asp?id=1122851;
- Department for Communities and Local Government (DCLG) – www.communities.gov.uk;
- Growth Areas, DCLG – www.communities.gov.uk/index.asp?id=1140039;
- Summary of Growth Area Studies, DEFRA – statistics.defra.gov.uk/esg/reports/housing/appendb.pdf;
- Strategic Planning for Flood Risk in the Growth Areas – Insurance Consideration, Association of British Insurers, July 2004 – www.abi.org.uk/display/File/Child/554/Strategic_Planning_for_Flood_Risk_thamesgateway.pdf;
- Policies: Sustainable Communities, CIWEM, August 2005 – www.ciwem.org/policy/policies/sustainablecommunities.asp;
- Water Industry Act 1991. The duty to provide water supplies for domestic housing are made under the Act. Reference should be made to Clauses 52, 44 and 51 relating to supplies, connections and provision of infrastructure);
- Environment Agency Corporate Plan, 2005-2008 – publications.environment-agency.gov.uk/pdf/GEHO0906BLJJ-e-e.pdf.

Further resources

- Corby and Aylesbury Water Cycle Studies contact: paul.hunt@environment-agency.gov.uk;
- North Northants Water Cycle Strategy contact: damian.langdon@environment-agency.gov.uk;
- Ashford Water Cycle Strategy, Kent – www.ashfordsfuture.org/ (follow links to Master Plan and Integrated Water Management);
- The Green Infrastructure Guide – www.environment-agency.gov.uk/regions/anglian/484767/1118553/?version=1&lang=_e.



Photo: Essex & Suffolk Water

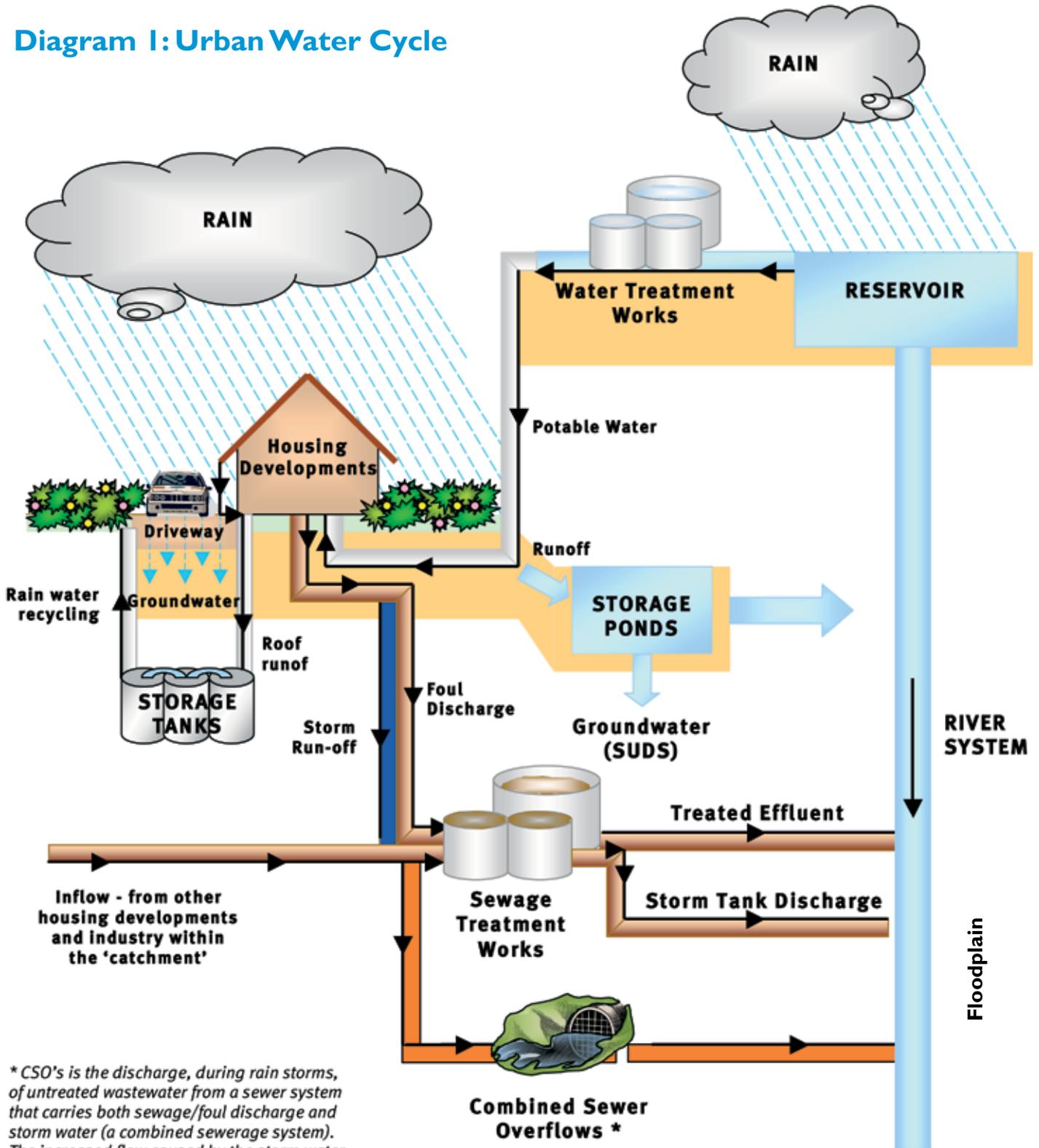
This use of water is part of a continuous cycle, consequently the needs of the water environment (its environmental capacity) and the provision of each of the elements of WSI (as defined previously) should be considered together. This process is commonly referred to as the 'Water Cycle' (refer to Diagram 1: Urban Water Cycle on page 9).

Within the Water Cycle there are opportunities to consider reduced consumption, recycling and re-use of water. These can be identified through a Water Cycle Strategy, which is recognised as best practice and allows the principles of sustainable development to be fully exploited. It considers all the WSI elements - how they interact, the impact of the scale and rate of development and how water should be properly managed. It ensures that new developments do not compromise existing ones and that water quality and the environment are protected and enhanced.

Refer to **The Corby Case Study (Section 3.4)**. This contains a checklist of the types of WSI development and options that need to be considered and ways of mitigating any adverse impacts. However, it is recognised that it will not be appropriate for all developments e.g. where options are limited and/or where there are no WSI constraints.

Where possible, options to adopt recognised best practice, such as combining infrastructure development with environmental and community improvements, should be considered e.g. designing reservoirs/water storage to encourage wildlife and recreation.

