Hertfordshire Climate Change and Sustainability Partnership

Strategic Action Plan: Water Sustainability

2021

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1. Introduction

- 1.1 The Strategic Action Plan for Water Sustainability outlines the Hertfordshire Climate Change & Sustainability Partnership's (HCCSP) ambition to ensure the clean and plentiful supply and sustainable management of Hertfordshire's water resource.
- 1.2 Without suitable application of and investment in water resource management (both fresh and waste), the water quality of Hertfordshire's aquifers, rivers and other watercourses is at risk of degradation. This would have undesirable consequences for the county's water environments and for biodiversity.
- 1.3 The Plan seeks to address challenges around high levels of water consumption and abstraction, faulty or inappropriate infrastructure, increased water stress from future development, and pollutants entering the waterways. The Plan also seeks to address the impacts of climate change which will lead to drier conditions exacerbating the above challenges and will lead to wetter winters and increased summer storms, increasing local flooding.
- 1.4 To date, key partners involved in the Plan's development include the Hertfordshire Sustainability Officers Group's (HSOG) water sub-group which includes representatives from East Herts District, Hertfordshire County, Hertsmere District, St Albans District, and Three Rivers District Councils.
- 1.5 Feedback has been incorporated from other key partners including; HSOG, Hertfordshire's three primary water companies (Affinity Water, Anglian Water and Thames Water), the Lead Local Flood Authority (LLFA) and the Environment Agency (EA).

2. Policy context

2.1 International:

- 2.1.1 Water is at the core of sustainable development and is critical for socioeconomic development, energy and food production, healthy ecosystems and for human survival. Water is also at the heart of adaptation to climate change, serving as the crucial link between society and the environment.
- 2.1.2 As the global population grows, there is an increasing need to establish inclusive water management which recognises the competing social, commercial and environmental demands on water resources so that communities and ecosystems have a sustainable water supply. At the

- human level, water cannot be seen in isolation from sanitation. Together, they are vital for reducing the global burden of disease and improving the health, education and economic productivity of populations.
- 2.1.3 'Clean Water and Sanitation' is featured in the United Nation's 17 Sustainable Development Goals. However, access to a reliable supply of sustainably managed water underpins more than half of all 17 Goals.

2.2 National:

- 2.2.1 In its 25-year environment planⁱⁱ, the government commits to achieving a clean and plentiful supply of water and to restoring 75% of the UK's one million hectares of terrestrial and freshwater protected sites to favourable condition.
- 2.2.2 The EA is a non-departmental public body, sponsored by the Department for Environment, Food and Rural Affairs (Defra); its responsibilities relate to the protection and enhancement of England's environment, both land and water.
- 2.2.3 Under the Water Framework Directive (WFD) the EA is classifying all rivers to identify the pressures upon them and publicly appraise the options for tackling these with a view that all rivers should achieve good chemical and ecological status by 2027 at the latest. Each catchment is required to have a River Basin Management Plan by the end of 2021. Although the WFD is a European Directive, because it has been fully incorporated into UK law it will remain in effect following Brexit.
- 2.2.4 In 2020 the EA published *Meeting our Future Water Needs: a National Framework for Water Resources*ⁱⁱⁱ, which explores the long-term needs of all sectors that depend on a secure supply of water; including public water supplies for homes and businesses, direct abstraction for agriculture, electricity generation, industry, and the water needs of the natural environment.
- 2.2.5 Additionally, the Framework brings together two of the government's pledges that were set out in its 25-year environment plan; to leave the environment in a better state than we found it, and to improve the nation's resilience to drought and minimise interruptions to water supplies.
- 2.2.6 The Framework supports the case for water resource investment to increase drought resilience, so the nation's water supplies are fit for the future. It also marks a shift to strategic regional planning by setting out the principles, expectations and challenges for five regional groups across England.

2.2.7 Regional Plans are expected to develop a detailed picture of the future water resource needs of each region, setting out the type and scale of the challenge to public water supplies and considering the needs of other users.

- 2.2.8 The EA are also the lead agency in relation to flood risk. In 2020 they published their Flood and Coastal Erosion Risk Management (FCERM) Strategy for England^{iv} with a vision to build a nation resilient to flooding through partnership working with stakeholders such as the HCCSP.
- 2.2.9 A private members bill on sewage proposed by Philip Dunne MP, Chair of the Environmental Audit Committee has secured significant cross-party support. A second reading of the bill has been delayed due to the pandemic but is expected in due course.
- 2.2.10 In 2020 a joint industry-government group was established to tackle river pollution. In January 2021 this group agreed a new objective; to prevent damage from storm overflows.

