



Essex and Suffolk Water - Water Resources Management Plan 2024

Environmental Report - Appendices

April 2024

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A. SEA Process Tasks

Table A.1: SEA Process Tasks

SEA Stage	SEA Task	Task Purpose
Stage A Setting the context and objectives, establishing the baseline and deciding on the scope	A1: Identifying other relevant plans, programmes, and environmental protection objectives	To establish how the plan or programme is affected by outside factors, to suggest ideas for how any constraints can be addressed, and to help to identify SEA objectives
	A2: Collecting baseline information	To provide an evidence base for environmental problems, prediction of effects, and monitoring; to help in the development of SEA objectives
	A3: Identifying environmental problems	To help focus the SEA and streamline the subsequent stages, including baseline information analysis, setting of the SEA objectives, prediction of effects and monitoring
	A4: Developing SEA objectives	To provide a means by which the environmental performance of the plan or programme and alternatives can be assessed
	A5: Consulting on the scope of SEA	To ensure that the SEA covers the likely significant environmental effects of the plan or programme. This is a statutory five-week consultation period, as a minimum)
Stage B Developing and refining alternatives and assessing effects	B1: Testing the plan or programme objectives against the SEA objectives	To identify potential synergies or inconsistencies between the objectives of the plan or programme and the SEA objectives and help in developing alternatives
	B2: Developing strategic alternatives	To develop and refine strategic alternatives
	B3: Predicting the effects of the draft plan or programme, including alternatives	To predict the significant environmental effects of the plan or programme and alternatives
	B4: Evaluating the effects of the draft plan or programme, including alternatives	To evaluate the predicted effects of the plan or programme and its alternatives and assist in the refinement of the plan or programme
	B5: Considering ways of mitigating adverse effects	To ensure that adverse effects are identified and potential mitigation measures are considered
	B6: Proposing measures to monitor the environmental effects of plan or programme implementation	To details the means by which the environmental performance for the plan or programme can be assessed
Stage C Preparing the Environmental Report	C1: Preparing the Environmental Report	To present the predicted environmental effects of the plan or programme, including alternatives, in a form suitable for public consultation and use by decision-makers
Stage D Consulting on the draft plan or programme and the Environmental Report	D1: Consulting on the draft plan or programme and Environmental Report	To give the public and the Consultation Bodies an opportunity to express their opinions on the findings of the Environmental Report and to use it as a reference point in commenting on the plan or programme. There is no set time period for consultation. The SEA Directive states that the Consultation Bodies and the public ' <i>shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme or its submission to the legislative procedure</i> '. The Environmental Report will be consulted upon alongside the draft WRMP To gather more information through the opinions and concerns of the public

SEA Stage	SEA Task	Task Purpose
	D2: Assessing significant changes	To ensure that the environmental implications of any significant changes to the draft plan or programme at this stage are assessed and taken into account
	D3: Decision making and providing information	To provide information on how the Environmental Report and consultees' opinions were taken into account in deciding the final form of the plan or programme to be adopted
Stage E Monitoring implementation of the plans or programme	E1: Developing aims and methods for monitoring	To track the environmental effects of the plan or programme to show whether they are as predicted; to help identify adverse effects
	E2: Responding to adverse effects	To prepare for appropriate responses where adverse effects are identified

B. Consultation Comments Log

B.1 Scoping Report Consultation Log

Table B.2: Scoping Report Consultation Log

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
Comments from Natural England – 22.04.2022				
1	Baseline information	3.1.2 – Environmental Baseline	We agree that in-combination assessments need to be undertaken and ESW have a responsibility to demonstrate this has been done by either the donor or the recipient	Noted, however no change to proposed approach is proposed.
2		3.2 Environmental Baseline - Biodiversity, Flora and Fauna	We note and agree with the inclusion of Local Wildlife Sites and undesignated priority habitats, although these are not mentioned in Section 3.2 but are included in Appendix E. We note there is a difference in the level of detail presented for the Biodiversity, Flora and Fauna section within the environmental baseline, when compared to the environmental baseline section for water. Statistical information for ecological sites is lacking, therefore, we would recommend including information regarding their condition and sensitivity to impacts on freshwater quality and quantity.	Information regarding the condition and sensitivity to be added to baseline water section - using WFD water quality indicators
3		3.4.3 Covid Impacts on Water Demand	We welcome the inclusion of Essex and Suffolk Water's current long-term goal for Per Capita Consumption (PCC) by 2040. We refer to the proposed environmental targets for water demand within the Environment Act consultation (Consultation on environmental targets - Defra - Citizen Space) which proposes a 20% reduction in PCC by 2037. Based on the reported figures for PCC between 2019-2021, we would expect strong consideration and high prioritisation of demand management options for realistic progress to be made towards reducing PCC and achieving this long-term goal.	Demand management options being considered as part of the draft WRMP and included in the best value planning work. No updates proposed.
4		3.14.10 – Future Baseline - Biodiversity, Flora and Fauna	We would recommend including Local Nature Recovery Strategies (LNRS) in addition to Nature Recovery Networks. Additionally, we would expect the SEA assessment and/or SEA Environmental Report to identify and detail all designated sites and their notified features, for options where impacts cannot be excluded the relevant SSSI Monitoring Specifications should be referred to	Environmental Report to include Local Nature Recovery Strategies in addition to Nature Recovery Networks. Designated sites are considered as part of the SEA through biodiversity metrics.
5		3.15 – Key Issues for the WRE Regional Plan	We would recommend including Nature Recovery Network and Local Nature Recovery Strategies within the statement for the key issues associated with Biodiversity, Flora and Fauna. As the Lawton principles, of 'bigger, better and more joined up' are the foundations of these new statutory frameworks. The plan needs to address the current effects of climate change along with future projections on key issues.	Considered addressed through response to comment 4. The climate change metric addresses current effects of climate change in the context of future projections.
6		Appendix A – Review of Relevant Plans, Policies and Programmes	We (strongly) encourage the inclusion of Diffuse Water Pollution Plans (DWPPs) for relevant river catchments as ESW's WRMP24 may affect the environmental objectives of these plans through reductions in flow / dilution capacity.	The plans and policies have been included in Appendix C: Policies, Plans and Programmes Review in this Environmental Report

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			We would encourage the inclusion of Drainage and Wastewater Management Plans (DWMPs) for relevant catchments to ensure a more cohesive and holistic approach to water management within ESW's plan region. We would expect reference to the most recent River Basin Management Plans and Flood Risk Management Plans available. Additionally, we would recommend the inclusion of the Nature for People, Climate and Wildlife (2021) policy paper which includes the England Peat Action Plan.	
7		Appendix B – Baseline Maps	No maps were provided with or within the draft document, so we are unable to provide comment.	Maps are to be included in Appendix D in order to support the baseline.
8	Key issues and opportunities	Table 4.1 Biodiversity, Flora and Fauna	<p>“Wetland and marsh habitat rely on water, the ESW WRMP24 should ensure that it does not affect these areas through over abstraction and should look for opportunities to reduce abstraction pressure where cost effective and possible” We believe this should state unsustainable abstraction, not over abstraction. We would recommend including Local Nature Recovery Strategies (LNRS) in addition to Nature Recovery Networks.</p> <p>“Achieve biodiversity net gain where possible”. We agree there are opportunities for the plan to deliver BNG, this is mandatory in the Environment Act, and this should be clearly expressed and accounted for at this planning stage. As the long-term projects within the plan will fall into the period when BNG is mandatory</p>	<p>Where statement is included in Environmental Report it will be reworded to read "unsustainable abstraction". As per response to comment 4, the Environmental Report will include reference to local nature recovery strategies</p> <p>The Environmental Report will make reference to BNG 10% mandatory requirement - and that there are opportunities in some areas to find improvements on this standard.</p>
9		Table 4.1 Water	<p>Quantitative pressures are common for water bodies and wetlands although difficult and not fully quantified so likely to be underrepresented in existing data. A suitable level of precaution or additional investigation is therefore needed for these habitats</p> <p>There is an important interaction between poor water quality and flooding – in which, sediment and pollutant rich standing water is more damaging than clean standing water. The challenge here in relation to flood waters, is to identify what is surplus water and how it can be captured in line with timescales of likely intense, and localised events, that can be retained for potable supply and not needed for environment or other users. This can have environmental and biodiversity benefits. Furthermore, identifying opportunities to combine this with areas at risk of flooding and with flood risk management can deliver multiple benefits.</p> <p>There is increasing evidence of deterioration in the quality of groundwater, particularly, N and P concentrations. Actions should not add to reducing quality and instead should aim to improve their condition by ensuring infiltration and discharges to ground do not increase nutrient and pollutant load in aquifers.</p>	Noted, however no change to proposed approach is proposed.