Diagram 1: Urban Water Cycle



* CSO's is the discharge, during rain storms, of untreated wastewater from a sewer system that carries both sewage/foul discharge and storm water (a combined sewerage system). The increased flow caused by the storm water runoff exceeds the sewerage system's capacity and the sewage is forced to overflow into streams and rivers in the area through CSO outfalls.

Diagram 1 summarises the Urban Water Cycle and shows how water enters, leaves and returns to the river system.

2. What to do when preparing Regional Plans

There are other 'Regional Strategies' produced by a number of other organisations, including water companies and the Environment Agency, who prepare their own 'Regional Plans' e.g. CAMS, CFMP's, Water Resources Plans etc. These plans have more specific drivers for providing the necessary water and wastewater infrastructure to serve new developments as well as protecting the environment. The RSS should take account of existing 'strategies' and inform those in the future. This guide only refers to the RSS.

2.1: What is a Regional Spatial Strategy?

A Regional Spatial Strategy (RSS) is a strategy produced by the Regional Planning Body to provide a broad development strategy for a region over a 15 to 20 year period. It impacts on Water Services Infrastructure (WSI) as it defines:

- what is needed to maintain the economy in the region;
- how many houses are needed, district level numbers and broad locations for them;
- policies for environmental protection and improvement;
- policies to which local development plans conform to (refer to Section 3: What to do when preparing Local Development Plans).

It is imperative that all WSI stakeholders contribute from an early stage and throughout the preparation of the RSS to ensure that a common understanding for growth plans is secured and that policies devised at this level are appropriate.

2.2: Preparing Regional Spatial Strategies

The preparation of a Regional Spatial Strategy (RSS) can take three to five years from start to finish while a robust evidence base is gathered. RSS's will be subject to an ongoing review process including extensive consultation, appraisal and testing.

Refer to Diagram 2: The RSS & Local Development Framework process on page 15.

In the past, the water industry has not been a strong player in the development plan preparation process. However, as noted in the *East of England Panel Report* (para. 2.6), "the industry (should) play a more pro-active and inter-active role in the strategic planning process", further noting that in the past they may have "not realised... the power they can



Photo: Essex & Suffolk Water



Photo: Anglian Water

Issue - there is a need for ongoing liaison between planners, water companies and the Environment Agency in order to ensure that the scale and distribution of housing and future demand is understood, planned for, and associated infrastructure is funded for in the long-term.

and probably should exercise in helping to generate strategic plans as well as implementing them.” The House of Lords Science and Technology Committee made similar comments in its ‘Water Management’ Report of June 2006.

Therefore, to ensure Water Services Infrastructure (WSI) issues are properly taken into account in preparing the RSS, the Regional Planning Body should:

- inform all WSI stakeholders of their role and influence in the planning process and encourage them to participate in its preparation;
- liaise and work together with water companies and the Environment Agency at an early stage to prepare an issues paper of the likely implications of growth on WSI. This consultation should continue throughout the process;
- consider the impact of the RSS on water supply and water quality with major stakeholders;
- co-ordinate and prepare an implementation plan indicating priorities, scale of investment, timing and feasibility within the growth programme for the area;
- ensure the knowledge of the water companies is sought and used to inform strategic decisions. For example, how it could influence the broad distribution of industry, support services and houses proposed across the region;
- ensure relevant Water Resources Plans and Asset Management Plans also inform this process. A two way process will also help the water companies prepare and revise their own plans accordingly;
- provide a reliable, up to date and consistent set of forecast housing numbers and related demographic data throughout the drafting process. This helps water companies and the Environment Agency prepare/update their own plans with confidence;
- ensure the RSS is subject to an iterative Sustainability Appraisal incorporating a Strategic Environmental Assessment (SEA) which should reflect the latest water and environmental modelling work. It should acknowledge relevant existing water resource policy, strategic plans and programmes of the water companies and the Environment Agency, and address the impact of growth on the water environment, water resources and water quality;
- encourage all landowners and developers who promote major new developments to set out what the implications of their proposals will be on water provision and wastewater disposal.

Did you know...?

- Water companies funding, including investment in Water Services Infrastructure (WSI), is considered by Ofwat on a five-year cycle – the current cycle runs from 2005 to 2010. Water companies often have to agree funding and investment on out of date development plans, as the planning system is often slow and uncertain when in its draft stages;
- Water companies plan in advance for strategic growth as part of their five yearly asset management plan reviews. These plans are submitted to Ofwat for funding approval, often taking into account historic and current growth trends and identify the WSI investment needed. However, Ofwat is unable to fund infrastructure beyond five years if there is uncertainty in future growth;
- The Environment Agency's Regional Water Resources Plans take a view on the water resources position in a region over a 25-year period and consider future water needs of the environment and other users, including public water supply. Regional growth estimates are built into these forecasts but again may not reflect rates proposed by recent RSS reviews;
- In many regions, the Environment Agency believes that growth will require additional water resources e.g. the transfer of water between water company supply zones, the large scale recycling of wastewater, as well as a significant reduction in water consumption through water efficiency measures;
- In some catchments, growth may impact on wastewater quality to the detriment of the water environment, and increased volumes of wastewater and runoff could impact on flooding.





Photo: Anglian Water

2.3: Issues/Actions Table

- There is a need to strengthen existing water and house building regulations to promote water efficiency and water conservation. The Department for Communities and Local Government 'Proposals for introducing a Code for Sustainable Homes' should go some way to addressing this. In addition the Regional Spatial Strategy (RSS) should stipulate that all new development meets the highest achievable standards e.g. Building Research Establishment's Environmental Appraisal Method's Ecohomes 'very good' or 'excellent';
- The long-term impact of existing water efficiency measures remains uncertain. This has the potential to create uncertainty when determining the capacity of additional Water Services Infrastructure;
- All relevant organisations (government offices, regulators and water service providers) should agree the data that is required and the analytical processes needed to ensure financial and regulatory support of WSI growth plans by water companies;
- The Environment Agency and the relevant water companies should ensure that they play a full part in the preparatory stages of RSS reviews to ensure that spatial constraints and regionally significant infrastructure requirements are built into the Sustainability Appraisal/Strategic Environmental Assessment process and the draft revisions;
- The Environment Agency and water company plans need to reflect changing growth rates (in the revised RSS) in their plans;
- Revision of RSS growth rates give rise to uncertainty in WSI provision and may have an impact on water companies securing long term infrastructure funding;
- The geographical boundaries of the various stakeholders' plans do not coincide and as such an element of judgement is required in determining e.g. growth numbers.

