



Rutland
County Council

**RUTLAND COUNTY COUNCIL
DRAFT WATER CYCLE STUDY
OCTOBER 2023**

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Note:

At the time of preparing this report the Environment Agency mapping layers were awaited. This means that some of the maps included within the report are copied from the Environment Agency’s website. As soon as the requested layers have been received the maps in this report will be updated.

1. Introduction

- 1.1 The Water Cycle Study (WCS) assesses the potential issues relating to future development within Rutland and the impacts on water supply, wastewater collection, and wastewater treatment.
- 1.2 This is the draft Scoping Study, which focuses on identifying the high-level constraints and capacity in existing water and wastewater infrastructure.
- 1.3 The WCS has been developed through engagement and input with stakeholders within the local planning authority areas, with water and wastewater companies, the Environment Agency, and where any cross-boundary issues occurred, with neighbouring local authorities. This engagement will continue as the Local Plan develops.
- 1.4 New homes require the provision of clean water, safe disposal of wastewater and protection from flooding. It is possible that allocating large numbers of new homes at some locations may result in the capacity of the existing available infrastructure to be exceeded. This study will assist the Local Plan process to identify development locations where there is minimal impact on the environment, waste resources infrastructure and flood risk.
- 1.5 The WCS provides recommendations on water resources, water supply, wastewater collection, wastewater treatment, odour, flood risk, environment, and climate change, which can be used to inform the Local Plan.
- 1.6 Overall, the objective of the WCS is to identify any constraints on housing and employment growth planned for Rutland up to 2041 that may be imposed by the water and how these can be resolved i.e., by ensuring that appropriate water infrastructure is provided to support the proposed development and flood risk taken into consideration. Furthermore, it will provide a strategic approach to the management and use of water which ensures that the sustainability of the water environment in Rutland is not compromised.
- 1.7 Using national and local Environment Agency guidance, the WCS is being undertaken in stages, initially a scoping assessment and if required, a further detailed assessment.
- 1.8 Ultimately, the outputs of this study will aim to inform development of the Local Plan and help RCC to select and develop in the most sustainable locations, minimising the impact on the environment, water quality, and water resources.

2 Local Plan Profile Rutland

- 2.1 The area of Rutland is approximately 382 km² and latest data indicates that in 2021 the population was 41,381 . This is projected to rise to 45,038 by 2036 and to 46,100 by 2041 . The density of population is low with 108 people per km² . Rutland has been classed as the most rural county or unitary authority in England and Wales with a high proportion of land in agricultural use
- 2.2 Oakham is the larger of the two market towns with a population of about 12,978 and a range of education, community, health and leisure facilities, employment, shopping, a twice weekly market, a railway station and bus services to the surrounding area. Uppingham has a population of about 4,811 with a more limited range of facilities, employment and shopping, a weekly market and bus services to the surrounding area.

- 2.3 Rutland has 52 villages ranging in size from small hamlets with a few houses and no facilities to larger villages with facilities such as a school, a convenience store, a post office, general medical practice, employment opportunities, community and leisure facilities and bus links to the towns and neighbouring villages. The six largest villages each have a population of more than 1,000 and account for about 25% of Rutland's population.
- 2.4 Beyond Rutland's borders, Stamford lies just outside the county boundary, providing a range of community facilities, shopping, education, health services and acting as a service centre to some of the villages on the eastern side of Rutland. Stamford is tightly constrained by the county boundary and may have limited space to grow and meets its own needs within Lincolnshire. Corby lies approximately 3 miles south of Rutland. The Part 2 Local Plan for Corby covers the period 2011 – 2031 and includes proposal for almost 24,000 new homes, jobs, leisure and shopping facilities.

3 Water Cycle Scope Study Area

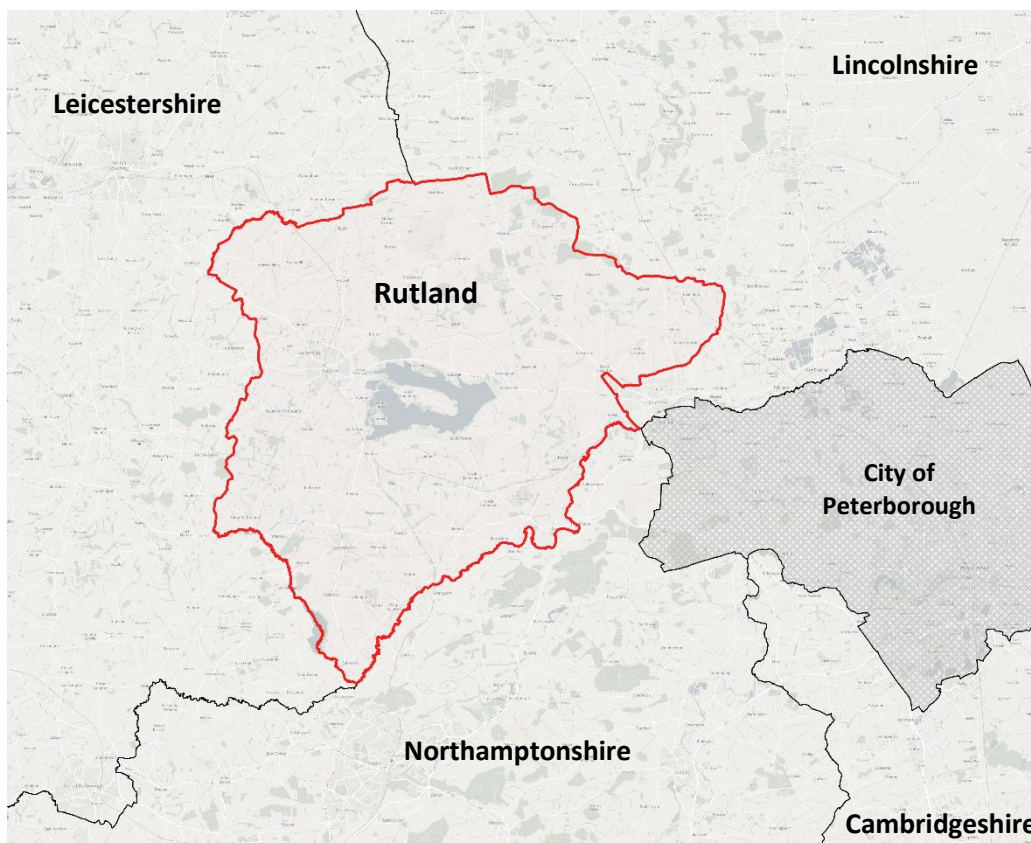


Figure 1 Rutland County Boundary with neighbouring County boundaries and extent of study area

- 3.1 Rutland is located in the East Midlands and is one of the smallest Counties in England covering an area of 393 km . It lies predominantly in the Anglian River Basin, with a small area in the north of the county in the Humber River Basin. The river system comprises the headwaters of tributaries for the Welland, Wreake and Witham. As a result, river systems can respond quite rapidly to rainfall and surface water runoff from relatively impermeable soils.
- 3.2 The County is drained predominantly by the River Chater which rises near Whatborough Hill in Leicestershire and flows east before crossing into Rutland. It continues east, to the north of Ridlington, Preston, and then to the south of Manton and the north of Wing. At North Luffenham, it meets a stream that had risen south of Ridlington. It continues north-east, going through Ketton, before meeting the River Welland.
- 3.3 Rutland also contains The Rutland Water Reservoir and part of the Eyebrooke Reservoir. Rutland Water at 3,100 acres is the largest man-made reservoir in Europe. It is maintained by Anglian Water and is fed by the North Gwash which rises just outside the village of Knossington in Leicestershire, near the western edge of Rutland. A controlled flow is released from the reservoir to maintain its flow through Empingham, around Tolethorpe Hall, Near Stamford and into the River Welland. There are also minor brooks, North Brook flows from Cottesmore through Greetham and discharges into the Gwash east of Empingham. Bisbrooke Brook flows from Uppingham eastwards where it joins the River Welland at the County Boundary.
- 3.4 A small number of watercourses in the north west of the County drain into the Rivers Wreake and Witham. Main rivers and ordinary watercourses are shown in Figure 2.
- 3.5 Rutland contains significant groundwater flows in the east of the county corresponding to limestone and sandstone rock. This corresponds to a major aquifer area. There are 11 groundwater monitoring boreholes in the east of the county, with many of these located in close proximity to the West Glen as it cuts through the far east of the county near Essendine.

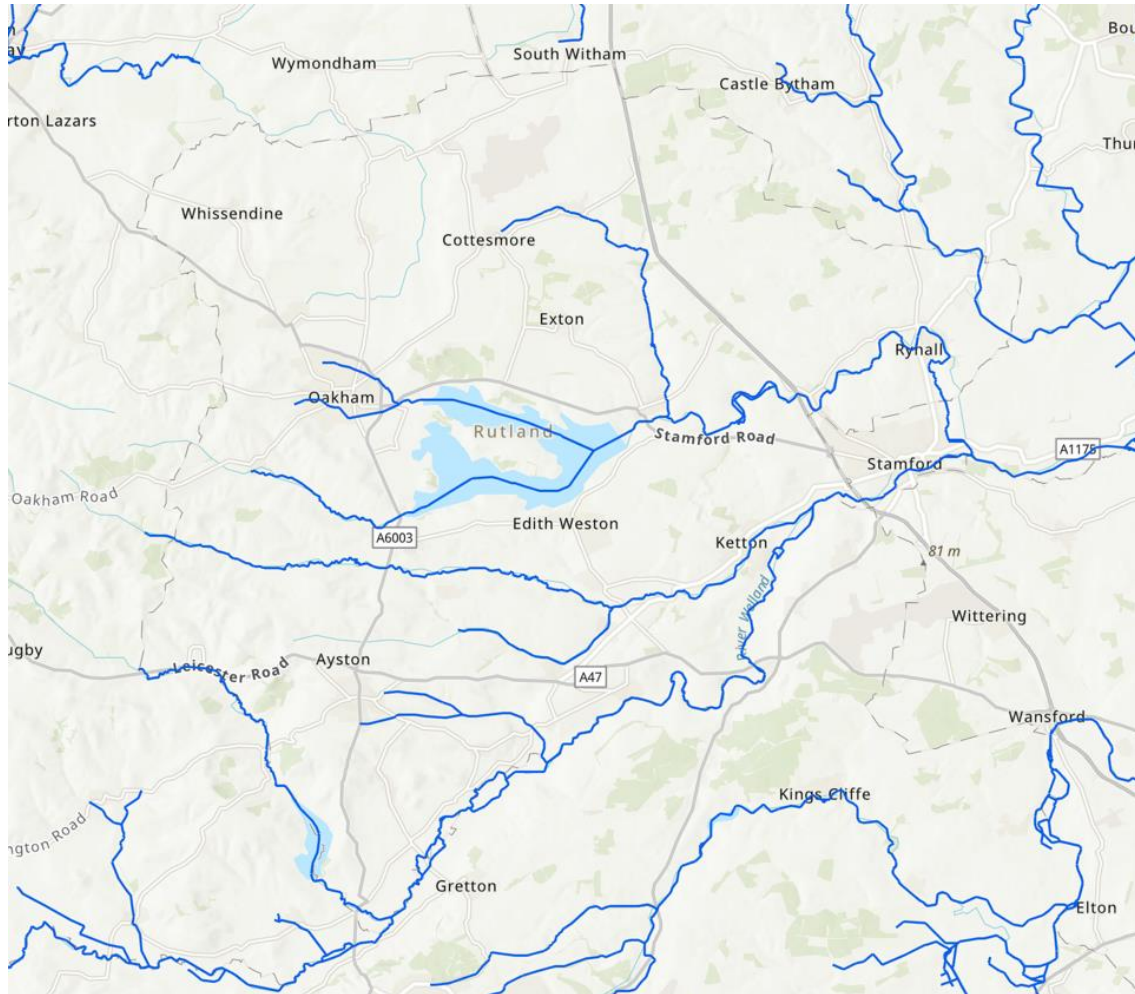


Figure 2 Draft EA Map of main and ordinary water courses.