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
10		Table 4.1 Soil	Opportunities exist for improving soil management to improve resilience to rainfall events and drought. Such as improving organic matter, soil structure, and improved infiltration leading to reduced surface water run-off and improved moisture retention within soils.	Noted, however no change to proposed approach is proposed.
11		Table 4.1 Air	A lot of Protected Sites, and by presumption, priority habitats outside of Protected Sites, are affected by air quality issues. Most notably, N deposition and enrichment (in particular, fens and heaths, where N critical loads and levels are already exceeded). www.apis.ac.uk	Add reference to protected habitats impacted by air quality issues
12		Table 4.1 Climatic Factors	Significant opportunities for reducing carbon losses and increasing carbon capture through peatland restoration and management. The impacts of water resource management and water quality can degrade these habitats leading to the release of carbon. We would also strongly encourage and support the implementation of options to reduce contributions towards climate change and offset emissions within WRMP24 through nature-based solutions and the restoration of habitats	Noted. Reference to be added to capture CCS opportunities associated with peatland restoration
13		Appendix D – Option Type Issues and Opportunities on Types	The issues and benefits/opportunities associated which the options described will be dependent on local circumstances and conditions, re-iterating the importance of using current site-specific information and data to support the assessment of options and draw valid conclusions.	Noted. Site specific data utilised through the MM Atlas platform, and ASiRO tool used to provide data for assessments. No change proposed
14	Proposed SEA Objectives and Assessment Questions/sub-themes	5.1 SEA Objectives	The objectives for ESW region should be compatible with the relevant regional plan and have objectives that are at least compatible with regional plans.	ESW objectives have been developed in close consultation with the other regions, and the SEA objectives are broadly consistent with those for WRE. The same assessment methodology has been followed for ESW as has been followed for WRE to ensure consistency across the region.
15		Table 5.1 – Biodiversity, Flora and Fauna – SEA Objectives	We would request the first objective “... including protecting designated sites and their qualifying features, priority species and priority habitats.” Includes and enhancing of Protected Sites, in accordance with S28 of the Wildlife and Countryside Act and Habitats Regulations. We would request the inclusion for the protection of priority habitats within the plan region In addition to the statement for meeting WFD biodiversity objectives, we would request the inclusion of 25 Year Environment Plan objectives, Protected Site and Protected Species objectives relating to biodiversity	The SEA objective sub-themes to be updated to include references to S28 of the Wildlife and Countryside Act and Habitats Regulations and for WFD, to include the 25 Year Environment Plan objectives.

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
16		Table 5.1 – Population and Human Health – SEA Objectives	For the third objective relating to access to the natural environment, we believe that responsible access needs to be specified here. As per updated the Countryside Code, published 8 February 2022.	Population and Human Health objective reference "responsible access"
17		Table 5.2 – Biodiversity, Flora and Fauna – Assessment Criteria and Questions	<p>For the 1st bullet point, we would request clarity over “affect” to include both direct and indirect impacts from an option. Impacts to be included are nutrient inputs, water resource, supply mechanism among others.</p> <p>For the 2nd bullet point, we would ask for the inclusion of opportunities to enhance and provide climate change resilience for all designated, protected and priority sites, in addition to Natura 2000 sites/features.</p> <p>For the 4th bullet point, we would request that estuarine, coastal, and marine habitats are included. It is useful to explicitly recognise the importance of freshwater flowing into these as part of water cycle and transitional coastal and marine habitat function.</p> <p>For the 5th bullet point, please include ancient hedgerows as well as ancient woodland.</p> <p>For the 7th bullet point, we would ask for reference to Natural England defining Favourable Conservation Status.</p> <p>For the 8th bullet point, please include Local Nature Recovery Strategies (LNRS) as well as Nature Recovery Network.</p>	Noted. Updates recommended here to be applied to relevant table included in the Environmental Report
18		Table 5.2 – Soil – Assessment Criteria and Questions	<p>For the 1st bullet point, we would request clarity over “affect” to include both direct and indirect impacts from an option. Impacts to be included are nutrient inputs, water resource, supply mechanism among others.</p> <p>For the 2nd bullet point, we would ask for the inclusion of opportunities to enhance and provide climate change resilience for all designated, protected and priority sites, in addition to Natura 2000 sites/features.</p> <p>For the 4th bullet point, we would request that estuarine, coastal, and marine habitats are included. It is useful to explicitly recognise the importance of freshwater flowing into these as part of water cycle and transitional coastal and marine habitat function.</p> <p>For the 5th bullet point, please include ancient hedgerows as well as ancient</p>	Noted. Updates recommended here to be applied where possible to relevant table included in the Environmental Report. At the time of writing a dataset for ancient hedgerows is not available therefore can't be incorporated into the assessment.

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			<p>woodland.</p> <p>For the 7thbullet point, we would ask for reference to Natural England defining Favourable Conservation Status.</p> <p>For the 8thbullet point, please include Local Nature Recovery Strategies (LNRS) as well as Nature Recovery Network.</p>	
19		Table 5.2 –Soil – Assessment Criteria and Questions	The definition of soil health requires local context.	The text "in the context of the local area" will be added to the sub-theme in the Soil Section: "Will the option promote soil health?"
20		Table 5.2 – Landscape and Visual Amenity – Assessment Criteria and Questions	<p>Please reflect updates to the Countryside Code and state responsible access.</p> <p>Further to the above comments, we request the inclusion of 25 Year Environment Plan objectives concerning nature recovery, soil, air, and water.</p>	Responsible access not relevant to Water assessment criteria and questions. Responsible access to be added to populations and human health element of the table as per response to comment 16
21		Table 5.2 –Water – Assessment Criteria and Questions	<p>For the 3rdbullet point, we would ask for rewording of the question to “can the option help contribute to the mitigation of flood risk and provide usable resource?”. As the current phrasing appears to be asking the same question as the 2ndbullet point.</p> <p>We welcome and support the consideration of natural flood management, such as flood capture and storage, within this question and ask that these examples remain in any revisions.</p> <p>For the 4thbullet point, the River Basin Management Plans do not currently include all protected sites, including water-dependent habitats, such as wetlands and groundwater dependent terrestrial sites, so the plan will need to adapt or capture these limitations elsewhere.</p> <p>Furthermore, the objectives around reaching and supporting a WFD ‘good’ status are unlikely to meet the requirements of Protected Sites and waterbodies/courses supporting them. WFD High Ecological Status brings a closer match between WFD and Protected Sites which should meet their own specified targets.</p>	<p>3rd bullet to be reworded to align the wording noted here.</p> <p>Protected sites are considered covered under other topics such as biodiversity and WFD objectives and</p> <p>No specific reference to "good" WFD status in the Scoping report so no update proposed. Impacts to protected sites and potential mitigation required covered under HRA and WFD further assessments.</p>
22	Overall Approach and Environmental Assessment Methodology	1.3.5 WRMP Environmental Assessment and the Regional Planning Process	<p>“ESW WRMP24 in-combination effects assessment will consider transfers which are outside the ESW area or in close proximity to the plan boundary with potential pathways affecting receptors outside the plan area.”</p> <p>We agree in-combination will include transfers but must include all other in-combination effects from other plans or projects. The use of and compatibility with WRE in-combination assessments is encouraged.</p>	ESW in-combination effects will not only consider transfers which are outside the ESW area but will also consider other relevant plans and programmes which may combine to cause effects to the SEA objectives.