- South East England Regional Assembly Draft South East Plan – Technical Note 4 – Water (Updated) – www.southeast-ra.gov.uk/southeastplan/plan/view_plan.html;
- East of England Plan, EERA, Dec 2004 – www.eera.gov.uk/category.asp?cat=452;
- East of England Plan, Report of the Panel, June 2006 – www.goeast.gov.uk/goeast/planning/regional_planning/?a=42496;
- House of Lords Science and Technology Committee "Water Management" Report, June 2006 – www.publications.parliament.uk/pa/ld200506/ldselect/ldscstech/191/191i.pdf;
- MKSM Sub-Regional Strategy, Secretary of State, March 2004 – www.goeast.gov.uk/goeast/planning/regional_planning/regional_spatial_strategy/mksm_sub-regional_strategy/;
- DCLG Planning Policy Statements: Regional Spatial Strategies – www.communities.gov.uk/index.asp?id=1143839;
- Local Development Frameworks – www.communities.gov.uk/index.asp?id=1143846;
- Development and Flood Risk – www.communities.gov.uk/index.asp?id=1162059;
- West Midlands Regional Assembly Regional Spatial Strategy – www.wmra.gov.uk/page.asp?id=49;
- Government Office East Midlands Regional Spatial Strategy – www.goem.gov.uk/goem/psc/suscom/rss/;
- Sustainability Appraisal Guidance – www.communities.gov.uk/index.asp?id=1164579;
- BREEAM and EcoHomes – www.bre.co.uk;
- Proposals for Introducing a Code for Sustainable Homes – A Consultation Paper – www.communities.gov.uk/index.asp?id=1162094.

2.4 CASE STUDY

South East Plan

Introduction

The Environment Agency has prepared evidence for use in developing the South East Plan in collaboration with the South East England Regional Assembly and the region's water companies. This includes an assessment of the implications of housing growth on the public water supply-demand balance and summarises work being undertaken on the implications for flood risk management, waste water treatment and water quality.

Water Resources – Scenarios and Modelling

The Environment Agency and the water companies have explored the impact of different levels of housing growth on the public water supply-demand balance including: improvements in water efficiency and the development of new resources over different time periods (2010, 2015, 2025) from a baseline picture of 2005.

The scenarios examined take account of strategic water transfers, sustainability reductions, and the effect of climate change. In order to ensure public water supply under all growth scenarios, there will be a need for improved water efficiency (in new houses but also potentially in existing stock) combined with provision of new water resources. The scenarios modelled assume 76% of projected water deficits are met by new resource development, and 24% by the management of demand (through 25% efficiency in new developments and 21% efficiency in 20% of existing homes).

Water Treatment and Quality

The Environment Agency is also working with the Assembly and water companies to identify areas where further investment is required in sewage treatment due to physical constraints, water quality or ecological concerns. In extreme circumstances new development may have to be limited if problems are too difficult or costly to overcome.

Flood Risk Management

The Environment Agency has produced flood zone maps illustrating flood probability and advises on potential developments in such areas. Policy NRM3 of the draft South East Plan addresses sustainable flood risk management, recommending that land use and essential development design in such areas should be guided by flood risk assessments. It also advises on options for innovative flood risk management, including increasing water storage capacity and sustainable drainage schemes.