4 The amount of growth proposed

4.1 EA guidance advises that in setting the extent of the study area, local planning authorities should consider how proposed growth can affect wider catchments. The latest (March 2023) calculation of the Local Housing Need (LHN) for Rutland is 123 dwellings per annum. This is the minimum number of houses the Council can use as the basis of preparing the Local Plan. In summer 2022 the Council consulted on Issues and options for the new Local Plan. In respect of housing growth three options were included:

- Plan for the minimum (which at that time was 140 houses per year);
- Plan for 160 dwellings per annum (in line with the SHMA2019);
- Plan for higher growth option of 190 dwellings per annum

4.2 The Issues and options consultation also included five options for the pattern and distribution of growth as follows:

- Based on Core Strategy with 70% housing directed to towns and 30% to villages
- higher level of growth in Oakham
- higher level of growth in Uppingham
- higher level of growth in the Local Service Centres

meeting growth needs through a new sustainable community

4.3 As a result of consideration of the consultation responses and continuing work gathering and updating the evidence base, the Council refined these options to prepare three emerging scenarios for the scale and spatial distribution of growth to support the preparation of this draft Water Cycle Study as well as other evolving evidence work;

- Scenario 1 - Minimum housing growth 123 dwellings per annum broadly distributed on the basis of the existing Core Strategy Spatial Strategy with majority of growth directed to the towns (including land adjacent to Stamford).
- Scenario 2 - Additional growth potentially 160 dwellings per annum based on the existing Core Strategy Spatial Strategy with majority of growth directed to the towns (including land adjacent to Stamford).
- Scenario 3 - Option 2 (as above) with a new settlement within the Spatial Strategy taking some of the additional growth.

4.4 Each scenario has a 10% contingency added to allow for non-delivery within the plan period.

Scenario 1: 123 dpa with no new settlement

	Requirement 2021-41 (123* dpa + 10% buffer)	Proposed target spatial distribution	Commitments at 31 st March 2023*	Completions from April 2021 to March 2023*	Minimum indicative target housing supply to deliver the requirement
Stamford North**		650 leaving 2,056			650
Oakham		45% = 925	605	137	183
Uppingham		25%= 514	195	3	316
Larger Village with PLD		25% = 514	310	51	153
Small villages/ hamlets (without a PLD)		5% = 102	55	2	Indicative provision of an additional 45-dwellings assumed to be delivered through infill/windfall in these villages without proposing

					allocations in these settlements
County Total	2706	2705	1,165	193	1347

* These figures will be reviewed and updated on a regular basis during the preparation of the Local Plan.

** It is intended now that any development on the Rutland part of a comprehensive Sustainable Urban Extension to Stamford should count towards Rutland's housing needs and so reduce the requirement for new housing elsewhere in Rutland.

Scenario 2: 160 dpa with no new settlement

	Requirement 2021-41 (160* dpa + 10% buffer)	Core Strategy distribution	Commitments at 31 st December 2022*	Completions from April 2021 to December 2022*	Indicative housing supply to deliver the requirement in line with the Core Strategy distribution **
Stamford North***		650 leaving 2,870			650
Oakhham		56% = 1,607	279	119	1,209
Uppingham		14% = 402	196	3	203
Larger Villages		20% = 574	368	11	195
Other Villages		10% = 287	95	37	Indicative provision of an additional 155
County Total	3,520	3,520	938	170	2,412

* These figures will be reviewed and updated on a regular basis during the preparation of the Local Plan.

** There is scope for some of this supply to be found through an allowance for windfalls in all settlements provided this allowance is justified. For comparison, the submitted and withdrawn Local Plan included an allowance of 300 windfalls over the plan period 2018-36. This will be updated.

*** It is intended now that any development on the Rutland part of a comprehensive Sustainable Urban Extension to Stamford should count towards Rutland's housing needs and so reduce the requirement for new housing elsewhere in Rutland.

Scenario 3: 160 dpa with no new settlement (assuming remainder is planned in line with current spatial strategy)

	Requirement 2021-41 (160* dpa + 10% buffer)	Core Strategy distribution	Commitments at 31 st December 2022*	Completions from April 2021 to December 2022*	Indicative housing supply to deliver the requirement in line with the Core Strategy distribution **
Stamford North***		650 leaving 2,870			650
New settlement****		1,000 leaving 1,870			1,000
Oakham		56% = 1,047	279	119	649
Uppingham		14% = 262	196	3	63
Larger Villages		20% = 374	368	11	-5
Other Villages		10% = 187	95	37	Indicative provision of an additional 55
County Total	3,520	3,520	938	170	2,412

* These figures will be reviewed and updated on a regular basis during the preparation of the Local Plan.

- ** There is scope for some of this supply to be found through an allowance for windfalls in all settlements provided this allowance is justified. For comparison, the submitted and withdrawn Local Plan included an allowance of 300 windfalls over the plan period 2018-36. This will be updated.
- *** It is intended now that any development on the Rutland part of a comprehensive Sustainable Urban Extension to Stamford should count towards Rutland’s housing needs and so reduce the requirement for new housing elsewhere in Rutland.
- **** Location to be determined, based on trajectory of 100 dwellings per annum for 10 years, with remainder of any capacity falling outside the plan period.

5 Methodology & Assessment Scope

- 5.1 In accordance with Environment Agency guidance¹, the scope/outline of a Water Cycle Study (WCS) should be undertaken in the early stages of preparing or updating development plan documents and supporting evidence.
- 5.2 The WCS takes into account the levels of development required during the Plan period and encourages water authorities and the Environment Agency (EA) to work collaboratively with the Council in order to achieve growth that is well-integrated, appropriately located and sustainable in the context of clean and safe water provision.
- 5.3 The first stage of this study, the Scoping stage, has undertaken a review of the water cycle position and provided an overview of the following specific items:
 - Capacity issues with regards to water treatment works, clean water network and water resources in Rutland;
 - Capacity issues with regards to wastewater treatment capacity in Rutland;
 - Potential impacts of future water abstraction and wastewater discharge near water dependent European Sites; and Baseline water quality issues with respect to the discharge of wastewater and surface water.

Water Cycle Studies

“A Water Cycle Study is a voluntary study that helps organisations work together to plan for sustainable growth. It uses water and planning evidence to understand environmental and infrastructure capacity and can identify joined up and cost- effective solutions that are resilient to climate change for the lifetime of the development.”

National Policy Practice Guidance Paragraph: 012 Reference ID: 34-012-20140306

¹ <https://www.gov.uk/guidance/water-cycle-studies>

- 5.4 A properly functioning water cycle is vital to both the natural environment and human well-being. Water is a finite resource and it is essential that it is managed appropriately. There is increasing recognition that the ways in which we use water contribute to extreme water situations, and that the planning system, through Local Plan policies, needs to ensure that sufficient management and mitigation is in place so that any increased development that will occur, following the implementation of its policies, does not result in adverse impacts on the water cycle, and thus the well-being of both human health and the natural environment. Such management includes ensuring that adequate supplies of clean water are available to meet the district's domestic, industrial, recreational and agricultural needs and to maintain its rich variety of wildlife and habitats.
- 5.5 This Water Cycle Study uses data provided by the county's two water providers, Anglian Water and Severn Trent Water, to understand the current position of each provider, drawing upon information from the providers' Water Resource Management Plans (WRMP) that set out the future water infrastructure in the county. Additionally, the Study is based on input from the Environment Agency (EA) due to their role in Abstraction Licensing, and for the provision of data collected by them relating to water quality.
- 5.6 The Study will be used to identify current issues and constraints within the county's water cycle and provides evidence to support the policies of the emerging Local Plan. In this regard, it reconciles the forecast development growth for the county with the management plans of the water providers. The Study will also be used to ensure that, in the context of climate change, the Council's plans are well-evidenced and justifiable and align with advice given by the water providers and the Environment Agency.
- 5.7 Figure 3 illustrates, the water cycle includes rainfall, infiltration, evaporation, surface runoff, interception/transpiration, freshwater and groundwater storage. All development has the potential to impact on all aspects of this cycle. Intervention with these natural processes includes water extraction from rivers, groundwater and reservoirs, and subsequent water treatment to use for water supplies, and wastewater collection before it is recycled back into the water cycle.

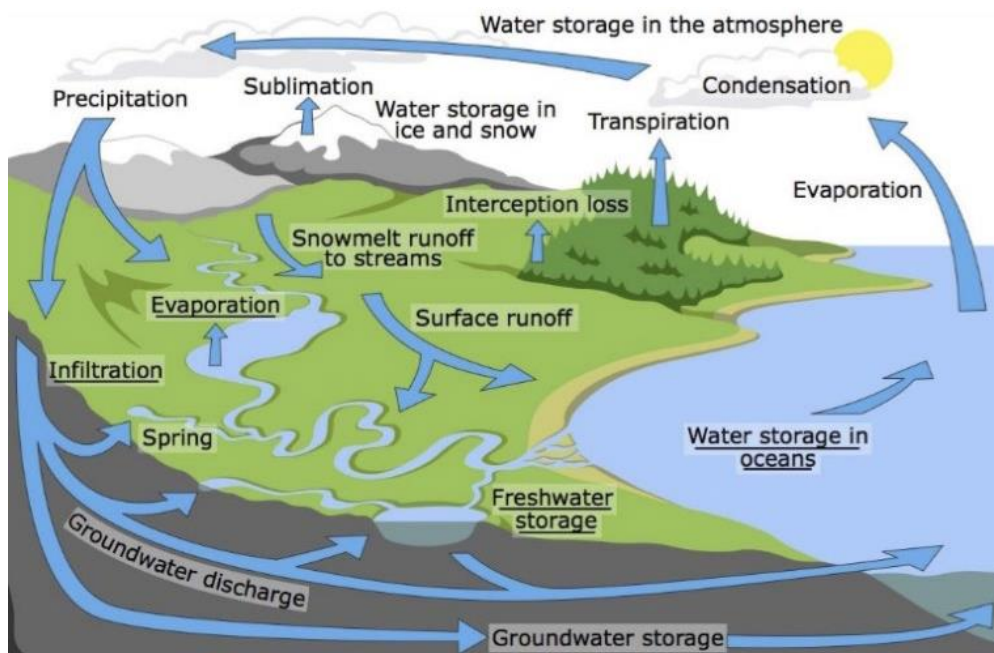


Figure 3: The Hydrological Cycle Source: Environment Agency, 2020

- 5.8 Climate change is one of the greatest challenges facing society and that rising global temperatures are accelerating to a harmful degree as a result of post-industrial human activity. This is likely to have significant effects on the water environment. These effects will tend to increase the size of flood zones associated with rivers and the amount of flooding experienced from other inland sources. Rises in sea level will change the frequency of occurrence of high-water levels relative to today's sea levels and will also increase the extent of the area at risk should sea defences fail. Changes in wave heights due to increased water depths, as well as possible changes in the frequency, duration and severity of storm events are also predicted. With these effects in mind, it will be vital for this Study and the water companies' WRMPs with which its conclusions seek to align, to take account of predicted changes to the water environment as a result of climate change.
- 5.9 Changes to the climate will bring new challenges to the county's built and natural environments, as well as adding new pressure onto the county's water environment. East Anglia is one of the driest regions in England and Wales and hotter, drier summers are likely to further limit water supply. Wetter winters, with an increasing likelihood of extreme weather events and rising sea levels will also place additional and more frequent pressure on the district's flood defences and water infrastructure.
- 5.10 This Water Cycle Scoping Study (WCS) will provide evidence to support decision making relating to future development in Rutland through the emerging Local Plan, ensuring that the scale and location of development proposed can be met without adversely impacting on the county's water environment. It will also help to ensure that required water infrastructure can be planned for and brought forward alongside new development, in a timely and phased manner.