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			Please note: the above statement also applies to Sections 3.1.2 and 7.2.1 regarding the use of a buffer for potential effects.	
23		6.10.1 Effects outside the Essex and Suffolk boundary	<p>“There is potential for effects outside the Essex & Suffolk area, for example, from transfer of water outside the area or from options close to the plan boundary with potential pathways affecting receptors outside the plan area. It is likely that SROs will cross boundaries. The baseline GIS database will include a buffer around the plan area so that additional receptors (such as designated sites) are captured and can be included in the assessments.”</p> <p>When determining effects outside the ESW plan regional distance-based buffer may not be adequate. More appropriate is a pathway-based buffer as described in WRE’s HRA method statements.</p> <p>Please note: the above statement also applies to Sections 3.1.2 and 7.2.1 regarding the use of a buffer for potential effects.</p>	HRA methodology has been followed for HRA ToLS and will be applied to the HRA stage 2 AA which forms the basis of the in-combination effects assessment. For HRA and WFD in-particular, in-combination effects will use a hydrological link based approach.
24		6.11.1 Influencing the development of the ESW WRMP24	<p>Any options included from previous Water Resource Managements Plans will require screening against new drivers or information that is available since the development of those historical plans. For example, but not exclusively, the 25 Year Environment Plan, updated climate impacts.</p> <p>The 2nd and 3rd bullet points do not conform with the avoid>mitigate>compensate hierarchy when considering potential options with negative effects.</p> <p>Please note there is revised DEFRA guidance for HRA’s on the process of undertaking Habitats regulations assessments (HRA) and new guidance on the general duties on competent authorities to protect, conserve and restore European sites.</p>	<p>All options proposed for WRMP25 have been assessed using the methodology presented here and in the Environmental Report using the latest data and these objectives.</p> <p>Best value planning will include environmental metrics and therefore options with the greatest potential environmental impact could be left out of the preferred option and therefore avoided. Methodology for BVP to be including in appropriate location in Environmental Report</p> <p>The HRA methodology for ToLS and AA can be found in Appendix F of the Environmental Report</p>
25		Appendix E – Assessment Scoring Criteria	The definition and transition between major, moderate, and minor effects is critical and will be different for different receptors (site, habitat, or species) depending on current state, inbuilt resilience, importance (local/regional/national) and scarcity.	Noted, however no change to proposed approach is proposed.
Comments from Historic England – 25.03.2022				
26	Baseline Information	Archaeology	Historic England recommends the collection and assessment of specific baseline information which could include identifying the potential for buried, waterlogged archaeological and paleoenvironmental remains of significant interest and fragility that can be associated with river valleys, floodplains, estuaries, coastal and wetland areas, including mires, bogs, peatland and water meadows. In particular this exercise should take account of areas of archaeological importance and the potential for unrecorded archaeology and	<p>Within the SEA assessment the impact of hydrology on the historic environment will be considered. Where appropriate, comment will be provided on these within the SEA objective narrative.</p> <p>The second aspect surrounding cores could be undertaken during the EIA stage.</p>

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			<p>seek to establish the following:</p> <ul style="list-style-type: none"> - The significance of the archaeological remains - Its condition, the burial environment and state of preservation - The likely impact of development activity (e.g. potential removal or dewatering from the proposed scheme) on that significance and state of preservation. 	<p>Guidance text: Impacts to sensitive buried landscapes should be considered, including those that have waterlogged conditions suitable for the preservation of organic remains with paleoenvironmental and geoarchaeological potential. These include lowland fens, moss lands and river deposits. These are sensitive to changes in hydrology. Opportunities to assess the geoarchaeological and paleoenvironmental potential of the landscape should be undertaken at an early stage of the process.</p>
27			Waterlogged archaeology may be nationally important if it is well preserved, rare, of exceptional significance and evidence exists for it to be understood in terms of its contemporary landscape context	
28			Where nationally important archaeology owes its significance to waterlogging and is in proximity to the scheme, changes in the water environment should be avoided that may cause harm in order to conserve its significance	
29			Although it may be appropriate for this evidence gathering and assessment to take place at the more detailed design/application stage, it is important to raise these issues and signpost how they might (further down the line) be tackled as the consideration of waterlogged archaeology may be costly to deal with and deep floodplain, estuarine and coastal deposits difficult to evaluate by standard technique	
30			The approaches required are likely to include deposit modelling and assessing the probable condition and state of preservation of any buried archaeology. As these are not techniques regularly used in all desk-based assessments, the need for them to inform the design stages of water-related proposals should be appreciated early on.	
31			The strategy/plan should identify the need for a deposit model, based on existing borehole and other information, as well as a preliminary assessment of the likely state of preservation of any buried archaeological remains, based on previous archaeological work in the locality	
32			<p>Further advice on the preservation and survival of archaeological (in particular waterlogged) remains can be found in our guidance Preserving Archaeological Remains <https://historicengland.org.uk/images-books/publications/preserving-archaeological-remains/>.</p> <p>Guidance for deposit modelling and archaeology can be found here <https://historicengland.org.uk/images-books/publications/deposit-modelling-and-archaeology/></p>	
33			Please note also that in order to take account of unrecorded and non-designated archaeology, the relevant Historic Environment Record should be referred to, and the views of local authority archaeological advisers sought.	

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
				It is not feasible to list all thousands of HER records, but definitely include text about the fact we recognise there are likely to be non-designated heritage sites. In order to include non-designated heritage assets in the SEA report the data must be obtained from HER data which is usually done at the EIA stage due to cost and complexity.
34	Key Issues and Comments Identified	Water Management and Impacts on HE	<p>While we generally support the identification of key issues set out in the report, we consider that these don't adequately reflect the specific issues pertinent to the management of water and potential impacts on the historic environment. Namely:</p> <p>The vulnerability of most heritage assets (designated and non-designated) to flooding, including occasional flooding, and the potential harm to, or loss of, significance as a result of changes to water catchment areas;</p> <p>The potential impact of water catchment and abstraction measures on heritage assets and their settings, including impacts on water-related or water dependent heritage assets;</p> <p>The potential impact of changes in groundwater flows and chemistry on preserved organic and paleoenvironmental remains: where ground water levels are lowered as a result of measures to reduce flood risk, this may result in the possible degradation of remains through de-watering, whilst increasing groundwater levels and the effects of re-wetting/ changes in salinity brought about by coastline modification could also be harmful;</p> <p>The potential impact of hydro-morphological adaptations on heritage assets: this can include the modification/removal of historic in-channel structures, such as weirs / coastal and estuarine features such as historic sea defences; as well as physical changes to rivers/the coastline with the potential to impact on archaeological and paleoenvironmental remains;</p> <p>The potential for unrecorded deeply buried and waterlogged archaeology within the 'natural' floodplain/estuarine/coastal deposit sequence;</p> <p>The potential implications of flood risk on securing a sustainable use for heritage assets, including their repair and maintenance.</p>	<p>The SEA considered impacts to flood risk as a result of the option via other objectives and sub-themes however in-combination assessment of options should consider fully the risks to heritage assets where significantly increased flood risk is also expected. Impacts across the SEA objectives will be investigated through cumulative impact assessment done as part of the SEA process.</p>
35		Historic Environment	<p>With regards opportunities, we note that these have been left blank in relation the historic environment. We would suggest the following could be added to this section:</p> <p>The opportunities for conserving and enhancing heritage assets as part of an integrated approach to flood risk management and river basin and catchment based initiatives, this includes sustaining and enhancing the local character and distinctiveness of historic townscapes and landscapes;</p> <p>The opportunity for increasing public awareness and understanding</p>	<p>Opportunities relayed here are noted however the Option Types and Opportunities table will not be replicated for the Environmental Report. These opportunities will be considered when assessing the options against Historic Environment SEA objectives.</p>

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			of appropriate responses for heritage assets in dealing with the effects of flooding as well as the design of measures for managing flood risk and improving resilience; The opportunities for improving access, understanding or enjoyment of the historic environment and heritage assets as part of the design and implementation of flood risk management measures.	
36	SEA Objectives and Assessment		While we support the proposed SEA objectives and assessment questions/sub-themes, we advise that the WRMP24 to consider each of the above points outlined in our response to question 2 to inform an appropriate and positive response to the conservation and enhancement of historic environment	Noted and responded to for comments 26 to 32.
37	Overall Approach and Environmental Assessment Methodology		We advise that the WRMP24 to consider each of the above points outlined in our response to question 2 to inform an appropriate and positive response to the conservation and enhancement of historic environment.	Repetition of comment 36. See response above
38	Conclusions		We encourage you to draw on the knowledge of local conservation officers, the county archaeologist and local heritage groups.	Noted. This suggestion can be incorporated during the consultation phase of the draft WRMP.
39			Please note that absence of a comment on an issue, opportunity, objective, assessment question, or sub-theme in this letter does not mean that Historic England is content that the issue, opportunity, objective, assessment question, or sub-theme is devoid of historic environment issues	Noted, however no change to proposed approach is proposed.
Comments from Norfolk County Council – 04.04.2022				
40	Baseline		For any flood risk assessments associated with the SEA, the baseline assessments should take into consideration higher tier mapping on flood risk (i.e. Flood Map for Planning) on all sources of flood risk. But secondly also use additional sources of information like SFRA's and other technical studies (Tier 2 mapping) like catchment and river modelling which may provide further detail on baseline conditions than national mapping does. This data would likely come from Environment Agency, IDB's or LLFA who may have undertaken studies at a local level i.e. SWMPs	At this stage of the assessment, it has not been possible to request detailed SFRA's and other technical studies due to the number of options being assessed. It is likely this level of detail will be achieved as a preferred option is defined and the projects move to EIA stage. No change is proposed
41			Where relevant the baseline information should assess seasonal groundwater levels and state of the water table. Recommend that monitoring, over a minimum of a year, is undertaken to establish the condition of these controlled waters and whether this receptor could be impacted upon from the supply options. Also relates to consideration of SuDS and must take into account a 1.2m unsaturated zone beneath any	Monitoring is not proposed for this stage of the plan as the WRMP is still in draft format. Monitoring can be put in place to fully understand baseline conditions as the plan moves to EIA stage. Monitoring proposals can be found in