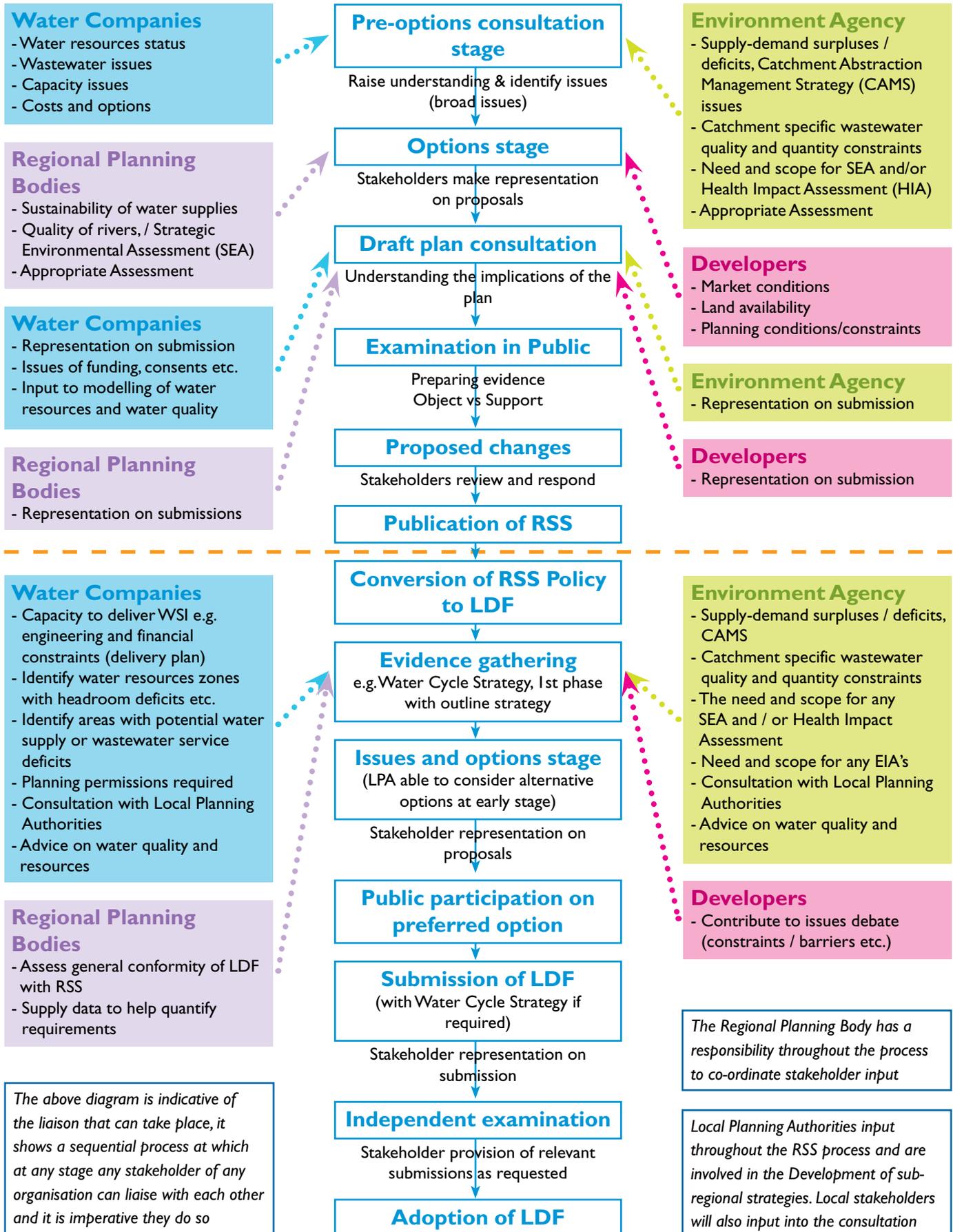
Conclusions

Key to the process is that planners, regulators and WSI providers must collaborate and work closely together. Water demand can be met through greater water efficiency and new supplies, and wastewater through timely investment in new treatment facilities. However, both may require changes to the current financing of the required infrastructure and encouragement of behavioural change in water consumption. The Environment Agency has been a key consultee in development of more detailed Sub-Regional strategies.



Photo: South East England Regional Assembly

Diagram 2: The Regional Spatial Strategy & Local Development Framework process



3. What to do when preparing Local Development Plans



Photo: Anglian Water

3.1: What is a Local Development Framework?

The Local Development Framework (LDF) is a suite of Local Development Documents, which together cover the whole of a local planning authority's district and give comprehensive planning policy coverage. The LDF should be prepared within the guidelines of the relevant Regional Spatial Strategy (RSS).

Ideally issues raised at the RSS level should be resolved prior to development of the LDF. If they are not resolved the issues need to be accommodated as best they can at a local level e.g. local water efficiency targets and targeted initiatives.

The LDF defines where and how development occurs and therefore largely where and how much water is required and needs to be disposed of. It is therefore imperative that a discussion of issues takes place between all key stakeholders throughout the LDF's preparation and agreement as to the location, scale and type of growth. The LDF should be subject to an iterative Sustainability Appraisal incorporating a Strategic Environmental Assessment (SEA) which should address impacts on the water environment, water resources and water quality. Refer to Diagram 2: **The Regional Spatial Strategy & Local Development Framework process** on page 15.

3.2: Preparing Local Development Frameworks

When preparing a Local Development Framework (LDF) the local planning authority should ensure the following Water Services Infrastructure (WSI) issues are taken into account:

- make clear to all water companies and stakeholders the recent changes in the planning process and encourage their participation;
- communicate with water companies and the Environment Agency throughout the process, consider the need for a local 'before and after water and wastewater' issues paper;
- provide reliable, detailed sets of population numbers and locations, and appropriate timescales for delivery of the required WSI to the water companies and the Environment Agency so they can update their plans with confidence;
- consider the use of a Water Cycle Strategy in order to identify options for growth (with involvement from the Environment Agency, water companies, local planning authorities and others as appropriate);
- in allocating sites, take note of the recent East of England Panel Report which states (para. 9.37) that Local Development Documents *"must be sensitive to the need to make the most of areas with spare capacity in the water supply infrastructure and ensure that building rates do not run ahead of the completion of new infrastructure if, in any area, temporary capacity constraints are likely"*;
- review the need to reinforce specific water policies through supplementary planning documents e.g. water efficiency measures to conserve water and minimise the impact of wastewater on the environment, and the need for Sustainable Drainage Systems to minimise the impact on flooding (relevant policies should be included as part of the Development Plan Document);
- use appropriate time scales for the construction of any major water and/or wastewater infrastructure associated with development proposals;
- promote local environmental and recreational initiatives, which reflect local character and enhance Green Infrastructure;
- in preparing their LDFs, LPAs should include positive policies to support development by water companies of water and sewerage infrastructure to support growth and environmental objectives.



It is anticipated that all local planning authorities will publish, at the outset of the LDF process, a Local Development Scheme which sets out what will be produced and when.

Did you know...?

- The Environment Agency produces Catchment Abstraction Management Strategies (CAMS). CAMS identify areas where water abstraction has potentially unacceptable environmental impacts. They show areas of water stress within a catchment and where water companies' abstraction rights may need to be reviewed and alternatives sought;
- The Environment Agency's regulatory responsibilities are location specific and include an assessment of environmental impacts of abstraction licences and discharge consents on a site by site basis;
- Where the water companies consider that the funding previously approved by the Water Services Regulation Authority (Ofwat) might be insufficient, this will need to be addressed through discussion with planning authorities and developers until any funding issues are resolved;
- Water companies that are well informed and involved in future planning of development will be in a stronger position to justify investment plans with the Water Services Regulation Authority (Ofwat), and will be well prepared to gain all the necessary authorisations (planning permissions, abstraction licences, and discharge consents) to ensure WSI schemes are completed in a timely fashion enabling development to proceed as planned;
- Water companies provide annual returns to the Water Services Regulation Authority (Ofwat) and the Environment Agency, which includes aspects of growth and environmental performance; this highlights emerging issues, including those associated with growth.



Photo: Anglian Water

3.3: Issues/Actions Table

- If there are significant changes in proposed growth as the plan progresses from Regional Spatial Strategies (RSS) to Local Development Frameworks (LDF) the Environment Agency and water companies need to be involved;
- Information on the contents of LDFs (development locations, time scales, planning horizons etc.) and the type and content of Development Plan Documents should be made available, and any issues identified;
- Development plans may need to be modified if variations to new or existing consents are required, and funding for Water Services Infrastructure (WSI) provision is inadequate;
- When WSI investment plans, e.g. Asset Management Plans, and options are developed all key stakeholders must have the opportunity to participate;
- The preferred sustainable solution may not be the least cost solution that would naturally emerge from traditional engineering appraisals. It is therefore essential that sustainable best codes of practice be incorporated into the planning process in order to create a 'level playing field' for all potential developers and service providers;
- The length of the planning horizon should be increased to facilitate timely implementation e.g. sufficient time to enable water infrastructure to be planned, approved and funded. See para. 2.14 of PPS12;
- Development should conform with a WSI strategy which should ensure that development is co-ordinated in terms of location, size and time schedule/phasing. The relevant planning body should ensure there is an adequate over-arching monitoring plan in place to help track the implementation of sustainable WSI solutions in a timely and efficient manner;
- Local Planning Authorities should adopt Supplementary Planning Documents which conform with the Department for Communities and Local Government's needs and principles of Sustainable Development, building and water supply regulations, and standards in respect of compliance with water, environmental and planning permissions through monitoring e.g. standards that relate to water efficiency.