2.3 Local:

- 2.3.1 Regional water planning follows a catchment approach, rather than following county boundaries, as such regional planning is an important aspect of strategic water management as water resources can cross multiple administrative boundaries. Water resource management in Hertfordshire must therefore give due consideration to the strategic planning taking place within both the Water Resources South East (WRSE) region and the Water Resources East (WRE) region.
- 2.3.2 Water resources in both regions are already stressed; in the South East this is primarily due to the region's rising population and position as the nation's economic powerhouse, while in the East there are significant demands from agriculture. Meeting rising demand for water requires a more joined-up, regional approach to managing water resources. WRSE and WRE are both developing Regional Plans' if that will be used as a blueprint for water supply investment by the water companies across each region. The aim of the Regional Plans is to provide an affordable, resilient and sustainable water supply that delivers for the public, industry and the natural environment for years to come.
- 2.3.3 Hertfordshire is heavily reliant on water sourced from chalk aquifers; however, this resource is becoming stressed by increased consumption and reduced summer rainfall. Future water needs will require investment and delivery of resource efficiency, together with new water resource

- development, including sharing resources across water company boundaries.
- 2.3.4 Hertfordshire Growth Board^{vii} is the way the county is now working together to manage growth. Hertfordshire Growth Board is made up of the County Council, the ten District Councils and Hertfordshire's Local Enterprise Partnership. The Hertfordshire Growth Board identifies the need for well connected, good quality homes for all, in healthy independent and safe communities, with a thriving, productive workforce and economy. To achieve this a secure and safe water supply is fundamental^{viii}. The Growth Board recognises that water companies need to deliver short term strategic goals to reduce consumption, while also working towards the long-term goal of improving infrastructure which meets localised growth demands around existing settlements and securing a transfer for a new regional reservoir by 2055^{ix}.
- 2.3.5 Hertfordshire is located in one of the driest regions of the country and yet its residents are amongst the highest water users nationally. The impacts of climate change on our water supply may make it an even scarcer resource in the dryer months and the wetter months can cause flooding. The level of growth predicted in the county will lead to an increase in demand for potable water unless appropriate efficiency measures are introduced, and behaviour changes are adopted. In addition, there will be increased pressure on wastewater infrastructure.
- 2.3.6 Hertfordshire also has a large number of rivers and associated flood plains. Due to climate change the county will be affected by increased frequency and intensity of flooding which can have negative impacts on the economy, environment and societal wellbeing.
- 2.3.7 HCCSP identified four priority areas for water as a focus for an initial officer work programme; Work with the water companies to understand the Hertfordshire water environment, scarcity, supply and demand, Explore the concept of water neutrality in new built development proposals, Work in partnership with water companies and the EA to develop co-ordinated campaigns to change behaviours around water usage, Explore options for updating planning policy documents. These four key areas have evolved into the current action plan set in section 4.

3. Defining the problem

3.1 High and increasing levels of consumption:

- 3.1.1 The EA reports* that England's current daily water demand is approximately 15,000 million litres. This is expected to rise by 3,435 million litres (23%) by 2050, with the South East region accounting for over half of England's additional future demand (1,765 million litres per day). The South East region's daily demand increase includes 640 million litres for drought resilience, 459 million litres for population growth, 431 million litres for environmental improvements, and 111 million litres as a direct result of climate change.
- 3.1.2 While the pressures in the Eastern region are less extreme, its demand increase of 570 million litres per day also includes 226 million litres for drought resilience, 193 million litres for population growth, 75 million litres for environmental impacts, and 76 million litres resulting from climate change. However, the East region is also projected to require 284 million litres per day for agriculture, more than five times the demand in the South east region.
- 3.1.3 The South East is currently home to 19 million people with a further 4 million expected over the next few decades. With almost as many businesses in the region as the rest of the country put together, it currently makes up 37% of the national economy. Including 28 million annual tourists, the total water demand reaches approximately six billion litres every day. Most of the South East region (including Hertfordshire) is designated as being in serious water stress by the EA.
- 3.1.4 Currently, the national average daily water consumption per capita is 143 litres, compared with 85 litres in the 1960s. In Hertfordshire, consumption is even higher at around 145-150 litres. This reflects higher average levels of affluence in Hertfordshire, compared with other parts of the country; with older houses, built before 1945, and high occupancy dwellings both contributing significantly to the above average consumption. Household water use is further increasing due to the Covid-19 pandemic which has resulted in lockdown periods and changes to working patterns. This may lead to long-term changes which could exacerbate water resource pressures from the housing growth agenda.
- 3.1.5 Because Hertfordshire falls within an area of serious water stress, the Secretary of State has determined that water companies are empowered to install water meters in all domestic properties. Nationally, daily per capita consumption varies dramatically between metered (129 litres) and non-metered properties (171 litres). The equivalent figures for Affinity, the