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			infiltration feature. Designations like SPZ (Source Protection Zone) along with any drinking safeguarding zones should be established and any areas of high groundwater vulnerability generally.	Section 9 of the Environmental Report. No change is proposed
42			The SEA should assess any existing or potential future contamination linkages in the areas proposed for supply options or used to site options appropriately. Especially for ASR. We agree that this is scoped in under the SOIL chapter and should utilise Phase 1 or Phase 2 Ground Intrusive Site Reports.	At this stage of the assessment it has not been appropriate to utilise specific phase 1 and 2 Ground Intrusive Site Reports in the assessment methodology due to the number of options being assessed. It is recommended that this level of detail is achieved at a later stage in the development of the WRMP.
43			Section 3.3.9 misses out fluvial as a source of flooding. The latest climate change allowances were updated in July 2021 for when assessing flood risk.	Noted. Fluvial originally considered as part of "surface water flooding however text to be amended to include fluvial flooding in addition to surface water as a consideration. Climate change baseline considered using the UKCP18 July 2021 update.
44	Key Issues and Opportunities		Given the scale and range of proposals, NCC agree with the scoping report that a section on the water environment should be scoped in. Cannot stress the importance that the assessment in Table 5.2, especially related to water and flood risk is looked over the full lifetime of the various supply option proposals. The statement "To reduce or manage flood risk, taking climate change into account" is key when evaluating each of the options.	Noted, however no change to proposed approach is proposed.
45		Risks to Sites	As per Table 5.2 we agree that the sites should be looked at in terms of vulnerability. A strategic assessment should be undertaken in line with relevant NPS and NPPF, this means undertaking a Sequential Test at a fairly high level stage for your options and how you site these towards areas of lowest flood risk. The ethos of the sequential test is to steer development towards Flood Zone 1 whilst taking into account worst case scenario (i.e. no defences present). This should be over the lifetime of the development. This will mostly be in consultation with the relevant sustainable planning teams at the Environment Agency.	Sequential test for flood risk and vulnerability to be undertaken at a later stage. Flood risk zones are considered in this stage of the SEA and used as a specific standalone metric for the best value planning and therefore will be instrumental in selecting the best performing options.
46		Impacts from the Sites	SuDS- In terms of controlling water quantity and quality from options like desalination plants where new or additional hardstanding will be laid down, the LLFA will expect to see a drainage strategy in place to mitigate the additional runoff generated by the development. This is a statutory obligation under the NPPF and should recommend mitigation methods to control or reduce the potential impacts of the new impervious surfaces. This may include sustainable drainage systems and be presented in the form of a drainage strategy – SuDS should be suited to the local hydrology and hydrogeology i.e. methods that won't adversely impact any groundwater.	SuDS to be considered as options are progressed to detailed design. At future stages of the plan it is anticipated that a drainage strategy will be produced for each option. No change proposed to the Environmental Report

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			Please refer to Norfolk CC's local SuDS guidance for more information regarding SuDS.	
47			As per Table 5.2 we agree with the statement that options should seek to mitigate flood risk (<i>i.e.</i> , <i>attenuation of flows through NFM, catchment storage etc.</i>) (<i>Flooding include fluvial, marine, surface and groundwater</i>) There could be further opportunities at some sites for further flood risk benefits in terms of mitigation of areas that frequently flood. NCC suggest consultation with relevant risk management authorities whether any of options could provide additional benefits to help local communities and reduce flood risk using the proposed options <i>i.e.</i> reservoirs.	Consultation to be undertaken at a later stage on the preferred option for the plan.
48	SEA Objectives and Assessment		It would be useful to know which options are to be located in which county so we can provide more specific comments further down the line. Appreciate that only a small proportion of Norfolk would be effected by this particular WRMP.	Maps of each option are included in the information packs compiled in Appendix E.
49	Overall Comments		N/A	N/A
Comments from Environment Agency – 22.04.2022				
50	Baseline information	3.1.2 – Environmental Baseline	3.1.2 sets out buffers applied to study area to include wider river catchments or designated sites close to the boundary of the study area (table 7.1 suggests this will be 20km). Baseline from WRE is used but supplemented with local baseline data for Suffolk and Essex study area.	Noted, the baseline for the Environmental Report is to be updated with information relevant to Essex and Suffolk region.
51		3.14.10 – Future Baseline - Biodiversity, Flora and Fauna	There is limited information on future baseline; although it is difficult to predict trends, some judgement could be made on some baseline topics, e.g. population increase, water demand etc.	Limited information on the potential future baseline for biodiversity is available.
52		3.15 – Key Issues for the WRE Regional Plan	Baseline from WRE is used but supplemented with local baseline data for Suffolk and Essex study area. It would be good to focus more on the baseline for the specific study area. For example the list of designated sites/heritage assets/landscape designations for WRE area is included, but there is no indication of how many actually fall within or close to the Suffolk/Essex area. The Natural Capital section discusses stocks but there is no information on the value this provides to the area (again this is WRE wide, not study area specific). It is not clear whether a Natural Capital approach is being promoted in development of the plan. There are some conflicting statements such as water industry plans to be net zero by 2030, but key issues in 3.15 identifies that CO2 emissions may increase due to intensity of wastewater treatment.	Noted, the baseline for the Environmental Report has been updated with information relevant to Essex and Suffolk region. A Natural Capital Approach Assessment in line with relevant guidance has been applied to all options and is considered when developing the best value plan.

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
53		Chapter 4	All SEA topics scoped in (chapter 4). It is not clear from the table presented if any subtopics were scoped out of the assessment. There is little reference to Natural Capital approach in key issues/opportunities. It is not clear if there has been consideration of circular economy approaches for material assets.	Natural Capital has been scoped in as a separate assessments. Details of the Natural Capital Approach Assessment can be found in Appendix H of the Environmental Report: <i>"Material assets sub-theme amended to include reference to circular economy: Will the option minimise the use of resources and allow for incorporation of circular economy principles?"</i>
54		2.2.2	PPP carried out, summary in main body of report, with detailed Appendix (but the appendix does not show relevance to the plan in question). Summary of key considerations from the review has been included. Reference is made in 2.2.2 that this will inform the key issues and SEA framework. Majority of these are reflected in the SEA objectives.	All the policies, plans and programmes reviewed are considered relevant to the WRMP in question. Noted, however no change to proposed approach is proposed.
55		6.1.1	A short section (section 6.1.1) sets out how the different assessments will influence plan development, mainly by flagging major/moderate impacts and mitigation required or alternative options to be considered, but limited information is included. Further detail should be provided.	Noted. More detail is now included on this in Section 4 of Environmental Report, notably in Section 4.6. Further detail on how environmental assessments influence the development of the WRMP can be found in Section 4.7.
56		SEA Assessment Methodology	Methodology is included, including list of objectives (and comparison to WRE objectives), sub objectives and prompt questions. More detailed information is included in the appendix for scale of effect in each topic. Limited information is included on the cumulative effects assessment. This section also sets out the approach to other assessments, building on the work at the regional planning level. It notes that options that don't require land use change are scoped out of the NCA and BNG assessments, it is unclear why this is. The methodology has a heavy reliance on the regional planning assessments, with the intention to update as required. While we appreciate and accept the efficiencies this allows, the next stages of the SEA should further refine this for the study area, ensuring a focus on specific issues for Essex/Suffolk.	Methodology for the cumulative effects assessment to be detailed in Section 7.1 of the Environmental Report. The methodology for NCA and BNG Assessments can be found in Appendix H and they detail reasons for scoping out. If options don't require land use change, there is no change anticipated to the habitats intersecting with the option.