- Department for Communities and Local Government Planning Policy Statement 12 (PPS12): Local Development Frameworks – www.communities.gov.uk/index.asp?id=1143846;
- Local Development Framework Monitoring: A Good Practice Guide, ODPM, March 2005 – www.communities.gov.uk/pub/906/LocalDevelopmentFrameworkMonitoringAGoodPracticeGuidePDF858Kb_id1143906.pdf#search=%22www.communities.gov.uk%2Fpub%2F906%2F%22.

3.4 CASE STUDY

Corby Water Cycle Strategy

Introduction

Government proposals to regenerate Corby will double the population, to 120,000, by 2031. The Environment Agency has worked with Anglian Water Services, Corby Borough Council and Catalyst Corby, now North Northants Development Company (NNDC), to ensure that there is a strategic approach to the management and usage of water. In total circa £72M of additional flood storage, water supply and sewage treatment infrastructure will be required. This strategy identifies at a high level, details of what is needed, when it is needed and what the next steps are.

Planning Process

The Environment Agency objected to the planning consultation of certain major new developments on the grounds of environmental concern relating to wastewater quality and volumes. In addition there was not a Water Cycle Strategy in place to assist in developing sustainable solutions. Urgent attention needed to be given to the phasing of Water Services Infrastructure (WSI) to avoid the Regeneration Framework being delayed. Stakeholders agreed that a strategy was required and a programme of its implementation agreed. A strategic approach was required. Stakeholders agreed to the outcome of the strategy and a programme of its implementation. Phase 1 of the Corby Water Cycle Strategy allows the development process to continue by:

- confirming the feasibility of providing WSI to meet the proposed scale of growth;

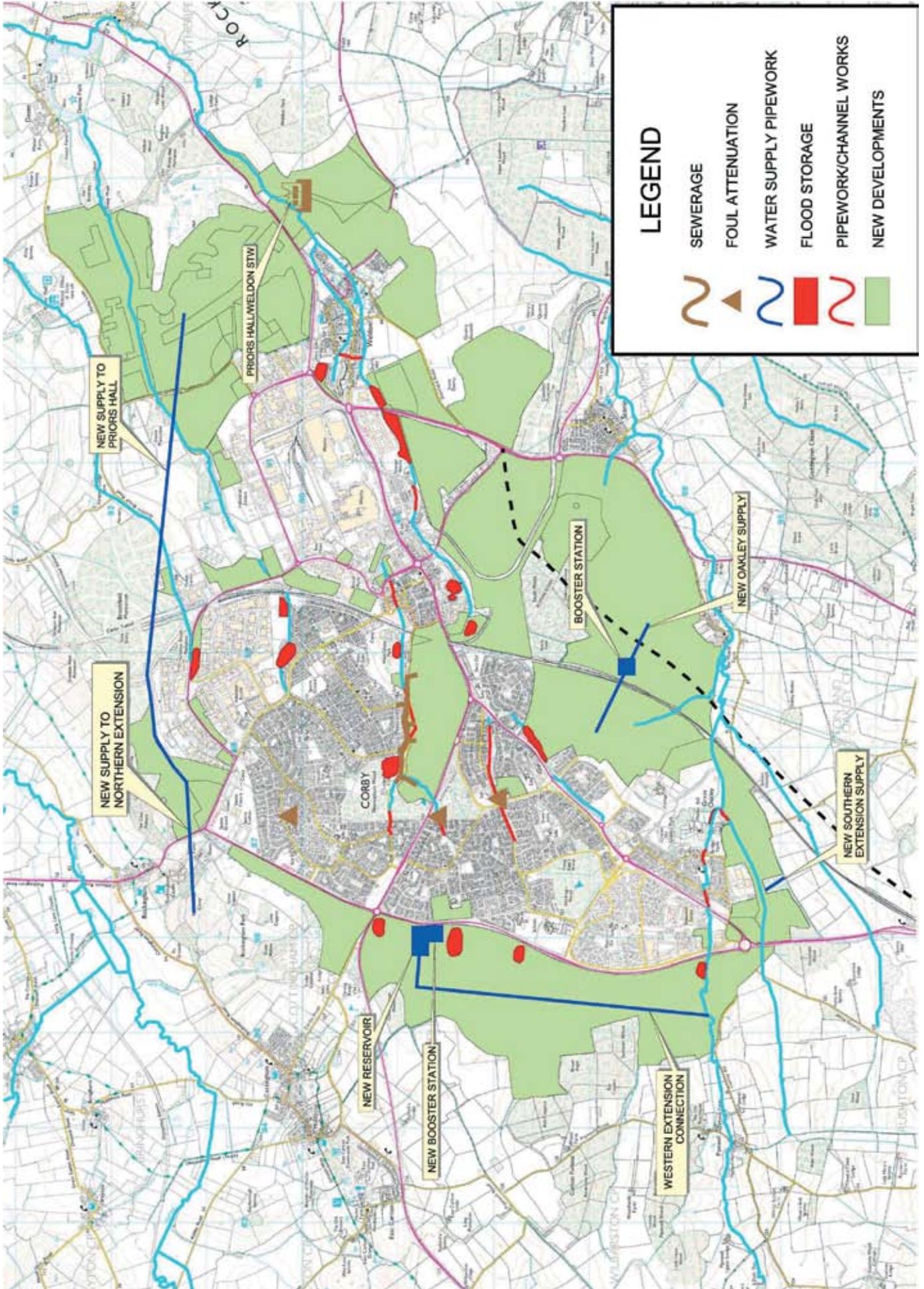
- setting out requirements for managing flood risk, water quality and water demand that subsequently need to be met for planning applications to be implemented;
- identifying requirements for sustainable development and Green Infrastructure;
- identifying the major constraints of sewage treatment and water supply;
- identifying the overall cost of the WSI required.

The specific measures it will put in place are:

- a developer checklist advising developers what they need to do to comply with the Strategy;
- a summary flowchart to guide developers through the planning agreement process;
- identification of areas where additional funding is needed to meet the needs of the Strategy;
- a funding plan that can be used to levy developer contributions and pay for the flood mitigation works required.

Summary

In order to meet the demand for housing and industry in Corby £73M needs to be spent on water infrastructure. Flood risk will need to be minimised by use of sustainable drainage systems, rainwater harvesting and by the provision of additional balancing facilities. Water supply and sewerage capacity need to be enhanced as a matter of urgency and discussions need to take place with the Water Services Regulation Authority (Ofwat) and the Department for Communities and Local Government to enable water companies to plan strategically.