water company which supplies much of Hertfordshire's water, are higher for both systems (136 litres and 177 litres respectively), although the same marked contrast is still present. However, there are concerns that the low cost of water (approximately 1/3 of a penny per litre) may not present sufficient encouragement for many Hertfordshire households to reduce consumption.

3.1.6 Current figures fall short of the water efficiency targets set out in national Building Regulations. These call for measures in new developments to ensure potential daily per capita consumption does not exceed 125 litres, or an even more stringent target of 110 litres, at the discretion of Local Planning Authorities (LPA). Upcoming revisions to Building Regulations ('Future Homes Standard') will seek to strengthen the levels of water performance for new development. Given Hertfordshire's growth agenda, which is expected to deliver 100,000 new homes by 2031, it is vital that development over the coming decade recognises water stress as a key concern.

3.2 Climate change impacts and environmental consequences:

- 3.2.1 Much of Hertfordshire's drinking water is sourced from chalk aquifers, abstraction from which presents a cost-effective means of storage and supply which minimises the need for pre-treatment. However, aquifers rely on predictable and stable recharge rates from annual precipitation; this process has been under pressure for a number of years as a result of high abstraction rates and has been further impacted by climate change in recent years. Increasingly dry summers and more regular periods of intense rainfall leading to runoff and flooding, have reduced levels of 'effective rainfall', thereby limiting aquifer recharge and leading to prolonged periods and expansive stretches of Hertfordshire's chalk rivers experiencing low flows and drying out.
- 3.2.2 Following three consecutive years of below average winter rainfall, the EA declared an environmental drought in Hertfordshire in 2019. This reflects not only low flow in Hertfordshire's streams and rivers, but also low dissolved oxygen levels and higher toxicity levels, all of which impact on habitat quality and biodiversity. Chalk streams are a finite global resource, 85%xii of which are found in England, but only a quarterxiii of these are classified as being in good condition by the EA. Efforts to address this include scaling back abstraction licences to reduce the quantity of water removed from aquifers to help ensure the flow of water in chalk streams. However, investment in aquifer recharge projects and additional water resources will be necessary to safeguard long-term supply in light of increasing future demand and water stress.

- 3.2.3 Low water flow is a major concern to the health of chalk streams; however, the greater frequency of extreme weather events will likely lead to an increase in flood events and untreated wastewater discharge into rivers. These storm surge events have typically prompted water companies to discharge untreated sewage into rivers. Both issues are a concern locally and nationally, posing a risk not only to the environment but also to community health and wellbeing, which underlines a need for greater investment and enforcement.
- 3.2.4 Flooding is not only a risk to life but impacts on the local economy. Climate change is likely to increase the area at risk of flooding and make flood events more frequent and intense. Local authorities also pay the price in incident response and post incident recovery. New developments must steer away from areas at risk of flooding and redevelopment must be resilient. Re-naturalising rivers and improving wetland habitat/river buffer zones will not only decrease flood risk but improve water quality via filtration and improve local biodiversity.
- 3.2.5 Managing surface water flooding requires involvement by a range of stakeholders. In 2020 the Jenkins Review^{xiv} was published; this provides an assessment of arrangements for determining responsibility for surface water and drainage assets and identifies recommendations to streamline these to make them more straightforward.