5.11 There are two objectives of a WCS:

1. Ensure that provision of Water Services Infrastructure (WSI) and mitigation is sustainable and contributes to the overall delivery of sustainable growth and development and that the Local Plan meets the requirements of the National Planning Policy Framework (NPPF) and National Planning Policy Guidance (NPPG); and;
2. Water Framework Directive (WFD) and Habitats Regulations compliance – to ensure that growth, through water for supply and wastewater, does not have an impact on the protected species and habitats designated under the Habitats Regulations.

6 National Policy and Guidance

- 6.1 The Water Environment (Water Framework Directive) (England and Wales) Regulations (2017) apply to surface waters (including some coastal waters) and groundwater. The Regulations set out requirements to prevent the deterioration of aquatic ecosystems, protect, enhance and restore water bodies to 'good' status, and achieve compliance with standards and objectives for protected areas. To meet the objectives of the Regulations, Local Authorities must have regard to the relevant River Basin Management Plan which was most recently updated by the EA in 2022.
- 6.2 The National Planning Policy Framework (2023) at paragraph 20 b) requires that strategic policies should make sufficient provision for water supply, wastewater, flood risk and coastal change management. Paragraph 169 recommends the incorporation of sustainable drainage systems as part of planning appropriately for flood risk while paragraph 174 states that all planning policies and decisions should contribute to and enhance the natural and local environment including helping to improve water quality (paragraph 174 e) taking account of relevant information such as river basin management plans. Paragraph 185 requires that new development should be appropriate for its location in the context of health, living conditions and the natural environment.
- 6.3 The National Policy Statement for Wastewater (2012) forms part of the overall framework of national planning policy and sets out Government policy for the provision of major wastewater infrastructure. It is used by decision makers as the primary basis for deciding development control applications for wastewater developments that fall within the definition of Nationally Significant Infrastructure Projects (NSIP) as defined in the Planning Act 2008.

7 Existing Evidence

Water Cycle Studies

- 7.1 The previous Rutland Water Cycle Study was undertaken in 2011 jointly with South Holland and South Kesteven District Councils. The key findings of the study, in relation to the three Local Planning Authorities, were as follows:
- 7.2 For water resources, both Anglian Water and Severn Trent's Water Resource Management Plans forecast supply to demand deficits by the end of the planning period, although both companies have measures in place to deal with these deficits. However, the study recommended that water efficiency measures be incorporated into all new development to reduce water use where possible.
- 7.3 For wastewater treatment and transmission, there are twelve wastewater treatment works that at the time of the study (2011) did not have current capacity to accept and treat any further wastewater from growth without requiring an increase in the volumes that they are consented to discharge. Any growth in these areas will require the consent parameters of the discharge to be reviewed and altered. It was not possible to carry out a full assessment of the capacity of the sewer network without knowledge of exact growth locations; however, this was a recommendation for a Stage 2 study.

- 7.4 The study collected baseline data from various stakeholders, to analyse the data and currently do not have current capacity to accept and treat any further wastewater from growth without requiring an increase in the volumes that they are consented to discharge. Any growth in these areas will require the consent parameters of the discharge to be reviewed and altered. It was not possible to carry out a full assessment of the capacity of the sewer network without knowledge of exact growth locations; this was a recommendation for a Stage 2 study.
- 7.5 For ecology, no effects on designated conservation sites are anticipated from the proposed growth.
- 7.6 The geology of some areas, particularly to the east of the county, is not suitable for infiltration SuDS and discussions must be held with the relevant Internal Drainage Board(s) to ensure that run-off rates from new development are appropriate and will not exacerbate flooding elsewhere.

Strategic Flood Risk Assessments

- 7.7 The Level 1 draft SFRA March 2023, published alongside this WCS, indicates that fluvial flood risk is of limited spatial extent within the County and that the majority of the higher risk Flood Zones (2 and 3) are located in rural areas away from the built environment. There are a few small settlements where the flood map shows properties at risk and these include Langham, Whissendine, Cottessmore, Ryhall, Ketton and parts of Oakham.
- 7.8 The Draft Level 1 SFRA has shown that there is the potential for flooding along the main River Welland this does not constitute a major risk. Much of Rutland is located in upland areas with many small watercourses in well-defined channels. As such, Flood Zones are limited in extent and it is likely that there is sufficient room for new development to be located outside of higher risk Flood Zones.
- 7.9 There is however a potential higher risk from surface water in some areas of the county and further clarification is currently being sought as part of the Draft Level 1 SFRA as to the risk surface water poses and how this may be impacted from future development within the county. Residual risk from reservoir dam failure has been a considered within the draft Level 1 SFRA. The SFRA advises against development downstream of raised reservoirs such as Rutland Water and Eyebrook Reservoir.
- 7.10 It is also recognised that the geology within the County is likely to impact the use of infiltration SUDs, further engagement with the EA is required as part of developing Level 1 SFRA.

River Basin Management Plans

- 7.11 River Basin Management Plans were created to fulfil the Water Framework Directive requirements providing protection and improvements to the water environment. First drafted in 2009 these plans were updated in December 2022 to take into consideration the principles of the Environment Bill.
- 7.12 There are 11 River Basin Districts within England and three of them have headwaters in the RCC area;

Anglian RBMP

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1118190/Anglian-FRMP-2021-2027.pdf

Humber RBMP <https://www.gov.uk/guidance/humber-river-basin-district-river-management-plan-updated-2022>

Severn RBMP <https://www.gov.uk/guidance/severn-river-basin-district-river-basin-management-plan-updated-2022>

- 7.13 Although RCC is covered in part by the three areas, the predominant area is the Anglian RBMP.

Water resource plans and proposed investment by Anglian Water & Severn Trent for waste water and supply.

- 7.14 Water companies have an obligation to provide water supplies and sewage treatment capacity for future development. It is important for the council to work collaboratively with the water companies to provide relevant assessments on the impacts of future developments and to provide advice regarding policy wording on other relevant areas such as water efficiency, Sustainable Drainage Systems (SuDS), biodiversity, and blue green infrastructure.
- 7.15 The Water companies have a duty to provide capacity for new development in the sewerage network and at Wastewater Treatment Works (WwTW) and to ensure that they protect the environment. They do this by producing a Drainage and Wastewater Management Plan covering the next 25 years, which assesses the future pressures on catchment areas including the impacts of climate change, new development growth and impermeable area creep. These plan will support future investment in wastewater infrastructure and encourages collaborative working with other Risk Management Authorities to best manage current and future risks.

Anglian Water

- 7.16 The WRLTP2 sets out the investment by Anglian Water to 2045 and estimates that by this time there will be an additional 2,302 homes, it is worth noting that this is below all three scenarios identified in table 1 of this report. On the basis of 2,302 homes there are three Waste Recycling Centres in the county in at Oakham and Cottesmore as well as Empingham which will require investment. The investment at Oakham is designed to meet growth to 2036, whilst Cottesmore is to 2027. This baseline investment will be the starting point for the AMP8 (2025-30) and onwards to 2050 in the new DWMP.
- 7.17 For 'WRC - descriptive to numeric permit' the county tables detail investment planned for investigations. In addition, Anglian Water have ringfenced investment at the descriptive WRCs at highest risk of meeting a numeric permit following the investigations: £15.8M in AMP7, £7.9M in AMP8, £2.6M in AMP9, £1.8M in AMP10 and £1.8M in AMP11.
- 7.18 Overall, the Welland Catchment Partnership sets out up to £99 million in investment from 2025 – 2050.

² [water-recycling-long-term-plan.pdf \(anglianwater.co.uk\)](https://www.anglianwater.co.uk/water-recycling-long-term-plan.pdf)

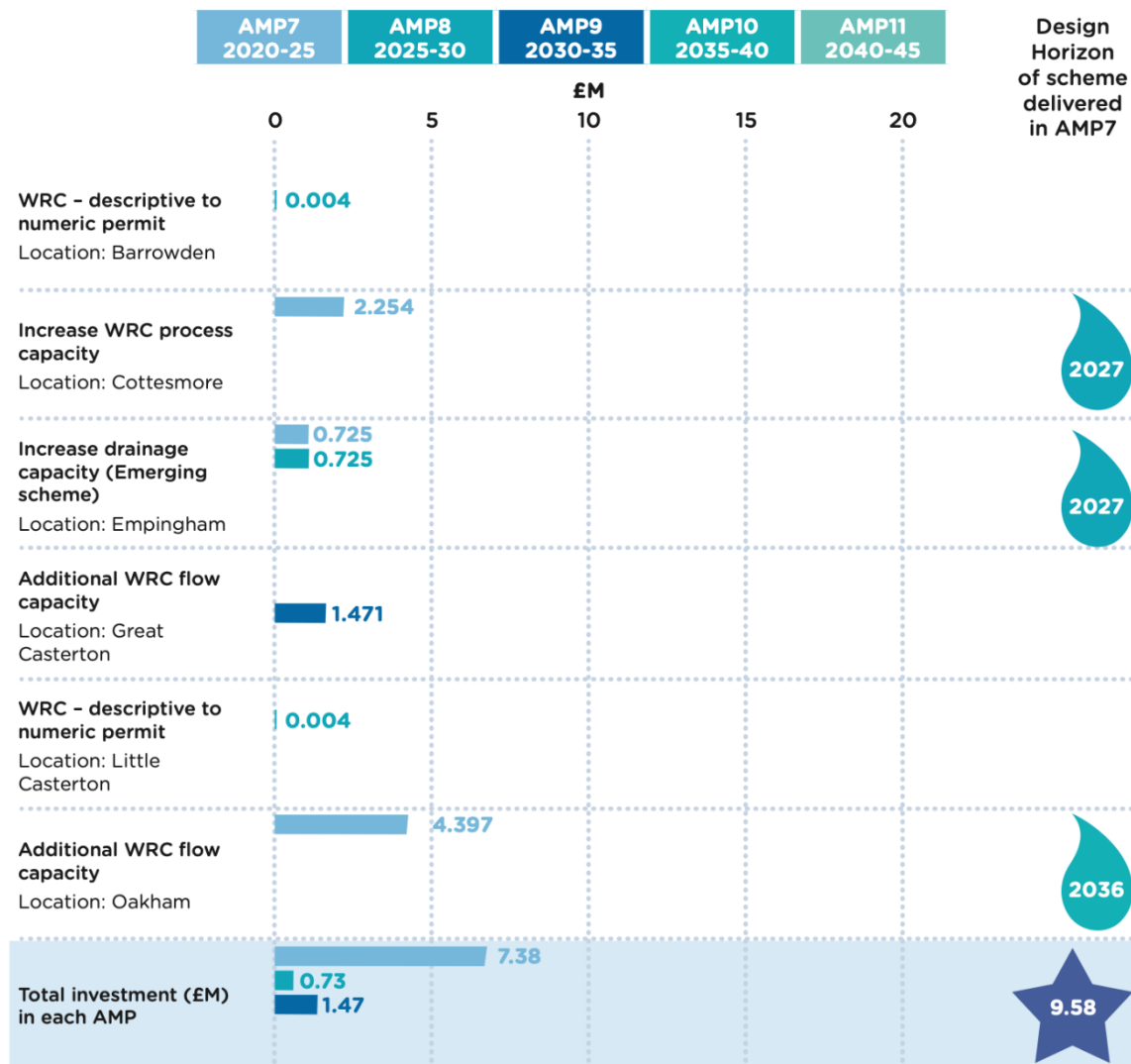


Figure 4: Anglian Water Housing Growth and Employment Growth – 2050 County Summary