4. What to do when a Planning Application is proposed and considered

4.1: Planning Applications and Water

The planning system is plan-led. This means that development will not usually be allowed to go ahead if it does not comply with the relevant approved plan/Local Development Framework for the area. By consulting early in the process the planning application can be modified by the developer to incorporate sustainable Water Services Infrastructure (WSI) solutions resulting in an improved local environment for the community. This will be far more effective than trying to modify plans after a developer has applied for planning permission on a specific site.

Planning applications have to be submitted for most forms of development, and depending on the scale and type of development proposed, can have a significant impact on the size and complexity of WSI required. Water companies are not statutory consultees and historically this issue has often been neglected or considered too late in the planning application process. Town and Country Planning best practice in handling planning applications is for local planning authorities to consult with water companies on the potential impact of development on WSI, particularly on complex sites. This is encouraged by water companies e.g. Thames Water's 'A Guide for Local Planning Authorities', April 2004. There is a need for this type of approach to be more widely adopted.

This part of the guide gives an indication (not exhaustive) of what developers and planners alike should consider as part of the planning application process.



Photo: Janet Jackson



Main photo and Inset: Janet Jackson

4.2: Preparing a Planning Application

Developers should consider the impact of their development on Water Services Infrastructure (WSI) and potential solutions before they submit a planning application. Depending on the scale of the development, it may be necessary to submit supporting evidence with the planning application which assesses the current capacity of the WSI system, details all the provisions to be made to provide and dispose of water on the site and off site especially where works (including treatment) have been identified as part of a Water Cycle Strategy. This should include surface water and flooding issues. It is important to discuss these with the local authority, the water companies and the Environment Agency.

The options considered and the analytical process adopted should include the principles of sustainable development as identified in Section 1.3. For large sites in major growth areas a strategic approach should be considered e.g. Section 3.4: Case Study - Corby Water Cycle Strategy. The water companies will need to be satisfied that they can deliver the preferred option and the Environment Agency is satisfied that it will not damage the environment.

The success of this approach will also depend on how well 'codes of best practice' and relevant Supplementary Planning Documents are incorporated into the plans and planning permissions. The overall intention of these should be to minimise the need for additional water supplies, to reduce the volumes and improve the quality of waste water. This approach should also be considered during the construction and commissioning stages of any new works and infrastructure.

4.3: Considering a Planning Application

Local Planning Authorities should consider the impact of proposed developments on Water Services Infrastructure (WSI) during the planning application process to give WSI more significance than has often been the case in the past.

Refer to Diagram 3: Planning Application process on page 25.





To enable this local authorities need to:

- know who to consult once a planning application is received e.g. the names and addresses of local water companies and service providers;
- agree arrangements on when to consult with water companies;
- agree arrangements on when to consult with Internal Drainage Boards;
- have access to an officer who is experienced in understanding the finances and costs involved with the provision of WSI;
- use Section 106 or planning conditions in relation to surface water drainage, flooding or other water issues. Standard conditions should be prepared, which can be tailored to individual developments;
- consult with water companies on policy statements and planning conditions to assist in the provision of timely and sustainable WSI solutions;
- be aware that when a development is subject to Environmental Impact Assessment regulations that the water companies and Environment Agency need the opportunity to be consulted on screening and scoping options (particularly where the development could adversely impact on WSI capacity);
- feedback to the water companies and the Environment Agency on the appropriateness of their advice, how better it could be tailored to comply with the emerging planning process and how they can support local planning authorities through any appeal processes;
- consult Building Control Officers on requirements which relate to water and sewerage matters. If necessary, condition applications to restrict development until adequate infrastructure is in place.

Did you know...?

- Water companies have a duty to satisfy the WSI needs of development through the provision of services and monitoring compliance with water supply regulations;
- The Water Services Regulation Authority (Ofwat) monitor and report on the performance of the water companies annually and in particular on water consumption and water efficiency;
- The Department for the Environment, Food and Rural Affairs (DEFRA) and Department for Communities and Local Government (DCLG) periodically update water and building regulations which include certain aspects of water efficiency and conservation;
- That guidance on the need to consult with water and/or sewerage undertakers when a development could impact on WSI can be found in a number of government circulars e.g. *Circular 20/89*. Check for confirmation that infrastructure capacity is available;
- There are several bodies and organisations investigating new technologies and practices to assist in the promotion of sustainable buildings and environmentally friendly solutions. These can be used to guide planners and developers towards adopting sustainable solutions;
- There are several national bodies and organisations such as Water UK, DEFRA and the Chartered Institution of Water and Environmental Management (CIWEM) who are promoting changes in legislation and encouraging joined up policies to assist planners and developers in providing sustainable solutions.

4.4: Issues/Actions Table

- The developer should meet the required standards for sustainable homes and customers should achieve the intended level of water consumption assumed in Environment Agency and water companies' plans;
- The relevant authorities should ensure that adequate assessment of planning applications takes place to ensure the developer has demonstrated compliance with water, environmental and planning permissions/policies/codes of practice that have been previously agreed by all stakeholders. In the event this has not been demonstrated, refusal of the planning permission should be considered;
- The relevant authorities should ensure that adequate monitoring takes place in respect of compliance with water, environmental and planning permissions and include this requirement in their monitoring plans;
- Development that is proposed on 'non allocated' land is unlikely to be included in water companies' infrastructure plans. Therefore in these circumstances the impact on Water Services Infrastructure is unlikely to have been considered;
- Where development takes place over a number of years and by several developers in the same area, the sizing and funding of infrastructure may prove problematical; particularly if, to achieve a sustainable solution, infrastructure needs to be in place in advance of the later phases of development. These problems can be considerably resolved if an early strategic approach has been taken at the outline planning stage.