3.3 HCCSP influence:

- 3.3.1 Control and responsibility for the supply and management of water, and the regulation of these activities, are held respectively by the water companies, Ofwat and the EA. As such, many of the actions required to ensure a sustainable water system which is resilient to future changes are within the gift of these partners. Such actions include investment in both new water resource infrastructure and wastewater treatment, as well as enforcement of infringements on environmental standards. These actions are outside of HCCSP's direct control, as is water pricing which is set nationally by central government. However, these partners are not in complete control of these activities. Local planning teams decide whether developments are approved in areas at risk of flooding and whether they incorporate water efficiency and quality measures. HCCSP can influence planning teams and wider local authority teams to take into consideration these aspects in their activities and projects.
- 3.3.2 However, HCCSP can make a valuable contribution in four themes:
 - 1. Raising awareness of the value of water and promoting behaviour change to residents and businesses

- 2. Facilitating partnership working through multiple stakeholder engagement
- 3. Enabling improvements in water efficiency and flood mitigation through the planning system
- 4. Lobbying government for greater investment and changes in national policy
- 3.3.3 Productive engagement between HCCSP and the EA, water companies and Catchment Partnerships is essential to ensure that any actions directed by HCCSP support the efforts of its partners and benefit from their experience, expertise and resources.

3.4 Forthcoming legislation and policy:

- 3.4.1 The impending Environment Bill^{xv} is expected to commit the government to set at least one national target relating to water, to be introduced by October 2022. Currently, no information is available regarding the focus or ambition of this target, however once announced, the HCCSP may choose to respond through a consultation on this target, and to review this Action Plan for Water Sustainability accordingly. The Environment Bill may also drive updates to future Building Regulations, increase the focus on water metering and drive the introduction of mandatory water appliance labelling.
- 3.4.2 The Environment Bill is also expected to introduce the government's policy of Biodiversity Net Gain into the planning system. This shall require that new development results in a 10% net improvement in biodiversity, which may be delivered onsite or offset on nearby land or other strategic sites (land banks). This is expected to result in funding for habitat improvement and creation, some of which could be directed to projects which improve the resilience and quality of water bodies and mitigate flood risk.
- 3.4.3 The 2024 price review (PR24) by Ofwat will set a consumer price for water for the following five years. This will impact significantly on water company investment in water infrastructure.

4. SMART actions and targets

The following actions will be kept under regular review with an annual assessment of required work programmes for the financial year to be made every April and a progress report to be presented to HCCSP annually.

Theme	Action	Organisation(s)who will deliverthe action	Targets or indicators:	Timeframe for delivery
Enabling improvements in water efficiency and flood mitigation through the planning system	Engage with the LLFA to explore potential retrofitted SuDS through a pilot project on one partner's premises and land under their control.	LLFA (HCC) & Districts (collaboration)	Pilot delivery	2022/23
Facilitating partnership working through multiple stakeholder engagement	Each local authority to commit to assessing water consumption across its estate and putting in place measures and targets to achieve substantive reductions.	Each council (individual)	To be determined by each local authority	Assessment complete 2022/23. Targets from 2023/24 onwards

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Theme	Action	Organisation(s) who will deliver the action	Targets or indicators	Timeframe for delivery
Enabling improvements in water efficiency and flood mitigation through the planning system	Maximise use of Building Regulationlegislation by making planning policyprovision to: - Ensure all new developments and extensions to existing properties use PartG option for 110 litres per capita per household as consumption target.	Each council – LPA (individual)	Agreement that all LPAs have adopted within Local Plans or via Supplementary Planning Documents (SPDs)	As soon as practicable within each council's planning policy review timetable. To be reviewedannually to monitor adoption progress
Enabling improvements in water efficiency and flood mitigation through the planning system	Commit to include local authority's water and sewerage undertakers and the EA when consulting on Local Plan and SPD development	Each council – LPA (individual)	Agreement that all LPAs have adopted this process	As soon as practicable within each council's planning policy review timetable. To be reviewed annually to monitor adoption progress
Enabling improvements in water efficiency and flood mitigation through the planning system	Commit to consult water and sewerage undertakers at planning stage for all major developments of ten homes or above	Each council – LPA (individual)	Agreement that all LPAs have adopted this process	2021/22