B.2 Draft Environmental Report Consultation Log

Table B.3: Draft EIA Consultation Log

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
Comments from Royal Society for the Protection of Birds (RSPB) – 29.03.2023				
1	SEA objectives and assessment, and overall comment		Q1 - Projections of future water needs are based largely on PWS and agricultural requirements. Environmental needs have not been adequately covered despite being essential as they underpin a healthy food sector, wellbeing and the range of ecosystem benefits that society depends upon. It is disappointing that more work on environmental water requirements has not been completed. We would also like to state that the highly technical and acronym-rich style of presentation makes it extremely challenging to decipher the plan and intent. Graphical representations are clear and describe the challenge for future AMP cycles. Only by inference to WRE and neighbouring water company plans is the combined approach for the wider area explained. More detail should be provided to show how each zone is linked. It is disconcerting to see raw water is being taken from the Bure valley to support Ormesby given the current, ongoing RSA process has now widened to cover all SAC designated areas in the Broads.	Dependent on client. Possible review of SEA/HRA and other assessments to consider the RSA work being done by the EA. This review opened for consultation on 10th March 2023 and therefore information was not available when dWRMP was being processed. This would require a re-do of optioneering. If the RSA has not been considered by the modelling, the SEA approach should remain consistent. Decision to be made by client as to whether options which might be impacted by this RSA should be re-assessed. Habitat regulations reductions plan being proposed by the client for inclusion as an alternative plan. This will need cumulative effects assessments for all disciplines. JR on how EA is dealing with abstraction in the Ants Broads and Marshes which means that the EA need to look at all Abstractions. No abstractions from the Bure Valley are being proposed as part of the WRMP.
2			Q8 - We support the adaptive pathway approach, subject to rigorous assessment of potential environmental impacts, including through Habitats Regulations Assessment where necessary. These assessments should be used to refine and develop options which minimise impacts on the environment and maximise opportunities to provide environmental enhancements.	No change proposed.
3	Environmental assessment and mitigation	HRA assessment and Section 8 – Mitigation measures and enhancement opportunities	Environmental Assessments - Section 9.2 - We are happy to continue to provide our thoughts on impacts and actions needed to mitigate impacts. We have identified several deficiencies in the evidence base and HRA with some issues which may be challenging to mitigate. We urgently encourage discussions with NE on this issue.	ESW to provide guidance on whether mitigation consultation is needed prior to the submission of the rdWRMP.
4	Key issues and opportunities	Section 8 – Mitigation measures and enhancement	Biodiversity Net Gain - Section 9.2.5 - We are disappointed that the ambition around Biodiversity Net Gain is limited to a 10% 'do-minimum' target and consider that if natural processes were put at	NWL to include commitment to 15% BNG - to be confirmed by the client. MM can provide costs for development of a BNG

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
		opportunities, and Section 9 - Monitoring	the heart of the plan a net gain greater than 10% could be achieved. Whilst we acknowledge that the 10% target derives from the legislative requirement, we would expect water companies to aim to achieve a much greater gain for biodiversity.	<p>strategy if this is something ESW would like to consider.</p> <p>Important to note that the Environment Act 2021 requires all new developments to deliver a minimum of 10% BNG, and therefore, all new options delivered as part of the WRMP24 will be required to demonstrate at least 10% BNG, subject to the requirements of individual local planning authorities that may exceed the minimum 10% BNG. Some of the mechanisms for delivering BNG, such as the purchase of biodiversity credits, as well as the individual requirements set by various local planning authorities (LPAs) are still being developed. Furthermore, many of the WRMP24 options are at the concept stage of design and are not supported by survey data, and therefore it is not possible to develop detailed mitigation and enhancement proposals for delivering 10% BNG (or more than 10%) at this stage.</p>
5	Key issues and opportunities	Section 8 – Mitigation measures and enhancement opportunities, and Section 9 - Monitoring	Mitigation and enhancements - Section 8.1 - The scope of mitigation for biodiversity in the table appears limited to basic construction control measures at this stage and a requirement for further assessment to inform mitigation in future. As a high-level overview, this is not sufficient to give confidence that impacts on biodiversity can be adequately mitigated. Project design along with mitigation and enhancement plans should be developed together to ensure biodiversity is properly protected and that ambitious biodiversity net gain can be achieved.	<p>NWL to include commitment to 15% BNG - to be confirmed by the client. MM can provide costs for development of a BNG strategy if this is something ESW would like to consider.</p> <p>Further comment (row 22) considers mitigation for HRA.</p> <p>Regarding mitigation and enhancement to achieve 10% BNG, many of the WRMP24 options are at the concept stage of design and are not supported by survey data, and therefore it is not possible to develop detailed mitigation and enhancement proposals for delivering 10% BNG at this stage. The BNG assessments undertaken for each option have been used to inform the WRMP24 Best Value Plan, and thus have contributed to the overall reduction in</p>

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
				potential impact on biodiversity units. Essex & Suffolk can look to identify BNG opportunity areas associated with each option and develop BNG mitigation and enhancement opportunities that link those opportunities with local strategic priorities.
6	Key issues and comments identified	Section 2 – Description and Context of Essex & Suffolk Water’s WRMP24, and Section 5 – Assessment of Emerging WRMP24	Options Description - Section 2 - The description of each option set out in Table 2.1 is entirely inadequate to allow any assessment of the accuracy or robustness of the information provided for HRA. At this stage, we would expect to see detailed descriptions and maps to allow readers to understand the locations and designs proposed and the construction and operational processes for each option. Without these, it is not possible to comment fully on whether all necessary sites have been screened in, whether all potential impact pathways have been identified or the significance of any impacts. (We note that Appendix A should contain location maps, but these have not been provided in the consultation copy). We therefore cannot agree that the HRA is adequate or the WRMP itself is sound at this stage. We recommend therefore that the HRA requires revision and further consultation.	Maps with relevant constraints on have been provided as part of the dWRMP. Locations of water resource options are confidential for security reasons - it has been assumed that directional drilling will be undertaken where water courses are crossed.
7			Transfer from Bungay Wells to Broome WTW Section 7 - Without additional schematics showing the pipeline route further comment isn’t possible. In combination with the Lowestoft to Ellingham Mill transfer there will be an additional number of locations where a river will be crossed, which may interrupt flow of water and sediment.	Maps with relevant constraints on have been provided as part of the dWRMP. Locations of water resource options are confidential for security reasons - it has been assumed that directional drilling will be undertaken where water courses are crossed.
8			Lowestoft Water Reuse to Ellingham Mill - Section 9 - Without additional schematics showing the pipeline route further comment isn’t possible. In combination with the Bungay Wells to Broome WTW transfer there will be an additional number of locations where a river will be crossed, which may interrupt flow of water and sediment.	Maps with relevant constraints on have been provided as part of the dWRMP. Locations of water resource options are confidential for security reasons - it has been assumed that directional drilling will be undertaken where water courses are crossed.
9			Effluent Reuse at Caister and Transfer to Ormesby - Section 10 - We are pleased to see consideration of water reuse following treatment and proximity of Ormesby to Caister and lack of river crossing should have minimal impact. We are concerned with the need to transfer raw water from Belaugh in the Bure valley and	RSA in question was out for consultation between March and April 2023 and therefore was not available when options were assessed in 2022. Decision to be made by client as to whether options which

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			outside of the E and SW catchment. This seems at odds with the recent RSA review carried out by EA.	might be impacted by this RSA should be re-assessed. Potential major impact on time and programme. Habitat regulations reductions plan being proposed by the client for inclusion as an alternative plan. This will need cumulative effects assessments for all disciplines.
10	Overall approach and environmental assessment methodology	Section 7 – Cumulative Effects	In-combination Effects - Section 13 - The evidence base for a robust in-combination assessment is currently limited due to the concerns raised above about the information available for each option and this does not provide any confidence that the full impact of proposed options put forward in the WRMP has been assessed. It is also acknowledged that further work is required to assess impacts in-combination with other plans and projects. We draw attention in particular to the need for a robust assessment of impacts in-combination with major energy developments proposed in the area. Due to its long construction period and broad range of effects, in-combination impacts with Sizewell C will need detailed consideration.	Locations of water resource options are confidential for security reasons - it has been assumed that directional drilling will be undertaken where water courses are crossed. Sizewell C was included in cumulative effects assessments for all disciplines. For a number of disciplines, it was unlikely to lead to in-combination effects, but further investigation is needed, details of which can be added to the reporting if outlined by the client.
Comments from Water Resources East – 05.04.2023				
11	Key issues and opportunities		Show that the environmental improvements promised by the plan are real and significant, have been prioritised to achieve early benefits for sensitive waterbodies (including but not limited to chalk streams), and with the potential for abstraction reductions to be complemented by nature-based approaches and river restorative action once more detailed investigations and optioneering are undertaken.	Improvements resulting from the plan are considered as part of the SEA and are reported separately. Nature-based approaches form a key part of the proposed mitigation for HRA/BNG/NCA assessments. More detail to be included on recommended next steps.
Comments from East Suffolk Council – 30.03.2023				
12			Q7 - The Environment Act 2021 requires responsible authorities to prepare local nature recovery strategies, the purpose of which is to identify priorities for the recovery and enhancement of biodiversity. The Environment Agency's Water Resources Planning Guidance states at section 2.3 that consideration should be given to the priorities set out in local nature recovery strategies in the preparation of WRMPs. There isn't yet a local nature recovery strategy covering East Suffolk however, it is recommended that early and ongoing engagement takes places between East Suffolk Council, Essex and Suffolk Water, and other relevant authorities engaged in the preparation of the relevant local nature recovery	Policies, plans and programmes review is to be updated to include the Environment Act 2021. Engagement with East Suffolk Council to be recommended to ESW. Additionally, when developing more detailed proposals for delivering 10% BNG (or greater), Essex & Suffolk can look to identify BNG opportunity areas associated with each option and develop BNG mitigation and enhancement opportunities that link those opportunities with local strategic