4.5 CASE STUDY

Further resources

- Department for Communities and Local Government Planning Policy Statement 25: Development and Flood Risk (DRAFT – Dec 2005) – www.communities.gov.uk/index.asp?id=1162059;
- Planning Application and Development Plan Consultation with Thames Water Utilities Statutory Water and Sewerage Undertaker: 'A guide for Local Planning Authorities', Thames Water, April 2004;
- Planning Portal – Learn how to apply – Learn how to make an application – www.planningportal.gov.uk/england/genpub/en/1010677919308.html;
- Proposals for Introducing a Code for Sustainable Homes – A Consultation Paper – www.communities.gov.uk/index.asp?id=1162094;
- Building Futures A Hertfordshire Guide to Promoting Sustainability in Development www.hertsdirect.org/yrccouncil/hcc/env/plan/issues/buildingfuturesustainability/;
- OFWAT, Security of supply, leakage and the efficient use of water 2004-05 report – [www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/AttachmentsByTitle/leakage_04-05.pdf/\\$FILE/leakage_04-05.pdf](http://www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/AttachmentsByTitle/leakage_04-05.pdf/$FILE/leakage_04-05.pdf);
- CIWEM – www.ciwem.org/resources/;
- DCLG – www.communities.gov.uk/;
- DEFRA: Water Industry – www.defra.gov.uk/environment/water/industry/index.htm;
- DEFRA: Water conservation: Water Saving Group – www.defra.gov.uk/environment/water/conselve/wsg/index.htm;
- Environment Agency: Demand Management Bulletin – www.environment-agency.gov.uk/subjects/waterres/286587/286599/;
- Environment Agency: Water Resources – www.environment-agency.gov.uk/subjects/waterres/?lang=_e;
- Water UK – www.ukwir.org/site/web/content/home;
- Association of Drainage Authorities (ADA) – www.ada.org.uk.

Millennium Green, Nottinghamshire

Site background

The winner of the Environment Agency's 2003 Water Efficiency Awards was Gusto's Millennium Green project near Newark. The development was awarded this for using a variety of water saving techniques and incorporating other environmental measures into the site.

The scheme

Designed and developed by Gusto Homes, 24 houses and an office use an automated rainwater harvesting system, halving the amount of water they use. The system has proved so successful that it is sold by Gusto to other developers to be used as part of their approach to sustainable drainage systems.

The buildings were fitted with an advanced system that the company developed itself. Called Freerain, the system allows water to be stored in underground tanks. This harvested water is not for drinking, but is used for flushing toilets, washing machines and the garden. However the system is still dependent on mains water and when the supply becomes low, the tank is automatically topped up by mains water. Other environmental features of the development are:

- dual flush toilets;
- aerated taps and shower units;
- solar water heaters;
- heat-recovery air conditioning.

Following detailed analysis of two homes on the site, it was found that the combination of the harvesting system and the water efficient appliances reduced water use by 50m³ each year. Gusto was able to make even more savings by reducing the size of the water infrastructure such as the storm drains and soakaways.

Using sustainable drainage systems

More recently the company has developed a system integrating rainwater harvesting with a sustainable urban drainage approach. This system allows overflow from the storage tank to feed into another tank instead of flowing into soakaways. This water can then be released at a controlled rate and manner.

Sharing good practice

As a result of the success of the Millennium Green project, Gusto provides complete rainwater harvesting systems to other development companies. They helped establish the Association of Rainwater Recycling Companies whose aim is to encourage high standards in designing and providing similar systems.

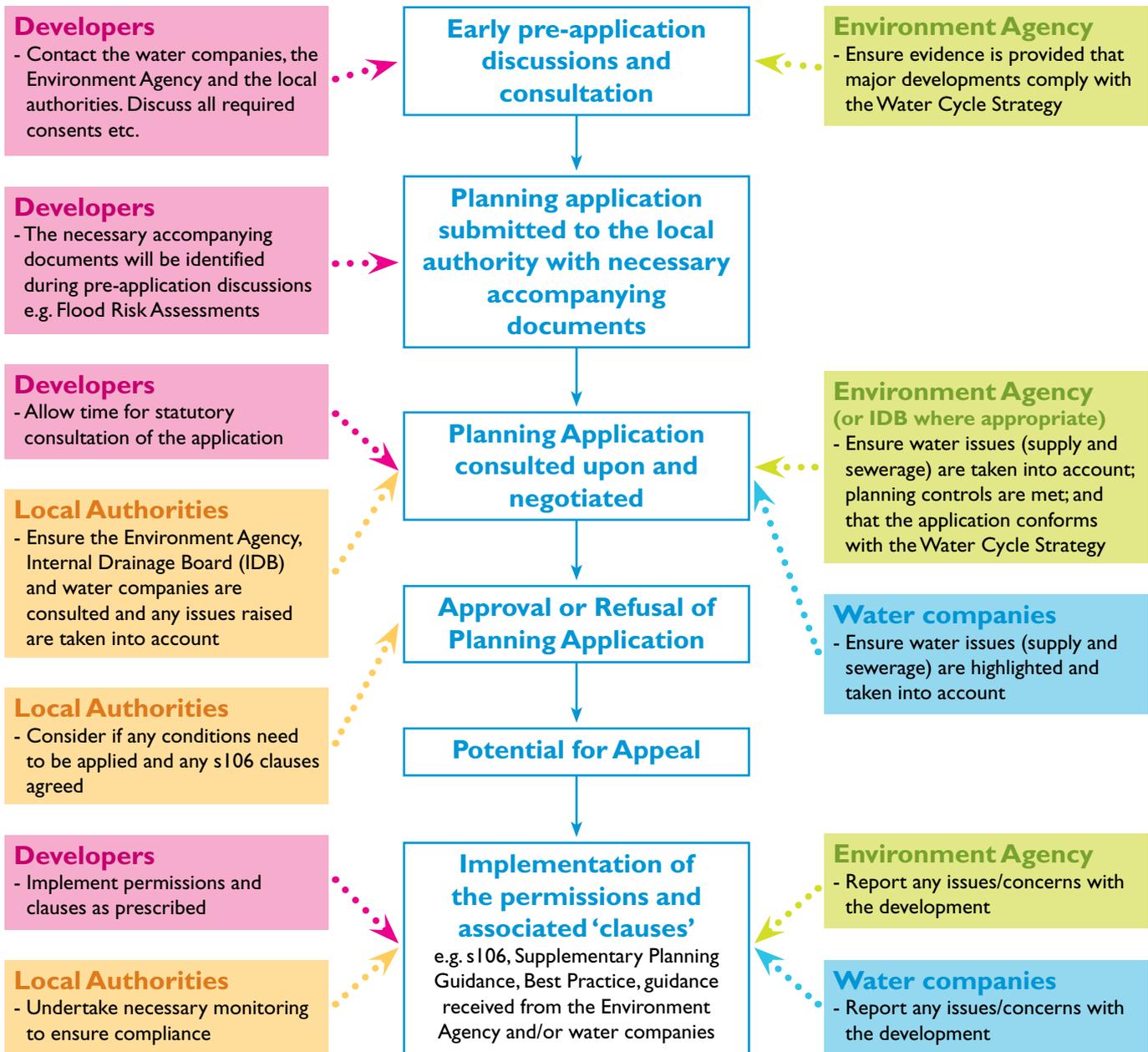


Photos: Gusto Homes



As technology advances and policies change it is anticipated that the case studies included in the document will be superseded by even more sustainable practices.