Enabling improvements in water efficiency and flood mitigation through the planning system	Seek to maximise alignment and consistency of planning policy across LPAs on water suitability. To further this, develop a template SPDfor water sustainability	Each council – LPA (individual) HCCSP Co-ordinator	Broadly consistent policy Policy audit of local plans	As soon as practicable within each council's planning policy review timetable. To be reviewedannually to monitor adoption progress 2021/22
Enabling improvements in water efficiency and flood mitigation through the planning system	Review feasibility for LPAs to consult the LLFA on surface water management for all developments (not just major developments) in priority flood risk areas. This will have resource implications for the LLFA which would require exploration	LLFA (HCC)	Recommendation on feasibility	2021/22
Enabling improvements in water efficiency and flood mitigation through the planning system	Review feasibility for LPAs to consider transferring to the LLFA their permissive powers to manage surface water under the Land Drainage Act 1991	LLFA (HCC)	Recommendation on feasibility	2021/22
Enabling improvements in water efficiency and flood mitigation through the planning system	LPAs to review current performance in applying the sequential test for flooding from all sources, both in the developmentof local plans and when assessing planning applications, and report performance to HSOG	Each Council (LPA) individual to review - HSOGto produce report	Summary report production	2022/23

Enabling improvements in water efficiency and flood mitigation through the planning system	LPAs to consider policy requiring that new developments include water recycling systems, such as water butts	Each council – LPA (individual)	Agreement that all LPAs have adopted within Local Plans or via Supplementary Planning Documents (SPDs)	reviewedannually to monitor
Enabling improvements in water efficiency and flood mitigation through the planning system	Engage with EA to facilitate and promote training and awareness raising for LPAs arounds flood risk. To include at a minimum written guidance and a bespoke webinar. Explore potential for delivery in conjunction with LLFA	HSOG, EA, LLFA (HCC)	Schedule training webinar	2021/22
Enabling improvements in water efficiency and flood mitigation through the planning system	LPAs to consider policy requiring that new developments include water recycling systems, such as water butts	Each council – LPA (individual)	Agreement that all LPAs have adopted within Local Plans or via Supplementary Planning Documents (SPDs)	reviewed annually to monitor
Enabling improvements in water efficiency and flood mitigation through the planning system	Commit to have regard to recommendations of the Jenkins Review under the heading 'Planning System': That LPAs ensure that appropriate professional expertise is brought to bear in decision making on all planning applications where there are surface water drainage implications. That LPAs ensure the submission of drainage plans at an early stage in the planning approval process, and that the whole development is carried out in accordance with the approved plans	Each council – LPA (individual)	Agreement that all LPAs have adopted this approach	2021/22

Theme	Action	Organisation(s)who will deliverthe action	Targets or indicators	Timeframe for delivery
Raising awareness of the value of water and promoting behaviour change to residents and businesses	Support water campaigns and promotionsby water companies and other relevant stakeholder groups, to promote water saving behaviours	HSOG & each council - Communicationsteams (collaboration)	Report annually on campaigns supported	To be reviewed annually
Raising awareness of the value of water and promoting behaviour change to residents and businesses	Promote through partners' communications channels the uptake ofwater companies' water metering programmes	HSOG & each council – Communicationsteams (collaboration)	Communications through multiple channels	From 2021/22 onwards
Raising awareness of the value of water and promoting behaviour change to residents and businesses	Facilitate water company visits to schools to provide education on the value of water saving behaviour change 'Bin it – don't block it' promotions, highlighting the link between water consumption, waste and the health of chalk rivers	County Council & Water companies	Provision of resource material for all schools to disseminate. Water companies to visit two schools per month	Academic year 2021/22 onwards

Raising awareness of the value of water and promoting behaviour change to residents and businesses	Produce a leaflet advising a best practice approach to hard surfacing driveways which facilitates surface water drainage, for distribution via LPAs	LLFA	Leaflet production	2022/23
Facilitating partnership working through multiple stakeholder engagement	Engage with water companies and Catchment Partnerships annually to review progress and agree priorities for partnership working	HSOG & water companies	Annual meeting held	From 2021/22 onwards
Facilitating partnership working through multiple stakeholder engagement	Thames Water and Anglian Water to provide update on Drainage & Wastewater Management Plans to illustrate how they are reducing sewage discharges into rivers at peak flow. This can how HCCSP can support these ambitions	HSOG & water companies	Annual update	From 2021/22 onwards
Facilitating partnership working through multiple stakeholder engagement	Facilitate water companies to visit schools to repair leaks and install water meters and water saving devices	County Council & Water companies	Water companies to visit two schools per month	From 2022/23 onwards
Facilitating partnership working through multiple stakeholder engagement	Local authorities to facilitate contact between water companies and housing associations in support of the installation of water saving devices	Each council (individual)	Confirmation that introductions have been made	2021/22