- 7.19 Anglian Water published their Drainage and Wastewater Management Plan (DWMP) at the end of May 2023. The Drainage and Wastewater Management Plan (DWMP) is a collaborative long-term strategic plan highlighting the known and expected future risks to drainage and identifying solution strategies to mitigate. It sets out how our wastewater systems, and the drainage networks that impact them, are to be maintained, improved and extended over the next 25 years to ensure they're robust and resilient to the future pressures we face in our region.
- 7.20 The DWMP indicates a 25-year spend of up to £5 billion to manage the risk from growth, climate change and to meet storm overflow targets. Rutland sites within the Welland Catchment Partnership and is identified to need up to £99 million investment over the 25-year period 2025-2050.
- 7.21 Recommendations within this plan which impact on water catchments in Rutland include a new permit and increased capacity at Water Recycling centre in Braunston,

and addressing potential network issues with a mixed strategy with a main solution of SUDs in the medium term with longer term plans for 25% surface water removal at the following locations:

- Braunston
- Cottesmore
- Ketton
- North Luffenham
- Oakham
- Uppingham

7.22 No proposals are included for the following Rutland catchment areas:

- Great Casterton
- Ryhall
- Wing

7.23 In addition, increase in the capacity of the network is required in Stamford which lies outside of Rutland but which may impact on development within the County, particularly the Stamford north proposal.

7.24 Early engagement with AWS in preparing this WCS has indicated that there is sufficient capacity at the main Water Recycling Centres (WRC) in Oakham, Uppingham and Stamford to address the numbers set out in each of the scenarios. The rural WRCs located at Cottesmore, Empingham, Ryhall and North Luffenham also have some capacity to accommodate growth. The location of a new settlement in scenario 3 would need to be assessed once a location was decided upon*.

7.25 Uppingham WRC is the only WR nearing capacity and therefore any significant increase in growth beyond the figures included in the 3 scenarios might require further consideration.

* Anglian Water's response on the housing capacity and the potential most sustainable locations for growth is based upon the permitted dry weather flow (DWF) of wastewater recycling centres (WRC). Locating development to use existing WRC capacity first complies with the NPPF and the sustainability hierarchy.. Using existing capacity means that new treatment infrastructure does not need to be constructed, with its associated greenhouse gas/ embedded carbon emissions. The report outputs use the measured DWF Q80 data for the WRC in the most recent calendar year for which data is available and has been provided to the Environment Agency. The calculation of the potential available WRC capacity to serve new homes is an indicative figure to assist LPAs with their plan-making process and distribution of growth. The position can and will change and the reasons may include:

- Weather – principally the duration and intensity of rainfall - and surface and groundwater flows into the wastewater network
- Changes in wastewater flows from existing homes and businesses, for example as a result of more home working such as occurred in 2020 and 2021
- New connections resulting from existing commitments - new planning permissions and expansions of businesses either from existing Local Plan allocations or when windfall development is approved and constructed
- Reductions in wastewater flows as water efficiency measures reduce the amount of water used and then needing treatment

- Improved accuracy of data collection as new monitors are installed and defective monitors replaced
- Changes to permits and wastewater regulations
- Optimisation and upgrades of existing WRC e.g. as part of standard maintenance, or through planned works, including works paid for by developers

For the purposes of plan-making the number of new homes that could be served by an existing WRC is therefore a snapshot in time and will be subject to change due to the number of factors that may influence capacity. It should be used as a high-level assessment to help inform the spatial distribution of growth and general alignment with findings of Local Plan evidence documents such as Infrastructure Delivery Plans, Water Cycle Studies or Integrated Water Management Studies. It will be for the LPA to confirm the position through the Phase 2 WCS/IWMS and in liaison with the Environment Agency. The capacity figures/numbers of dwellings specifically does not include an assessment of capacity for new businesses and non-domestic growth.

Severn Trent

- 7.26 There is a small part of the north western corner of Rutland is served by Severn Trent Water. This area includes Langham, Market Overton and Whissendine. Seven Trent Water published DWMP for consultation in June 2022. This considers growth projected up to 2050. The DWMP does not identify the need for investment within the county to manage the anticipated growth up to 2050.
- 7.27 Early engagement with STWS in preparing this WCS has indicated that there are no concerns about the capacity of WRC within the STW area to address the needs identified within the scenarios.

Rutland Water SPA & Ramsar site and other ecological sites

- 7.28 Rutland Water a drinking water storage reservoir, which is managed by AWS who balances abstraction and replenishment to ensure a continued water supply to customers across the region.
- 7.29 The Appropriate Assessment carried out as part of the Habitats Directive Review of Consents concluded that there are no Water Quality Consents which have been shown to have an adverse effect on Rutland Water SPA, even under worst case scenarios in combination with other potentially significant influences on the site.
- 7.30 The effects of increased surface water run-off on Rutland Water should also be considered once the individual development sites are known. However, it is thought at this point that there should be sufficient scope for the use of SUDS in new development to ensure adverse effects of increased surface water run-off can be mitigated.
- 7.31 Eyebrook Reservoir SSSI also lies in Rutland. The site is a major wetland area which combines an extensive sheet of open water with a complex of wetland and lakeside habitats including mudflats, marsh, pasture, broad-leaved woodland, and broad-leaved, mixed and coniferous plantations. The site is heavily dependent on groundwater and could therefore be subject to impacts from the proposed development dependent on the location of growth. Again, however at this point, there should be scope of SUDS to be used in new development to mitigate surface water run-off.
- 7.32 Rutland has numerous SSSIs but (other than Rutland Water itself) Empingham Marshy Meadows SSSI is particularly sensitive to water influences.
- 7.33 It is worth noting that the Environment Agency have recently designated bathing waters at:
- Sykes Lane Bathing Beach, Rutland Water and
 - Whitwell Creek, Rutland Water

Water Supply - Areas of water stress, accounting for levels of abstraction and anticipated impact of climate change.

- 7.34 To satisfy the specific purpose of the Water Industry (Prescribed Condition) Regulations 1999 (as amended), the Environment Agency has looked across the current and future water usage and climate change scenarios, to provide a water stress situation for each water company area the most recent assessment of water stress has been published in 2021³. Anglian Water and Severn Trent remain to operate in severely water stressed areas.
- 7.35 Local authorities can use the water stress determination to inform whether they can require the tighter standard of 110 litres per head per day in new developments. It is recommended that this standard is incorporated into the Rutland Local Plan.
- 7.36 The EA publishes details of the availability of water for abstraction in Catchment Abstraction Management Strategies (CAMS), the Welland Catchment Abstraction Management Strategy⁴.
- 7.37 The water resource availability is calculated at four different flows, Q95 (the flow of a river which is exceeded on average for 95% of the time i.e., low flow), Q70, Q50, and Q30 (higher flow) for this ALS are presented and explained in Maps 1-4 below.

³ <https://www.gov.uk/government/publications/water-stressed-areas-2021-classification>

⁴

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/976332/CAMS-The-Welland-Catchment-Abstraction-Management-Strategy.pdf

Map Key

Legend:

● Assessment Points

— Rivers

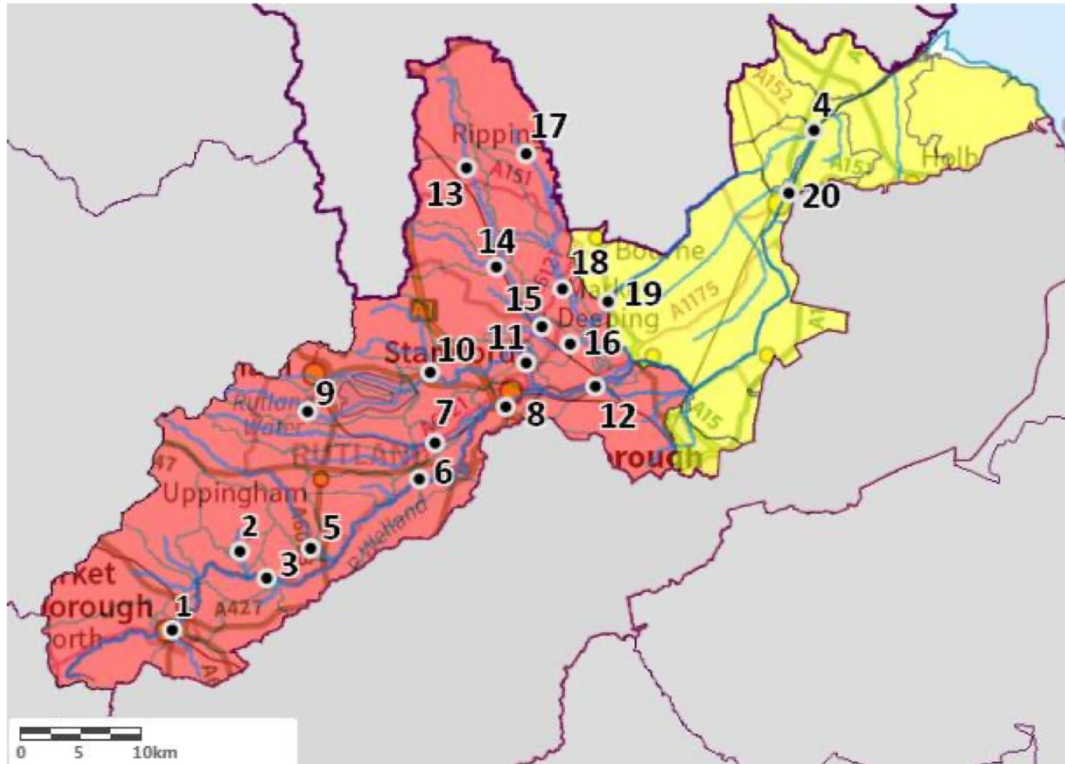
Water Availability at Q30:

■ Water available

■ Restricted water available

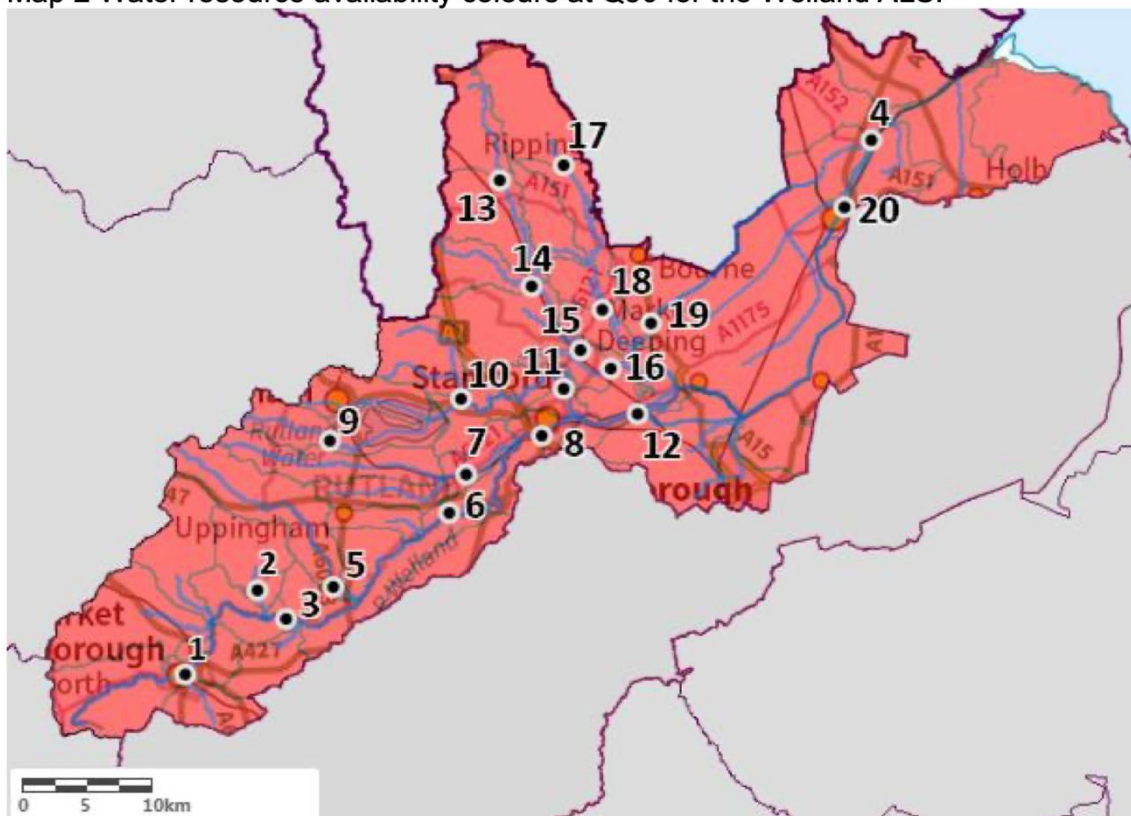
■ Water not available

Map 1: Water resource availability colours at Q30 for the Welland ALS.



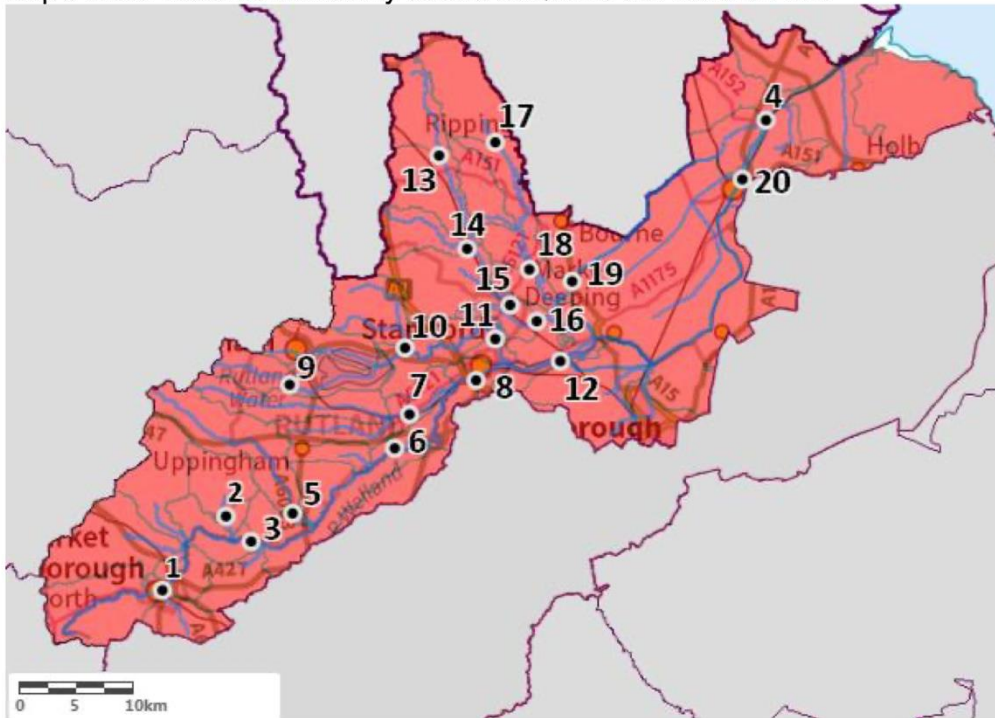
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Map 2 Water resource availability colours at Q50 for the Welland ALS.



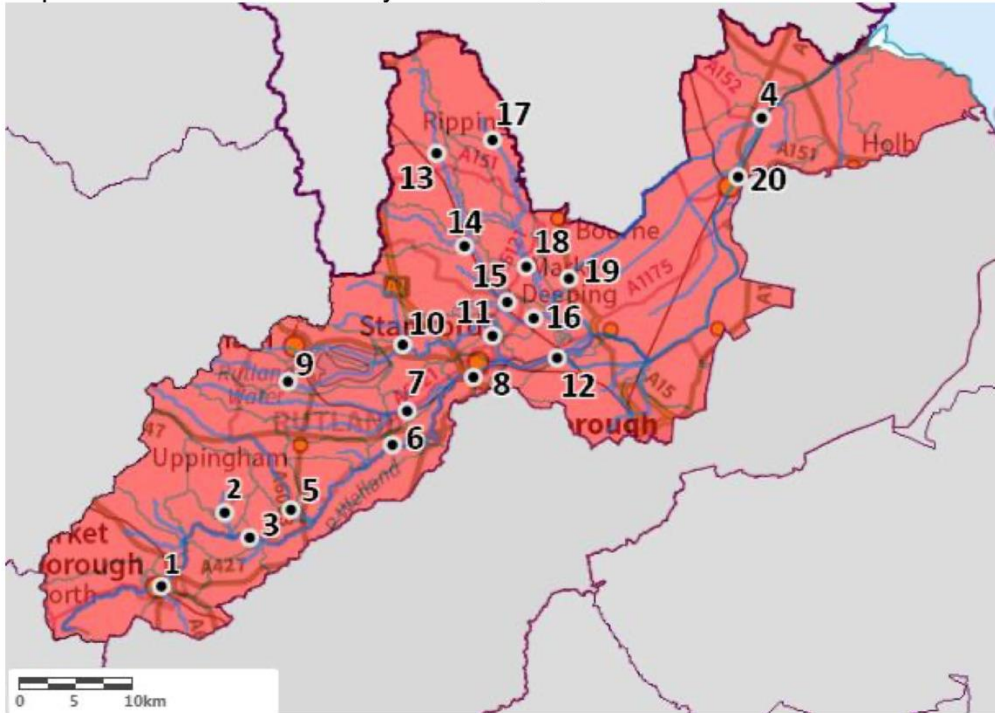
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Map 3 Water resource availability colours at Q70 for the Welland ALS.



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Map 4 Water resource availability colours at Q95 for the Welland ALS.



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- 7.38 Maps 1-4 indicate that at each assessment point, as a baseline position, without the consideration of the proposed growth in Rutland, there no water available.
- 7.39 The Whilst the CAMS may say that water is available for abstraction, this doesn't guarantee that all applications will be successful. This is because the EA have to determine each application on its own merits, and local factors may mean we're either unable to grant a licence as applied for, or even at all.
- 7.40 New licences within an ALS are usually given a Common End Date (CED), which allows them to be reviewed at the same time. The next CED for this ALS is 31 March 2026 and the subsequent one is 31 March 2038.
- 7.41 Whilst through the Local Plan water consumption can be reduced, there will still be a need for water in the county to 2041. Further engagement with the EA is required as part of the draft Water Cycle Study to assess the impact on water abstraction.

Water Resources Management Plans

- 7.42 The Water Resources Management Plan (WRMP) is a statutory plan that's produced every five years to plan for supply of drinking water over next 25 years i.e. to 2050. The overarching aim is to reduce the amount of public water supply in England per person by 20% by 2038. This would reduce use to 122litres per person per day by 2038. The end goal set by Defra is an average use of 110litres per person per (PCC) day and a 15% reduction in business water use by 2050. To get to an average of 110 PCC domestic means that new properties need to be built to deliver below 110 – at least 100 and in some areas 80l PCC.
- 7.43 Both AWS and STWS prepare a WRMP to forecast customer's (domestic and non-household) water demand including growth to calculate the supply-demand balance. The Water companies are required to ensure sufficient water is available for current and new homes but it is a requirement of water companies to supply new business demands.
- 7.44 Both AWS and STW have standard policy advice notes to guide the preparation of Local Plan policies on water supply. These are appended to this paper as Appendix B.

Water Quality

- 7.45 The Environment Agency monitor Water Recycling Centre (WRC) compliance to protect, enhance and restore surface water bodies with the aim to achieve good ecological status as per the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. Residents have reported minor sewage pollutions from Braunston (WRC) in the past. We monitor the dry weather flow compliance from WRCs. Oakham WRC been subject to investment in recent years, however discharges into Rutland Water have occurred and will need to be monitored closely.
- 7.46 The Environment Agency have published Event Duration Monitoring data from recent years. This includes data from all 10 water and sewerage companies operating in England with information on the frequency and duration of storm overflow spills. Whilst the most recent date (published in March 2023) shows a 19% reduction in the number of sewage spills, this is largely due to below average rainfall in 2022.
- 7.47 This data shows that at least one event occurred at a number of locations across Rutland during 2022. The geographical spread of these vents is shown in the map extract at Appendix A which show particularly issues at Whissendine, Oakham and Uppingham. These events impact on the following watercourses:
- Langham Brook,
 - Whissendine Brook
 - North Brook
 - South Gwash
 - Chater (upper and lower)
 - Gwash
 - West Glen
 - Uppingham Brook
- 7.48 Storm overflows account for 7% of waterbodies failing to reach Good Ecological Status - a significant part of the 36% which fail due to impacts from the wider water industry. Agriculture accounts for 40% of failures, while urban and transport pollution makes up 18%.

8 Identifying the Issues

8.1 The table below sets out a range of options available to the Council in order to address the county's water cycle position. The information provided within these options and the preliminary conclusions below could be used to inform the drafting of policies in the new Local Plan.