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			strategy to ensure that opportunities to support the recovery and enhancement of biodiversity are considered and taken in the preparation of the WRMP24 and the detailed development of any supply side options. Given the quantity and scale of water treatment / network related infrastructure on the coast and estuaries, consideration should be given to the potential impacts of climate change accelerating rates of erosion plus frequency and severity of flooding events. Collaboration with Coastal Protection Authorities conducting modelling of these impacts would be beneficial.	priorities. Engagement with both local authorities and other local stakeholders can be undertaken to ensure alignment. However, this would be a change to scope, and if required prior to submission of rdWRMP is likely to incur cost and programme changes.
Comments from Suffolk Wildlife Trust – 03.04.2023				
13			The WRMP should recognise the importance of County Wildlife Sites – especially those that comprise riverine and wetland habitats – both as receptors for environmental impacts of the different options identified in the WRMP and as important steppingstones in the wider ecological networks and building blocks of a future Nature Recovery Network.	Country Wildlife sites are non-statutory and were not raised as a comment during the consultation phase of the Scoping Report where constraints and baseline environmental conditions were determined for the IEA. Considering these would require re-assessments of all options for SEA and would incur cost and programme changes.
14	Key issues and opportunities		The WRMP should adopt the ambition to achieve a 20% net gain in biodiversity for all new water supply and treatment infrastructure and for BNG to contribute to strategic nature recovery including species and habitat conservation priorities. This would help to ensure biodiversity net gain results in significant and meaningful ecological improvement and biodiversity uplift.	We recommend that E&S provide a response regarding the aspirational target of achieving 20% BNG, at present the WRMP follows the mandatory approach of at least 10% BNG. Report to be updated to include explicit reference to contribution of BNG to strategic nature recovery and priorities in the region. NWL to include commitment to 15% BNG - to be confirmed by the client. MM can provide costs for development of a BNG strategy if this is something ESW would like to consider.
15	SEA objectives and assessment	HRA's	We support the comments made by the RSPB in their response to this consultation on the need for better evidence to inform our understanding of water requirements and pressures on different environmental receptors, and how these are likely to be affected by the different options proposed in the WRMP. In addition to the issues identified by the RSPB in their response, we wish to highlight some further specific examples of sensitive environmental receptors and interactions with the proposals and options in the	HRAs to be reviewed and updated in line with information provided. Specifically, those which contain impacts to designated sites in the Fens and estuarine saltmarsh habitats.

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			<p>WRMP that need further consideration: Fen habitats - The condition of many of Suffolk’s fen wetlands has been suffering because of a combination of lack of water leading to drying out of these habitats together with nutrient enrichment of the riverine element of the water feeding these wetlands. Increasing flows in rivers feeding fen habitats without addressing the level of nutrients in these waterbodies has the potential to exacerbate the deterioration in the condition of these sensitive ecosystems. The complex interactions between groundwater and surface water (riverine) sources feeding fenlands must be carefully considered to understand the likely ecological effects of any options that would alter the balance between ground and surface water inputs to these habitats, which include European and National designated sites, such as the Waveney and Little Ouse Valley Fens Special Area of Conservation (SAC). Intertidal saltmarsh - Saltmarsh is sensitive to nutrient loads in the water that periodically inundates these important intertidal habitats. Nitrogen-enriched conditions have been found to negatively affect below ground plant growth, which is critical for the physical stability of saltmarsh habitats. Like the fenland example above, the interactions between riverine and (in this case) seawater sources and nutrient enrichment effects on saltmarsh condition and stability are complex, but any increase in nutrient-enriched riverine water reaching sensitive saltmarsh habitats in Suffolk’s Internationally Important estuaries has the potential to do significant damage to these already fragile systems, affecting not only biodiversity but carbon sequestration and storage. Additional effort is needed to assess and mitigate any potential adverse effects from the implementation of the WMRP on estuarine saltmarsh habitats.</p>	
16	Key issues and opportunities		<p>Biodiversity Net Gain - We note that initial assessments of the unmitigated BNG Metric outputs for the Best Value Plan (BVP) suggests a significant loss of biodiversity for all but one of the Plan’s supply side options and for all the options combined. Only the North Suffolk Reservoir option is predicted to result in a net gain. Due to differences in the timing of delivery, locations, and habitats affected by the different options, it may not be appropriate for the biodiversity gains resulting from the North Suffolk Reservoir option to be used to offset biodiversity losses resulting from other options, and we suggest that BNG should be achieved for each option at a project level. We do however support strategic approaches to delivering BNG that could contribute to landscape scale nature habitat creation and/or enhancement for priority species and habitats as part of the Local Nature Recovery Strategy</p>	<p>The options for the BVP BNG assessment have been assessed in accordance with the BNG guidance around master planning, considering the WRMP as a whole and the resulting likely cumulative impacts should the WRMP options be delivered together. We agree that ultimately options are likely to be delivered separately and may be subject to varying requirements by the local planning authority, in addition to the mandatory trading rules set out by the BNG metric. We also agree that a strategic approach is required to both consider the overall impact and how the individual</p>

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			and would welcome discussion with Essex & Suffolk Water and other stakeholders about how this could best be achieved for the options implemented through the WRMP. We support a more aspirational target for achieving BNG of 20%, which we believe should be achievable at both a project level and across the programme of options implemented through the WRMP. NBS provide a significant opportunity to realise this more ambitious level of BNG and support many of the other environmental objectives of the Plan, while at the same time improving the resilience of regional water resources and even potentially providing alternative supply-side options that could be less costly to the environment and consumers than some of those currently proposed in the draft WRMP.	<p>options will contribute to a wider strategy for delivering gains in biodiversity across the WRMP operational area. Text to be incorporated into the report around the timing of delivery of each option and explanation that these will need to be further developed later in the planning stage to accommodate for the phase-by-phase process that the construction of the options is likely to follow, as well as a reference to NBS. We recommend that E&S provide a response regarding the aspirational target of achieving 20% BNG, at present the WRMP follows the mandatory approach of at least 10% BNG.</p> <p>NWL to include commitment to 15% BNG - to be confirmed by the client. MM can provide costs for development of a BNG strategy if this is something ESW would like to consider.</p>
Comments from Natural England – 03.05.2023				
17			Decisions, as opposed to physical options, in the plan haven't had an environmental assessment. Environmental assessments must be for the plan as a whole, and so decisions and risks should not be excluded from assessment (see Annex 2) b. Key decisions with potential environmental impacts are around demand management and option delivery risks c. There is no clear description within the plan of what, if any, water will be returned to the environment or whether there will be any increased abstraction, even within current licenced volumes and hence we cannot reach a view on the plan without greater clarity on this issue	ESW to provide environmental destination figures for potential return of water to the environment, along with accompanying text about the benefits of such actions.
18	Overall comment		Desalination 1. There are no long-term scenarios that don't ultimately require desalination and it appears the fastest deployable new supply mechanism a. We recognise and welcome that ESW have an adaptive planning program. However, "adaptive" should mean that action can be taken promptly in response to changes in circumstance, notably demand management and delays to option delivery. This means pathways and options in an adaptive plan must be developed in parallel with the preferred plan. A clearer commitment to this development in the plan would be helpful to	It should be noted that the Best Value Plan Alternative 1 (Adaptive Pathway 1) does not include a desalination option. All assessments flag the risk and need for mitigation regarding desalination options. Additional enhancement to text to draw out the tie in with HRA and the protected areas impacts. Also add more detail to the next steps section to be clear what is needed to