Diagram 3: Planning Application Process



Glossary of terms

Asset Management Plans

– Investment programme for each water company.

BREEAM – BRE's Building

Environmental Assessment Method, used to assess the environmental performance of new and existing homes.

Catchment Abstraction

Management Strategies (CAMS)

– ensure water resources allocations are in the public domain and help balance the needs of abstractors and the aquatic environment.

Catchment Flood Management Plan

(CFMP) – high level strategic planning tools through which the Environment Agency will seek to work with other key decision-makers within a river catchment to identify and agree policies for sustainable flood risk management.

Chartered Institution of Water and Environmental Management

(CIWEM) – multi-disciplinary institution for professionals working in the water and environmental management sector.

Code for Sustainable Homes

– signals a new direction for building standards. Wherever practicable DCLG intend to develop and introduce a system of sustainable building standards based on voluntary compliance.

Department for the Environment Food and Rural Affairs (DEFRA)

– core purpose is to improve the current and future quality of life.

Development Plan Documents

(DPDs) – spatial planning documents that are subject to independent examination, and together with the relevant Regional Spatial Strategy, will form the development plan for a local authority area for the purposes of the Planning and Compulsory Purchase Act 2004.

Department for Communities and Local Government (DCLG) (formerly ODPM)

– created on the 5th May 2006 with a powerful remit to promote community cohesion and equality, as well as responsibility for housing, urban regeneration, planning and local government.

Environment Agency (EA)

– responsible for looking after the environment and making it a better place - for people now, and for future generations.

Environmental Capacity – the ability of a watercourse to maintain environmental quality and to accommodate higher flows.

Environmental Impact Assessment

(EIA) – process by which the likely impacts of a project upon the environment are collated, assessed and taken into account before a project can be allowed to go ahead.

Examination in Public (EIP)

– ensure that there is discussion in public of those major issues of concern where the Panel considers that an examination could usefully expose the pros and cons of proposed plans.

Green Infrastructure (GI)

– a network of multi-functional greenspace, provided across the Sub-Region. It is set within, and contributes to, a high quality natural and built environment and is required to deliver “liveability” for new communities.

Health Impact Assessment (HIA)

– an approach that ensures decision making at all levels considers the potential impacts of decisions on health and health inequalities.

Internal Drainage Boards (IDBs)

– These are local drainage authorities established historically in low-lying areas with particular land drainage problems. IDBs have responsibilities and powers under the Land Drainage Acts 1991 and 1994 and their own byelaws.

Local Authority – an administrative unit of local government.

Local Development Documents

(LDDs) – they include the Local Development Scheme, Statement of Community Involvement, Core Strategy, Development Plan Documents, the Annual Monitoring Report and Supplementary Planning Documents, which together make up the Local Development Framework (LDF).

Local Development Framework

(LDF) – a portfolio of local development documents that will provide a framework for meeting the community's economic, social and environmental aims.

Local Delivery Vehicles (LDVs)

– partnerships which bring the public and private sectors together to deliver large-scale social, economic and environmental change to deliver the Government's Sustainable Communities Plan.

Ofwat – the economic regulator for the water and sewerage industry in England and Wales. (from 1 April 2006, the Water Act (2003) introduced a new regulator, the Water Services Regulation Authority (WSRA). The WSRA will take over the role of Ofwat, the Office of the Director General of Water Services, and Ofwat will be abolished).

Planning Policy Statements (PPSs)

– set out the Government's national policies on different aspects of planning. The policies in this statement apply throughout England and focus on procedural policy and the process of preparing local development documents.

Properties – within the guide this includes homes and businesses.

Restoring Sustainable Abstractions

(RSA) – set up by the Environment Agency in 1999 to identify and catalogue those sites which may be at risk from unsustainable abstraction. The RSA Programme is a way of prioritising and progressively examining and resolving these concerns.

River Basin Management Plans

– these set out a strategic and policy framework for water management within each River Basin District.

Section 106 – secure community infrastructure to meet the needs of residents in new developments and/or to mitigate the impact of new developments upon existing community facilities.

Sewage Treatment Works (STWs)

– separates solids from liquids by physical processes and purifies the liquid by biological processes. Discharges from sewage treatment works may contain a range of pollutants and need to be carefully monitored.

South East England Regional

Assembly – representative voice of the region and a regional planning body, part-funded by the region's local authorities and has the opportunity to draw down resources directly from central government.

Statutory – denotes something that is defined in legislation.

Strategic Environmental

Assessment (SEA) – systematic appraisal of the potential environmental consequences of high-level decision-making such as policies, plans, strategies and programmes before they are approved. SEA is closely linked to environmental impact assessment (EIA) by providing the context for project-level EIA.

Sub-Regional Strategy – clear, agreed, strategy and a long-term spatial vision for the sub-region.

Supplementary Planning Document

(SPD) – this guidance elaborates upon the policy and proposals in DPDs but does not have development plan status. Their weight as a material consideration will reflect their status as part of the LDF.

Sustainable Development

– development which enables all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations.

Sustainable Urban Drainage

Systems (SuDS) – the SuDS approach to drainage draws upon a wide range of techniques to produce a sustainable drainage solution which endeavours to mimic as closely as possible the natural pattern of runoff from a site.

Sustainability Appraisal – bringing together environmental, social and economic considerations in the assessment process.

Water Companies – water and wastewater service provision is subject to competition, certain elements can be provided by providers other than licensed water undertakers. This includes water service providers in the private sector as well as licensed water undertakers and 'other' providers such as new entrants. Therefore for the purpose of this guide reference is made to 'water companies' in a generic sense only.

Water Cycle – technically known as the hydrological cycle — is the continuous circulation of water within the Earth's hydrosphere, and is driven by solar radiation.

Water Framework Directive (WFD)

– aims to protect and enhance our water environment, promote sustainable water consumption, reduce water pollution and lessen the effects of floods and droughts. It updates all existing European legislation and promotes a new approach to water management through river basin planning.

Water Resources Plan – plan for the management of water that will protect the long term future of the environment and encourage sustainability.

Water Resources Zone – defined by the water supply/demand balance in the region such that all customers within it receive the same level of service in terms of reliability of water supply.

Water UK – industry association that represents all UK water and wastewater service suppliers at national and European level.



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