Area of Focus	Method for Improvement via Local Planning Policy
Environmental	Local planning policy can require Sustainable Urban Drainage Systems (SuDS) for new developments. SuDS aim to manage rainwater runoff in a natural way by replicating natural processes, and examples of the technology include green roofs, permeable pavement and shallow ditches or swales. It is important that the maintenance of SuDS features is secured through planning policy and conditions. The main benefits of SuDS include water attenuation, treatment and reuse, and can also be used provide an amenity benefit. Proposals for Sustainable Drainage Systems involving infiltration must be assessed and discussed with the Environment Agency, to determine their suitability in terms of the impact of any drainage into groundwater aquifers. Further details on SUDS are set out below.
Social	Local planning policy can protect the district's green and blue infrastructure and open spaces, providing safe access to water-facing green sites, as well as avoiding inappropriate development close to water courses.
Water supply	Local planning policy can ensure that the levels of growth forecast in the district are aligned with the supply strategies of the county's two water suppliers. The Council should also continue to work collaboratively with the providers as part of the Local Plan process, and in preparing an Infrastructure Development Plan (IDP). This will also help the providers plan required infrastructure upgrades, which often require significant lead-in times.
Water demand	Local planning policy can facilitate reductions in the demand for water, with a resultant easing in pressure on the availability of supply. Requiring higher water efficiency standards in new homes would help achieve this. Standard advice is provided by both Water Companies operating in Rutland around Local plan Policy preparation on this subject. Other methods for reducing water demand include smart metering, incentives and rainwater harvesting and water reuse. Non-domestic consumption can also be reduced by encouraging new developments to be built to 'Very Good' or 'Excellent' BREEAM standards.

Wastewater	Local planning policy can require adequate wastewater treatment facilities to be in place prior to new development and can also limit the phasing of development to ensure that sufficient wastewater drainage is provided in conjunction with new development. Local Planning policy can also address the need of increased suitable wastewater drainage cover (extension of existing network) and potentially promote the use of first sewerage to remove the load on area of high groundwater vulnerability.
Flood risk and drainage	<p>Site selection process for allocation should avoid areas of high risk of flooding.</p> <p>Local planning policy can require Sustainable Urban Drainage Systems (SuDS) for new developments which aids the appropriate disposal of surface water and therefore avoids any increase in flood risk resulting from development. Via measures specified in the Council’s Strategic Flood Risk Assessment, local planning policy can seek to locate new development in areas which are at lower risk of coastal or fluvial flooding</p>
Climate change	Local planning policy can help facilitate sustainable design and construction, including improved water efficiency measures. By being mindful of the Strategic Flood Risk Assessment and the Water Cycle Study, local planning policy can mitigate as far as possible the impacts of climate change on the water environment in the district

Figure 6 - Strategic Options for Local Planning Policy

Sustainable Drainage Systems

- 8.2 Sustainable Urban Drainage Systems (SUDS) aim to manage rainwater runoff in a natural way by replicating natural processes, thereby reducing the impact of flooding and protecting natural flow regimes in watercourses. SUDS, as opposed to the more traditional approach of using gullies and pipes to move water away as quickly as possible, can therefore also benefit water quality by slowing the rate at which polluted water from urban areas is washed into rivers or groundwater.
- 8.3 The Flood and Water Management Act (2010) promoted an increased awareness of the management of surface water run-off from new development, and in March 2016 the National Technical Sustainable Drainage Systems Standards were released, which mean that a detailed Surface Water Management Strategy (SWMS) needs to be submitted to the LLFA for all major development applications. The SWMS is expected to evidence how SUDS can be incorporated within the proposed development, demonstrating compliance with the Technical Standards.
- 8.4 In addition, [Construction Industry Research and Information Association's \(CIRIA\) SUDS Manual](#) (2015) provides comprehensive information on all the aspects of the life cycle of sustainable drainage from initial planning through to design, construction, management and costs.
- 8.5 In addition to reducing the effects of development on the quantity and quality of water runoff, SUDS can provide additional social and environmental benefits such as providing space for biodiversity and ecology, improving amenity in the locality and carbon sequestration. SUDS features can be categorised as either 'green' comprising landscaped features such as landscaping and vegetation, or 'grey' comprising engineered features such as swales and other control structures. The below diagram taken from the Susdrain website shows the four 'pillars' of SUDS design:

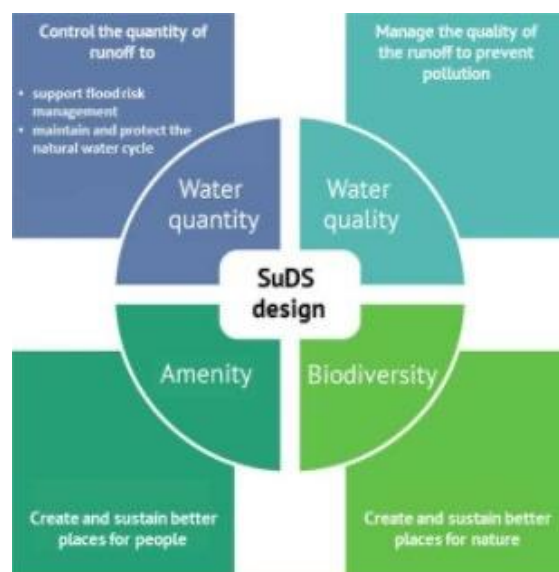


Figure 5 – the four pillars of SUDS design

- 8.6 SuDS can provide opportunities to:
- Reduce surface water run off;
 - Encourage natural groundwater recharge;
 - Reduce pollution
 - Positively influence the design and landscape value of development through the provision of green space and providing opportunities for biodiversity.
- 8.7 Good design of SuDS is crucial as there is no ‘one fits all’ solution and they should be considered early in the design process of a development. SuDS should be designed to provide multiple benefits and clear arrangements must be in place for the on-going maintenance and/or adoption of the proposed drainage system for the lifetime of the development.
- 8.8 The PPG provides further guidance on the use of SuDS and guidance on the technical standards for their design, maintenance and operation can be found in the non-statutory technical standards .

9 Conclusion and Recommendations

Preliminary Water Cycle Scoping Study Conclusions

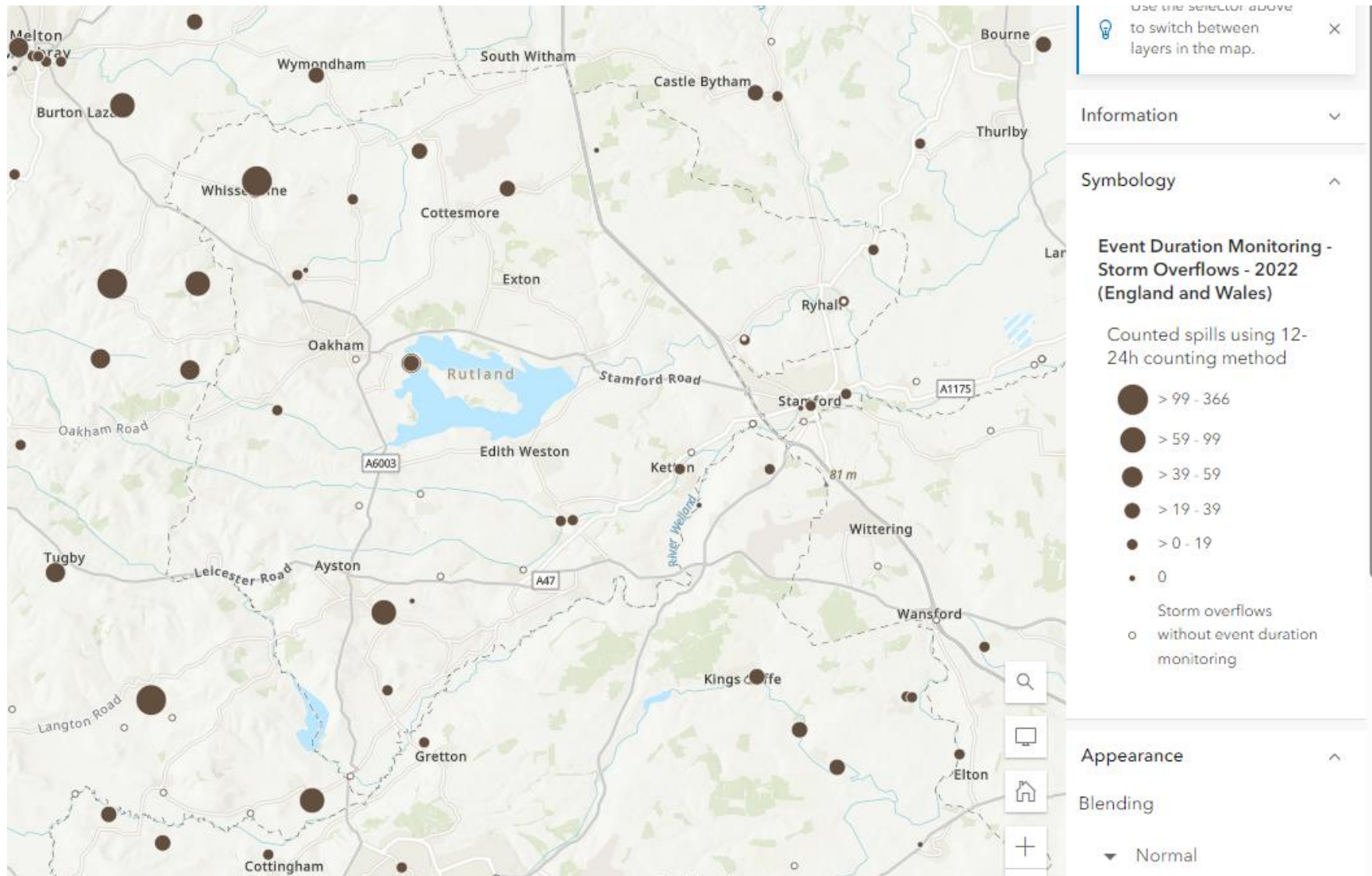
- 9.1 This WCS provides a high-level desktop assessment of water influencers within the county, a summary of the legislation which underpins the provision of and access to clean and safe water to inform the new Local Plan. It sets out the key considerations relating to the county's water environment, with a particular focus on supply, infrastructure and water quality.
- 9.2 The PPG states that following the review of the evidence and engagement, if the scoping/outline study does not identify any likely constraints or evidence gaps for the identified growth, then no further work will be required. If it does, a detailed study to identifying specific risks and mitigation will be undertaken. At this stage it is unlikely that a detailed study will be needed prior to Reg 18 consultation stage, however as part of the development of this draft Water Cycle Study, further engagement is required with key stakeholders to confirm the information and assumptions within the desktop review.

Involvement of Stakeholders and consultation

- 9.3 The main partners for the WCS are as follows:
- Environment Agency
 - Natural England
 - Rutland County Council as Lead Local Flood Authority
 - South Kesteven District Council
 - Melton Borough Council
 - Harborough District Council
 - Peterborough City Council
 - Leicestershire County Council
 - Lincolnshire County Council
 - North Northamptonshire County Council
 - Anglian Water
 - Severn Trent
 - Tata Steel (Eyebrook Reservoir)
 - River Trust (Natural Flood Management Proposals)
- 9.4 The focus of the outline/scope WCS is to identify evidence gaps and constraints to potential growth. A desk top review has been undertaken setting out water resources, wastewater and treatment capacity, ecology, flood risk and surface water management with the information available online. As part of confirming the details of this report the Council sought input from stakeholders over a six-week period in the spring of 2023. The Following conclusions have been reached through this preliminary report:

- There is sufficient capacity within existing Water Recycling Centres to accommodate the potential growth indicated within the three scenarios.
- Rutland is a Water Stressed area and the Local Plan should include policies requiring higher water efficiency target of 110 litres per person per day to reduce water consumption. However, there will still be some need for water in the county to 2041. Further engagement with the EA will be required to assess the impact on water abstraction.
- The two water companies have Drainage and Wastewater Management Plan (DWMP) and Water Resources Management Plan (WRMP) in place. In the majority of the County which is covered by Anglian Water Services there are a number of improvement schemes proposed which will address capacity and network issues over the medium term.
- Sustainable Urban Drainage Systems (SUDs) will be appropriate in most parts of the county and appropriate policy requirements should be included within the Local Plan
- Both Anglian Water and Severn Trent Water have provided a position statement setting out their expectations and suggested draft policies which should be considered in the preparation of the Local Plan. These are set out in Appendix B.
- The Welland River Trust initiatives undertaken locally may also need to be captured as part of the WCS going forward.