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			increase confidence around the unavoidable uncertainty. 2. We recognise the concerns around desalination with regard to energy consumption, and hence carbon, and the environmental implications from brine discharge. We also recognise that the levels of reduction in demand that would be needed to eliminate the need for this as a supply option are significantly greater than existing policy of 110l/h/d and so agree desalination is likely to have to be part of the supply mix. a. We believe that with good planning and design the carbon and discharge impacts of desalination should be possible to reduce and mitigate adequately. b. We would be interested to see what level of demand management would be necessary to eliminate the need for desalination and risks outlined above. c. This may become relevant for project stage HRA for desalination if adverse effects can't be sufficiently ruled out	reduce uncertainty and investigate mitigation. Demand Management scenarios are included in the supply-demand balance.
19	Key issues and comments identified	HRA'S	Habitats Regulations Assessment (HRA) Water Companies have a statutory duty to prepare Water Resource Management Plans (WRMPs) and are the Competent Authority for Habitats Regulations Assessment (HRA) of the draft WRMP. Natural England has reviewed the HRA submitted with this dWRMP and wishes to provide the following advice: 1. We recognise and support the approach in the HRA for options for delivery in subsequent WRMPs of being clear where a conclusion that no Adverse Effect On Integrity (AEOI) can be reached due to current lack of scheme detail and investigation as this is in accordance with our advice. We however wish to make it clear that: a. This conclusion is not final and does not at this stage preclude the option being developed further. Final decision on Habitats Regulations conclusions will depend on timely, satisfactory scheme investigation and assessment b. The work needed to inform the options is vital and must continue at pace. c. A clear plan and timeline on the steps to be taken to gain the necessary information and design and mitigation detail should be included in the plan. Without this the credibility of delivery of future options on time is weakened. 2. Options for delivery this AMP must have Habitats Regulations Assessment completed and conclude no-AEOI for the final plan. a. These options are TRA-001 and TRA-019 b. Note Broadland SPA includes breeding and overwinter bird populations so the mitigation to avoid disturbance to wintering populations isn't alone sufficient to address impacts on breeding birds	1. a - No response needed 1. b - No response needed 1. c - HRA report to include timescale for further work and information gathering regarding design and mitigation needed to finalise a HRA . 2. a - AMP 8 options to be reviewed and further mitigation recommended if needed. 2. b - further mitigation to be added to options where Broadland SPA is likely impacted to deal with potential impacts to breeding birds.
20	Overall approach and environmental		Strategic Environmental Assessment (SEA) WRMPs are prepared for water management and set the framework for future development consents of projects listed in Annex II of the EIA	1. EFR007 is not included in the BVP nor in the adaptive pathways.

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
	assessment methodology		Directive, including groundwater abstractions and impoundments. As such, WRMPs meet the requirements set out in the SEA Regulations requiring SEA to be completed. Natural England's advice on the documents submitted as part of the SEA for this dWRMP are as follows: 1. ESW-EFR-007 doesn't appear to have an SEA assessment but is in the preferred plan. Whilst we recognise this is for delivery in 2040 its inclusion in the plan means it must have an assessment on information currently available. A plan and timescale to conclude this early enough to satisfactorily resolve any issues would give sufficient levels of confidence. Page 6 of 15 2. ESW-EFR-002B retains impacts on SSSIs which will need to be resolved ideally at final plan stage, or as a minimum final plan will include a clear commitment to resolving outstanding impacts prior to. It is unclear why this option which includes greater impacts is taken forward rather than EWS-EFR-002 which appears to have lower environmental impact 3. ESW-RES-002 a full assessment of the impacts of the additional abstraction needed to supply this reservoir is needed and should be investigated within this plan particularly as this option forms part of the adaptive plan and has potential for accelerated delivery 4. Mitigation in SEA will need to be fully delivered with any project and location specific actions in addition to standard best practice currently in SEA and HRA and agreed with regulators at project stage to avoid impacts on SSSIs.	<p>2. The Best Value Planning methodology considered environmental metrics as part of selecting the best value plan and therefore, when balancing the need to meet demand for water in the region, cost and environmental impact, EFR002B performs better as part of the plan.</p> <p>3. Additionally abstraction is assessed as part of the plan and assessed in combination with other options (including RES-002). No increase in abstraction is proposed other than the options also assessed and included in the plans. (CS to check with CL/LC)</p> <p>4. Noted comment re. mitigation. No response required. Firmer commitment to be made on mitigation as per above</p>
Comments from Environment Agency – 29.03.2023				
21	Overall comment		<p>The SEA Environmental Report lacks clarity with the result that there are several potential issues regarding its effectiveness and compliance with the SEA Regulations.</p> <p>Overall, the Environmental Report contains a large volume of material, but is a difficult read.</p>	<p>Review the IEA in line with this comment and the required information. Improve the clarity of wording to make it easier to understand. Use acronyms sparingly and include more detail about the WRMP and WRE approach to help give context.</p>
22	Overall comments, and overall approach and environmental assessment methodology		<p>The SEA Environmental Report lacks clarity with the result that there are several potential issues regarding its effectiveness and compliance with the SEA Regulations.</p> <p>It is unclear as to the objectives and content of the WRMP and how the assessment results have influenced its development. The scope of the SEA is poorly defined in terms of the study area and its technical and temporal scope, and although comprehensive in</p>	<p>Add clarity to the IEA Objectives being considered. Sign post the objectives where necessary. Review and refine the definition of scope of the SEA in terms of Study Area as well as technical and temporal scope. Review and update the Plan, Policy and Programme review and map them against the SEA objectives more definitively. We</p>

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			nature, the SEA objectives are not well mapped to the baseline and plan, policy, and programme (PPP) reviews.	can also add that the align with other connected Water company objectives and the regional plan objectives
23	Overall approach and environmental assessment methodology		<p>The SEA Environmental Report lacks clarity with the result that there are several potential issues regarding its effectiveness and compliance with the SEA Regulations.</p> <p>The methodology employed is focused on a narrow range of metrics which means that effects are not clearly categorised into permanent and temporary duration or whether direct or indirect. It is unclear how significance has been determined.</p>	Add clarity to the methodology section - permanent and temporary effects considered to be looked at through assessment of construction and operational phase impacts. Direct and indirect impacts are also considered as part of the SEA. Specific reference to be made regarding this in the methodology section.
24	Key issues and comments identified		<p>The SEA Environmental Report lacks clarity with the result that there are several potential issues regarding its effectiveness and compliance with the SEA Regulations.</p> <p>A range of options has been assessed and a number likely to give rise to significant environmental effects, including engaging issues of WFD or HRA compliance, have nonetheless been carried forward into the draft WRMP without clear justification or sufficient evidence as to the feasibility of mitigation.</p>	Add detail to the High-Level Screening process and the methodology section which shows how SEA metrics (which are backed by the discipline specific reports) are fed into the Best Value Planning approach. Also more detailed consideration should be given to mitigation measures, including a more concrete commitment to deal with issues should they arise in future by ESW
25	Key issues and comments identified	Section 6 – Assessment of alternative programmes and WRMP24 decision making	<p>The SEA Environmental Report lacks clarity with the result that there are several potential issues regarding its effectiveness and compliance with the SEA Regulations.</p> <p>No assessment of a least cost or best environment and society plan has been provided as part of the SEA.</p>	Best Environmental and Society Plan is the BVP as SEA metrics have been used to inform the development of the BVP. This fact can be referenced more specifically in the text and methodology sections when discussing the process for producing the BVP. Text to be aligned with the WRMP Reporting on the subject.
26	Overall approach and environmental assessment methodology	Section 7 – Cumulative Effects	The SEA Environmental Report lacks clarity with the result that there are several potential issues regarding its effectiveness and compliance with the SEA Regulations.	Add clarity to the methodology section of the cumulative assessment, utilising the other WRMP reports where suitable. Additionally, cumulative assessment to be updated to reflect WRE wide considerations. Potential

Comment number	Relevant topic	Relevant sub-section	Comment	MM response
			The cumulative effects assessment is particularly confusing and does not clearly take account of the interface with the regional plan and other water company plans and programmes.	to be major is full re-write of cumulative effects assessment is needed
27	Key issues and comments identified	Section 9 - Monitoring	<p>The SEA Environmental Report lacks clarity with the result that there are several potential issues regarding its effectiveness and compliance with the SEA Regulations.</p> <p>Monitoring proposals are limited and omit any clear indication of trigger points should unforeseen adverse consequences arise.</p>	Monitoring proposals to be refined and indicate consideration of future trigger points for re-assessment should additional impacts be realised at future plan/project stages
28	Overall comment	Executive Summary	<p>The SEA Environmental Report lacks clarity with the result that there are several potential issues regarding its effectiveness and compliance with the SEA Regulations.</p> <p>The Non-Technical Summary is short and lacks detail, mirroring weaknesses within the main Environmental Report.</p>	Review and update NTS in line with comment. Add additional detail mirroring the above updates.