Facilitating partnership working through multiple stakeholder engagement	Engage Catchment Partnerships to identify collaboration opportunities to improve water quality and mitigate flood risk.	HSOG	Initial scoping meeting	2021/22 onwards
Facilitating partnership working through multiple stakeholder engagement	Engage EA to understand how they currently/plan to enable local experts to input accurate evidence on the state of chalk rivers and on the EA's assessment of pressures and classifications for chalk river condition assessment. Also, how EA plans to consult locally on the development of River Basin Management Plans.	HSOG	Initial scoping meeting	2021/22
Facilitating partnership working through multiple stakeholder engagement	Engage with the WRSE and WRE on development of Regional Plans.	HSOG	Initial scoping meeting	2021/22
Facilitating partnership working through multiple stakeholder engagement	Engage with neighbouring Authorities within the South East region to explore opportunities for wider collaboration.	HSOG	Initial aim – to engage with one neighbouring Local Authority	2020/21 onwards
Facilitating partnership working through multiple stakeholder engagement	Engaging Hertfordshire Building Control to run a CPD event in conjunction with water companies, which will outline the issues facing the industry and the opportunities for surveyors to address these challenges through the regulatory framework	Hertfordshire Building Control, HSOG & water companies	CPD event delivered	

Facilitating partnership working through multiple stakeholder engagement	Monitor results of the LLFA's Property Flood Resilience Pilot scheme (modifications to individual properties to address flood risk) and identify opportunities to support future rollout as appropriate	LLFA (HCC)	Report from LLFA and recommendations for future HCCSP involvement	
Lobbying government for greater investment and changes in national policy	Produce report to inform decision to lobby government to introduce a variable pricing model for water consumption; for example, a higher payment rate for usage above a set threshold of metered consumption	Water UK	Report production	
Lobbying government for greater investment and changes in national policy	Produce report to inform decision to lobby government for the introduction of mandatory water efficiency labelling on all water appliances, and; to support Water UK's proposed amendment to Clause 48 of the Environment Bill, requiring the Secretary of State to publish an extended Producer Responsibility scheme in respect of single use plastics to address damage to infrastructure from products such as wet wipes which cause 300,000 sewer blockages each year nationally	HSOG	Report production	2020/21
Lobbying government for greater investment and changes in national policy	Following HCCSP agreement, produce letter of support for Private Members Bill from Phillip Dunne MP around sewage discharge	HSOG	Letter production	2020/21

Lobbying	Produce report to inform decision to support	HSOG	Report production	2021/22
government for	recommendation from the Jenkins review;			
greater investment	That the Ministry of Housing, Communities and			
and changes in	Local Government, in their forthcoming review			
national policy	of the National Planning Policy Framework,			
	ensure that advice on the vital importance of			
	achieving sustainable drainage in all new			
	development is prominent, clear and			
	unequivocal.			

5. Funding

- 5.1 It is expected that the primary cost associated with these actions will be in the form of officer time; that of the HCCSP Coordinator and relevant County/District Council officers. It may be within the interests and gift of water companies to provide funding for officer time to support delivery on actions which meet their own strategic objectives.
- 5.2 There may also be costs associated with a review of the potential to expand introduction of retrofitted SuDS on HCCSP member premises; while the delivery on review recommendations (including SuDS maintenance) will have an associated cost.

6. References

THE 17 GOALS | Sustainable Development (un.org)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

[&]quot;National Framework for water resources summary.pdf (publishing.service.gov.uk)

iv Environment Agency – National Flood and Coastal Erosion Risk Management Strategy for England (publishing.service.gov.uk)

^v Home | WRSE - Water Resource South East

vi Water Resources East | Safeguarding a sustainable supply of water (wre.org.uk)

vii HGB - Hertfordshire: prepared to pioneer, ready to do the difficult, to build on success and shape a future of opportunity... (hertfordshiregrowthboard.com)

viii Hertfordshire-Fit-for-the-Future.pdf (hertfordshiregrowthboard.com)

ix HIFP-Final-Report-low-res.pdf (hertfordshiregrowthboard.com)

^{*} National Framework for water resources summary.pdf (publishing.service.gov.uk)

xi https://www.savewatercleanclever.co.uk/

xii Protecting chalk streams - Creating a better place (blog.gov.uk)

xiii wwf chalkstreamreport jan15 forweb.pdf

xiv Report of a review of the arrangements for determining responsibility for surface water and drainage assets (publishing.service.gov.uk)

xv Environment Bill 2019-21 — UK Parliament