Appendix A: Map showing Event Duration Monitoring data 2022, for Rutland



Appendix B:

Seven Trent Position Statement

Position Statement

As a water company we have an obligation to provide water supplies and sewage treatment capacity for future development. It is important for us to work collaboratively with Local Planning Authorities to provide relevant assessments on the impacts of future developments and to provide advice regarding policy wording on other relevant areas such as water efficiency, Sustainable Drainage Systems (SuDS), biodiversity, and blue green infrastructure. Where more detail is provided on site allocations, we will provide specific comments on the suitability of the site with respect to the water and sewerage network. In the instances where there may be a concern over the capacity of the network, we may look to undertake modelling to better understand the potential risk. For most developments there is unlikely to be an issue connecting. However, where an issue is identified, we will look to discuss in further detail with the Local Planning Authority. Where there is sufficient confidence that a development will go ahead, we will look to complete any necessary improvements to provide additional capacity.

For your information we have set out some general guidelines and relevant policy wording that may be useful to you.

Wastewater Strategy

We have a duty to provide capacity for new development in the sewerage network and at our Wastewater Treatment Works (WwTW) and to ensure that we protect the environment. On a company level we are producing a Drainage and Wastewater Management Plan covering the next 25 years, which assesses the future pressures on our catchments including the impacts of climate change, new development growth and impermeable area creep. This plan will support future investment in our wastewater infrastructure and encourages collaborative working with other Risk Management Authorities to best manage current and future risks.

Where site allocations are available, we can provide a high-level assessment of the impact on the existing network. Where issues are identified, we will look to undertake hydraulic sewer modelling

to better understand the risk and where there is sufficient confidence that a development will be built, we will look to undertake an improvement scheme to provide capacity.

Surface Water

Management of surface water is an important feature of new development as the increased coverage of impermeable area on a site can increase the rainwater flowing off the site. The introduction of these flows to the public sewerage system can increase the risk of flooding for existing residents. It is therefore vital that surface water flows are managed sustainably, avoiding connections into the foul or combined sewerage system and where possible directed back into the natural water systems. We recommend that the following policy wording is included in your plan to ensure that surface water discharges are connected in accordance with the drainage hierarchy:

Drainage Hierarchy Policy

New developments shall demonstrate that all surface water discharges have been carried out in accordance with the principles laid out within the drainage hierarchy, whereby a discharge to the public sewerage system is avoided where possible.

Supporting Text:

Planning Practice Guidance Paragraph 80 (Reference ID: 7-080-20150323) states:

“Generally the aim should be to discharge surface water run off as high up the following hierarchy of drainage options as reasonably practicable:

1. into the ground (infiltration);
2. to a surface water body;
3. to a surface water sewer, highway drain, or another drainage system;
4. to a combined sewer.”

Sustainable Drainage Systems (SuDS)

Sustainable Drainage Systems (SuDS) represent the most effective way of managing surface water flows whilst being adaptable to the impact of climate change and providing wider benefits around water quality, biodiversity, and amenity. We therefore recommend that the following policy wording is included within your plan regarding SuDS:

Sustainable Drainage Systems (SuDS) Policy

All major developments shall ensure that Sustainable Drainage Systems (SuDS) for the management of surface water run-off are included, unless proved to be inappropriate.

All schemes with the inclusion of SuDS should demonstrate they have considered all four areas of good SuDS design: quantity, quality, amenity and biodiversity.

Completed SuDS schemes should be accompanied by a maintenance schedule detailing maintenance boundaries, responsible parties and arrangements to ensure the SuDS are managed in perpetuity.

Supporting Text:

Sustainable Drainage Systems (SuDS) should be designed in accordance with current industry best practice, The SuDS Manual, CIRIA (C753), to ensure that the systems deliver both the surface water quantity and the wider benefits, without significantly increasing costs. Good SuDS design can be key for creating a strong sense of place and pride in the community for where they live, work and visit, making the surface water management features as much a part of the development as the buildings and roads.

Blue Green Infrastructure

We are supportive of the principles of blue green infrastructure and plans that aim to improve biodiversity across our area. Looking after water means looking after nature and the environment too. As a water company we have launched a Great Big Nature Boost Campaign which aims to revive 12,000 acres of land, plant 1.3 million trees and restore 2,000km of rivers across our region by 2027. We also have ambitious plans to revive peat bogs and moorland, to plant wildflower meadows working with the RSPB, National Trust, Moors for the Future Partnership, the Rivers Trust, National Forest and regional Wildlife Trusts and conservation groups.

We want to encourage new development to continue this theme, enhancing biodiversity and ecology links through new development so there is appropriate space for water. To enable planning policy to support the principles of blue green Infrastructure, biodiversity and protecting local green open spaces we recommend the inclusion of the following policies:

Blue and Green Infrastructure Policy

Development should where possible create and enhance blue green corridors to protect watercourses and their associated habitats from harm.

Supporting Text:

The incorporation of Sustainable Drainage Systems (SuDS) into blue green corridors can help to improve biodiversity, assisting with the wider benefits of utilising SuDS. National Planning Policy Framework (2018) paragraph 170 States:

“Planning policies and Decisions should contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their Statutory Status or identified quality in the development plan);
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;”

Green Open Spaces Policy

Development of flood resilience schemes within local green spaces will be supported provided the schemes do not adversely impact the primary function of the green space.

Supporting Text:

We understand the need for protecting Green Spaces, however open spaces can provide suitable locations for schemes such as flood alleviation schemes to be delivered without adversely impacting on the primary function of the open space. If the correct scheme is chosen, the flood alleviation schemes can result in additional benefits to the local green space through biodiversity and amenity benefits.

Water Quality and Resources

Good quality watercourses and groundwater is vital for the provision of good quality drinking water. We work closely with the Environment Agency and local farmers to ensure that the water quality of our supplies are not impacted by our operations or those of others. Any new developments need to ensure that the Environment Agency's Source Protection Zones (SPZ) and Safeguarding Zone policies which have been adopted by Natural Resources Wales are adhered to. Any proposals should take into account the principles of the Water Framework Directive and River Basin Management Plan as prepared by the Environment Agency.

Every five years we produce a Water Resources Management Plan (WRMP) which focuses on how we plan to ensure there is sufficient supply of water to meet the needs of our customers whilst protecting our environment over the next 25 years. We use housing target data from Local Planning Authorities to plan according to the projected growth rates. New development results in the need for an increase in the amount of water that needs to be supplied across our region. We are committed to doing the right thing and finding new sustainable sources of water, along with removing unsustainable abstractions, reducing leakage from the network and encouraging the uptake of water meters to promote a change in water usage to reduce demand.

New developments have a role to play in protecting water resources, we encourage you to include the following policies:

Protection of Water Resources Policy

New developments must demonstrate that they will not result in adverse impacts on the quality of waterbodies, groundwater and surface water, will not prevent waterbodies and groundwater from achieving a good status in the future and contribute positively to the environment and ecology.

Where development has the potential to directly or indirectly pollute groundwater, a groundwater risk assessment will be needed to support a planning application.

Supporting Text:

National Planning Policy Framework (July 2018) Paragraph 163 states:

“Planning policies and decisions should contribute to and enhance the natural and local environment... e) preventing new and existing development from contributing to, being put at

unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should wherever possible, help to improve local environmental conditions such as river basin management plans;”

Water Efficiency Policy

We are supportive of the use of water efficient design of new developments fittings and appliances and encourage the optional higher water efficiency target of 110 litres per person per day within part G of building regulations. Delivering against the optional higher target or better provides wider benefits to the water cycle and environment as a whole. This approach is not only the most sustainable but the most appropriate direction to deliver water efficiency. We would therefore recommend that the following wording is included for the optional higher water efficiency standard:

New developments should demonstrate that they are water efficient, incorporating water efficiency and re-use measures and that the estimated consumption of wholesome water per dwelling is calculated in accordance with the methodology in the water efficiency calculator, not exceeding 110 litres/person/day.

Supporting Text:

National Planning Policy Framework (July 2018) Paragraph 149 states:

“Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.”

This need for lower water consumption standards for new developments is supported by Government. In December 2018, the Government stated the need to a reduction in Per Capita Consumption (PCC) and issued a call for evidence on future PCC targets in January 2019, with an intention of setting a long term national target. The National Infrastructure Commission (NIC) has already presented a report including recommendations for an average PCC of 118 l/p/d. In Wales, the 110 l/p/d design standard was made mandatory in November 2018. In 2021 the Environment Agency classed the Severn Trent region as Seriously Water Stressed – [link](#).

We recommend that all new developments consider:

- Single flush siphon toilet cistern and those with a flush volume of 4 litres.
- Showers designed to operate efficiently and with a maximum flow rate of 8 litres per minute.
- Hand wash basin taps with low flow rates of 4 litres per minute or less.
- Water butts for external use in properties with gardens.

Water Supply

For the majority of new developments, we do not anticipate issues connecting new development, particularly within urban areas of our water supply network. When specific detail of planned development location and sizes are available a site-specific assessment of the capacity of our water supply network could be made. Any assessment will involve carrying out a network analysis exercise to investigate any potential impacts. If significant development in rural areas is planned, this is more likely to have an impact and require network reinforcements to accommodate greater demands.

Developer Enquiries

When there is more detail available on site-specific developments, we encourage developers to get in contact with Severn Trent at an early stage in planning to ensure that there is sufficient time for a development site to be assessed and if network reinforcements are required that there is time to develop an appropriate scheme to address the issues. We therefore encourage developers to contact us, details of how to submit a Developer Enquiry can be found here -

<https://www.stwater.co.uk/building-and-developing/new-site-developments/developer-enquiries/>

Policy Advice from Anglian Water for Water Stressed Areas

WRMP24 for LPA - Demand Management Preferred Plan

- **Why**

The Water Resources Management Plan (WRMP) is a statutory plan that's produced every five years to plan for supply of drinking water over next 25 years i.e. to 2050. The overarching aim is to reduce the amount of public water supply in England per person by 20% by 2038. This would reduce use to 122litres per person per day by 2038. The end goal set by Defra is an average use of 110litres per person per (PCC) day and a 15% reduction in business water use by 2050. To get to an average of 110 PCC domestic means that new properties need to be built to deliver below 110 – at least 100 and in some areas 80l PCC.

- **How**

The WRMP forecast customer's (domestic and non-household) water demand including growth to calculate the supply-demand balance. We are required to ensure sufficient water is available for current and new homes but it is a requirement of water companies to supply new business demands.

- **Who & why**

If there is insufficient water then demand management options including reducing leakage are required. Our current WRMP for 2020 to 2025 means AWS investment will have reduced leakage by 22% by 2025. We have the lowest level of leakage in the water sector at some 15% of total water demand. If demand management is insufficient to close the water supply demand gap then water companies are required to propose supply side options. WRMP24 is the 'best value plan' and so balances environmental performance with customer's expectations and the level of water bills. The key drivers for demand management are growth, resilience and sustainability. Reducing abstraction to achieve environmental objectives is now the primary driver for reducing demands.

- **Where & when**

Supply options include water reuse - treated water from water recycling centres that can be used directly for irrigation, for example, or increasing flows in rivers so it can be abstracted downstream. The two proposed reservoirs in the Fens and South Lincolnshire are designed to meet the supply-demand gap with other options including strategic transfers and water reuse (Colchester). Previous investment and the ongoing Strategic Pipeline projects mean that there will in future be no significant differences in the small levels of surplus water available across all the 59 local planning authority (LPA) areas which Anglian Water serves.

- **The role of LPA**

AWS's assessment of growth is underpinned by the LPA plans for growth in Local Plans. EA guidance directs water companies to include strategic growth such as that potentially from the Oxford Cambridge growth area as well as Garden Communities. Housing growth and the expansion of business generates new demands for water. On average growth (through Local Plans and on unallocated sites through planning permissions) has meant that the number of homes increases by about one (1)% per year. Unconstrained water demand would increase by 133Ml/d due to the additional 0.911million new customers being planned for up to 2050. Our forecast - based on planned growth set out in Local Plans - for the WRMP is that there will be a net addition of some 0.527m households by 2050 – a growth rate of 0.97% per annum for the 25 years from 2025. Hotspots for population growth include Milton Keynes and Bedford.

We agree and support government plans and the calls from the Environment Agency (EA) and Natural England (NE) to reduce the amount of water taken from the natural environment through abstraction. This therefore means that to have sufficient water we must first seek to reduce the amount of water new homes and businesses use. This reduction in demand is both in the operation/ use of developments and in the construction of the new buildings and infrastructure and services which support them. We therefore have an existing joint Protocol in place with the EA and NE which supports Councils having a policy of 110litres per day per person for new homes. This Protocol is being updated to go to at least the 100 litres per person per day target for new homes announced in January 2023 by Government in the Environment Improvement Plan. We are supporting LPAs that need to have more ambitious water efficiency targets to enable their levels of growth to be sustainable. This can be 80litres PCC policy or and in the most water scarce areas water neutrality for certain developments. Anglian Water and other water companies are not statutorily required to supply new non-domestic water demands from business but will accommodate this growth where possible. Regulators are now instructing water companies to reduce the overall amount of water supplied to businesses by 9% by 2038. This now means that businesses looking to develop or expand in the Anglian region may not be able to be supplied with water should they require significant water supplies to operate. Instead, they will either need to invest in new water supply options including final effluent reuse or desalination or seek to locate in regions which have surplus water. Some businesses may elect to bring forward onsite wastewater treatment processes to minimise their consumption, have closed loop processes or rainwater/ greywater use. These options may require approval from planning authorities as well as environmental regulators including the EA.

- **The role of AWS**

Demand management therefore looks primarily to use smart metering in new homes and for existing customers in 2million existing properties to help them value water more highly and so reduce consumption. The smart metering approach looks to reduce demand so that the quantity of water saved meets or exceeds the demands from new homes and customers. Smart meter roll out will also support our 100,000 businesses to be more water efficient and identify leakages/continuous flow losses. Overall, the selection of the highest level of water leakage reduction, smart metering and water efficiency measures in homes and business looks to save 134Ml/d by 2050. The selection of the Aspirational scenario for WRMP24 does mean that the plan has higher risks in terms of costs (investment in leakage as well as carbon costs) and water supply being less resilient versus lower demand reduction scenarios.

Smart metering savings total some 32MI/d by 2050 with plumbing losses including quicker repairs saving 24MI/d and customers greater awareness of water (behavioural change) resulting in 8MI/d of water saved. Water use will also be reduced by Government measures seeking to make household goods more water efficient (white good labelling) as well as possible Building Regulations standard improvements for water efficient fixtures & fittings. This saves a further 84MI/d by 2050 (based on Artesia/WUK/Defra research).

Having reduced customers and businesses water use including identifying leakage in properties, the required reduction is abstraction from groundwater and watercourses is then addressed in the short term by not exporting water out of the region and the longer term by the two new reservoirs alongside strategic transfers. Re-use and desalination are planned from about 2032 although the timing and scale of these will adapt depending on regulators directions for example on supplying water to projects critical to the country's decarbonisation of the energy and the journey to net zero by 2050.

On the theme of climate change, reducing water use (as opposed to just increasing supply) means it does not need to be treated and distributed which reduces our operational energy consumption, and meaning that less new water supply infrastructure is required reducing our capital (embodied) carbon impacts in supporting sustainable growth. Making the best use of available water resources, before developing new ones complies with the sustainability hierarchy as well as reducing capital costs and customer bills.

- **Summary**

By 2050 the overall number of properties in the Anglian region will have increased by 58% compared to 1998. Leakage though will have been cut by 49% and the total amount of water in the supply network reduced by 4%. The WRMP enables us to have a balanced approach in supporting growth through reducing leakage and improving water efficiency and through valuing water resources and the wider environment. The cost in 2024/25 – 2029/30 is £171m with the majority of the cost being in smart meter roll out. The cost of smart meter roll out versus leakage reduction are roughly equivalent at circa £6 per MI/d saved up to 2030. Ongoing leakage reduction then is the most expensive element of the plan and by 2050 costs £117 per MI/d saved.

24 October 2023

Anglian Water's Non-Domestic Water Requests Policy

June

2023

101.0 Executive Summary

The East of England is the driest part of the country and climate change is making summers hotter and drier. To help protect the environment, the Environment Agency (EA) is reviewing abstraction licences and reducing the amount of water that businesses including Anglian Water can abstract from the environment. As a result, **the gap between the demand for water and our supply (aka headroom) has shrunk.**

This situation is reducing our ability to be flexible with new requests to supply non-domestic connections which were not planned for in the Water Resources Management Plan (WRMP). However, where our supplies allow, we will endeavour to help businesses in whatever way we can to meet their needs and continue to serve the communities and economies they support.

To respond to both this challenge, and a growing population, Anglian Water is building a new strategic pipeline to move water around our region. We have also developed plans to build two new reservoirs to increase water supply. These solutions will take time to deliver, and so it is more crucial than ever that all homes and businesses are water efficient, to reduce the overall demand for water, to meet

government targets and to ensure there is enough water to go around.

2.0 Background

2.1 Anglian Water

Anglian Water serves 20% of the total landmass of England and Wales and covers the largest geographical area of any water company. The Anglian Water region is the driest area in the country, receiving around two thirds of the average national rainfall. The population in the East of England has increased by 8.3% between 2011-2021, according to census data, which is the highest rate of growth in the UK. At Anglian Water we are committed to catering for this population growth and subsequently enabling growth in the economy. Agriculture and agri-food processing are vital industries in the East of England and require high volumes of water.

2.2 The EA's Abstraction Reduction Strategy

Water abstraction from the environment provides essential water for public water supply, agriculture and industry. However, unsustainable levels of abstraction impact the ecology and resilience of our rivers, wetlands and aquifers. Having the right flow in our rivers and protecting groundwater levels is essential to supporting healthy ecology, enhancing natural resilience to drought, and ensuring that rivers continue to support recreation and wellbeing . The Environment Agency (EA)'s abstraction reduction strategy is therefore essential for the health of our environment, but it does present some challenges for both ourselves and other businesses, especially as changes have been made to the EA's approach since we developed our last long term water resources management plan.

We also have three public water supply groundwater licences which require closure by June 2024. A further two public water supply groundwater sources have been identified at potential risk of closure

by 2030. This, as well as the other pressures on our water supply, adds even greater pressure to the gap between demand for water and our ability to supply.

2.3 Water Resource Management Plans (WRMPs)

Every 5 years water companies create a WRMP which sets out how water companies intend to achieve a secure supply of water for customers and a protected and enhanced environment. This includes consideration of which abstraction licences are being reduced or removed and predictions for requirements from new homes and businesses. There have always been requests for new or increased water connections after the WRMP has been drafted and we build in an element of flexibility into the plan for unforeseen changes. However, due to the changes in the EA's abstraction reduction strategy the number of requests received by Anglian Water for non-domestic connections has increased in the last year as business are also having their licences reduced or revoked, or simply cannot access any other source of water. At the same time we have seen new requests related to the 'onshoring' of production following Brexit and other supply chain issues, as well as new demands relating to net zero ambitions.

113.0 How can Anglian Water Help?

Anglian Water has a statutory duty to supply water for domestic purposes. This means we are legally obliged to supply water to all household properties as well as any domestic requirements (e.g., drinking water, hand-basins, toilets and showers) of non-household properties. In many cases, domestic demand will be the only requirement for non-household properties (e.g., schools, hospitals, offices, shops and hairdressers). Non-domestic demand refers to water use for industrial processes, (e.g., agri-food production or car washes), and there is no legal requirement for us to supply for this type of water usage where it might put at risk our ability to supply water for domestic purposes.

Although Anglian Water do not have a statutory obligation to supply for non-domestic purposes in these circumstances, we factor this into our WRMP and we do everything we can to support businesses in the region, with the help of the water retail market. However, as described above, the situation is now changing, due to water supply being squeezed by abstraction reduction, climate change and a fast-growing population. Therefore, where new and unplanned non-domestic requests are received, there might be the need to decline in order to protect existing supplies and the environment. However, we are always willing to provide practical support and advice on navigating the regulation and the EA's abstraction reduction strategy to businesses in our region.

124.0 What can your water retailer do to help?

The water retailer is the main point of contact for any water related issues or advice a business might need. We would always advise businesses contact them first and foremost to discuss water supply. Water retailers can provide information, including on how to become more water efficient and make the water you already have go further.

135.0 What can businesses do to help?

The cheapest and most sustainable solution to the region's water resource problem is to collectively reduce our water consumption. Water efficiency measures can be an extremely effective way to free up water resources for business expansion or new connections. Anglian Water have an ambitious smart metering roll out programme across the region for all homes and businesses which help customers change their behaviour and become more water efficient. For our largest business customers, we offer smart meter data down to 15-minute intervals.

Water efficiency audits should be undertaken before new water supplies are requested. This could include installing water efficient devices (e.g., aerated taps and shower heads, low flush or air flush toilets) and efficient white goods (e.g., dishwashers and washing machines). Water demand can also be reduced through fitting smart meters, which measure water usage and provide regular readings, helping to identify leaks and tracking water consumption. Meters can also help support and encourage behavioural change.

In many cases, water reuse can also be a good option for reducing demand for water. Water reuse generally refers to the capture, treatment (if required) and use of alternative water supplies for non-potable purposes. It includes rainwater and surface water harvesting, greywater recycling and wastewater recycling. Water reuse technologies have the potential to save significant amounts of water, especially in situations where non-potable water could be used in production.

6.0 What we need from government?

There are several things Anglian Water is calling on the government to do to help address this challenge and protect water resources:

1. Include every sector in a national campaign to reach the 20% water demand reduction target published in the Environment Act 2021.
2. Introduce a mandatory water efficiency labelling system for water using products, similar to the scheme already in place for energy using products.
3. Tighten building regulations and enforcement so that new homes are built to ambitious water efficient standards, as set out in the government's EIP (Environment Improvement Plan) 2023.
4. Make a commitment to link water efficiency with existing and new energy efficiency policies and retrofitting programmes.
5. Recognise the need to create new headroom to enable non-domestic growth.
6. Support us in delivering large scale strategic water resources options (for example, Anglian Water's two new reservoirs and new pipelines).