C. Policies, Plans and Programmes Review

Table C.4: Policies, Plans and Programmes Review

Policy, Plan or Programme	Topic	Key objectives, guidance and references
International		
World Health Organisation (WHO) Global Air Quality Guidelines (2021)	Air	These guidelines take into account the latest body of evidence on the health impacts of different air pollutants and are set out to inform evidence-based legislation and policies to improve air quality and reduce the health impacts associated with air pollution.
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1973)	Biodiversity	The Convention on International Trade in Endangered Species (CITES) is a multilateral treaty designed to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species in the wild, and it accords varying degrees of protection to more than 33,000 species of animals and plants.
Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)	Biodiversity, flora and fauna	The aims are to conserve wild flora and fauna and their natural habitats and to promote European cooperation. Particular importance is placed on the need to protect endangered natural habitats and endangered vulnerable species, including migratory species.
Bonn Convention on the Conservation of Migratory Species of Wild Animals (1983)	Biodiversity, flora and fauna	The Convention aims to conserve terrestrial, aquatic and avian migratory species throughout their range.
Convention on Biological Diversity (1992)	Biodiversity, flora and fauna	The Biodiversity Convention has three main aims which are to conserve biological diversity; to ensure the sustainable use of the components of biological diversity; and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
Ramsar Convention - The Convention on Wetlands of International Importance (1971)	Biodiversity, flora and fauna	Provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The aim is 'the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world'. The Convention uses a broad definition of the types of wetlands covered, including lakes and rivers, swamps and marshes, wet grasslands and peatlands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human-made sites such as fishponds, rice paddies, reservoirs, and salt pans.
UN Framework Convention on Climate Change (1992)	Climatic Factors	The stated objective is to achieve stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.
Kyoto Protocol to the UN Framework Convention on Climate Change (1997)	Climatic Factors	The Kyoto Protocol was adopted in 1997 and ratified in 2005. It commits its parties to limit climate change by setting internationally binding targets for emission reductions. Covering the six main GHGs, it required the UK to reduce emissions by 12.5% in the first commitment period (2008-2012). This was successfully achieved, and a second commitment period has been agreed whereby European Union (EU) countries will aim to achieve a joint 20% reduction compared to 1990 levels.
Doha Agreement (2012)	Climatic Factors	The Doha Amendment was adopted at the eighth session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP 8), in Doha, Qatar, in 2012. The Amendment sets a goal of reducing greenhouse gas (GHG) emissions by 18% compared to 1990 levels for participating countries. This, according to the UNFCCC, "represents an increase from an average reduction of 5% compared to 1990 levels" during the Kyoto Protocol's first commitment period from 2008-2012.
Paris Agreement (2015)	Climatic Factors	The Paris Agreement came out of the COP21 and aims to limit global temperature rises to 1.5°C to 2°C above pre-industrial levels. It brings together 196 parties from across the world into a common cause and requires all parties to put forward nationally determined contributions to strengthen efforts in the years ahead. It also aims to strengthen the ability of countries to deal with the impacts of climate change.
Charter for the Protection and Management of Archaeological Heritage (1990)	Historic Environment	The charter lays down principles relating to the different aspects of archaeological heritage management. These include the responsibilities of public authorities and legislators, principles relating to the professional performance of the processes of inventurisation, survey, excavation, documentation, research, maintenance, conservation, preservation, reconstruction, information, presentation, public access and use of the heritage, and the qualification of professionals involved in the protection of the archaeological heritage. The Charter states that policies for the protection of archaeological heritage should constitute an integral component of policies relating to land use, development, and planning as well as of cultural, environmental and educational policies.
Convention for the Protection of the Architectural Heritage of Europe (2009)	Historic Environment	The aim of this Convention is to protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study. Sources are considered to be elements of the archaeological heritage all remains and objects and any other traces of mankind from past epochs, the preservation and study of which help to retrace the history of mankind and its relationship with the natural environment, for which excavations or discoveries and other methods of research into mankind and the related environment are the main sources of information, and which are located in any area within the jurisdiction of the Parties. The archaeological heritage shall include structures, constructions, groups of buildings, developed sites, moveable objects, monuments of other kinds as well as their context, whether situated on land or under water.
Convention on the Protection of Underwater Cultural Heritage (2001)	Historic Environment	The convention is intended to protect all traces of human existence having a cultural, historical or archaeological character which have been under water for over 100 years. This extends to the protection of shipwrecks, sunken cities, prehistoric artwork, treasures that may be looted, sacrificial and burial sites, and old ports that cover the oceans' floors.
Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)	Historic Environment	An Intergovernmental Committee for the Protection of – the Cultural and Natural Heritage of Outstanding Universal Value, called "the World Heritage Committee", established within the United Nations Educational, Scientific and Cultural Organization. Composed of 15 States Parties to the Convention, elected by States Parties to the Convention meeting in general assembly during the ordinary session of the General Conference of the United Nations Educational, Scientific and Cultural Organization.

Policy, Plan or Programme	Topic	Key objectives, guidance and references
Commitments arising from the World Summit on Sustainable Development, Johannesburg (2002)	Population and Human Health	Adopted at the World Summit on Sustainable Development in 2002 and built upon earlier declarations made at previous conferences and summits. It commits nations to take a collective responsibility to build a human, equitable and caring global society cognisant of the need for human dignity for all. The Declaration also reinforces the three pillars of sustainable development: environmental, economic and social development at the local, national, regional and global level.
Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) (1998)	Population and Human Health	The Aarhus Convention was created to give empowerment to citizens and civil society organisations in relation to environmental matters and is founded on the principles of participative democracy. It provides for access to environmental information; public participation in environmental decision making; and access to justice.
Children's Environment and Health Action Plan for Europe (2004)	Population and Human Health	The aim of the Children's Environment and Health Action Plan for Europe (CEHAPE) programme developed by the World Health Organisation is to develop and implement national plans and policies to address local priorities to reduce the burden of disease among children caused by environmental risk factors.
European¹		
Ambient Air Quality Directive (2008/50/EC)	Air	It establishes ambitious, cost-effective targets for improving human health and environmental quality up to 2020. The EU objective on air quality is 'to achieve levels of air quality that do not result in unacceptable impacts on, and risks to, human health and the environment'.
Thematic Strategy on Air Pollution (2005)	Air	The Strategy recognises the impact of air pollution on human health and the environment. It establishes interim objectives for air pollution in the EU and proposes appropriate measures for achieving them.
Establishing measures for the recovery of the stock of European eel 2007 (1100/2007)	Biodiversity, flora and fauna	Advice from the International Council for the Exploration of the Sea (ICES) in 2006 indicated that the stock of the European eel (<i>Anguilla anguilla</i>) is outside safe biological limits across European waters. The population has declined significantly, reducing to 5% of the original 1980s stock levels. In response to this advice, the European Union adopted Council Regulation (EC) No 1100/2007, which requires Member States to undertake a series of measures aimed at the recovery of eel stock. The goal is to achieve 40% escapement of adult eels, relative to that in absence of anthropogenic factors, to sea to spawn. The EU Regulation was transposed into UK law under The Eels (England and Wales) Regulations 2009. Eleven Eel Management Plans have been prepared, one for each River Basin identified in England and Wales. The plans outline the current situation and how we intend to achieve the targets required by the European Regulation. Such measures include a reduction in fishing pressure, improving access and habitat quality, and reducing the impacts of entrainment. The measures that will require the installation of passes at obstructions and screens at abstraction and discharge points that prevent the migration of eels.
Our life insurance, our natural capital: an EU biodiversity strategy to 2020 (2011)	Biodiversity, flora and fauna	Strategy to halt the loss of biodiversity and ecosystem services in the EU by 2020. There are six main targets and 20 actions to help Europe reach its goal. The six targets cover: <ul style="list-style-type: none"> • Full implementation of EU nature legislation to protect biodiversity • Better protection for ecosystems, and more use of green infrastructure • More sustainable agriculture and forestry • Better management of fish stocks • Tighter controls on invasive alien species • A bigger EU contribution to averting global biodiversity loss <p>The strategy is in line with two commitments made by EU leaders in March 2010. The first is the 2020 headline target: 'Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss'; the second is the 2050 vision: 'By 2050, European Union biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided'.</p>
Fresh Water Fish Directive (2006/44/EC)	Biodiversity, flora and fauna	The Directive concerns the quality of fresh waters and shall apply to those waters designated by the Member States as needing protection or improvement in order to support fish life. This directive shall not apply to waters in natural or artificial fishponds used for intensive fish-farming.
Directive on the Conservation of Wild Birds (79/409/EEC) (as amended)	Biodiversity, flora and fauna	Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (this is the codified version of Directive 79/409/EEC as amended). This Directive ensures far-reaching protection for all of Europe's wild birds, identifying 194 species and sub-species among them as particularly threatened and in need of special conservation measures. There are a number of components to this scheme: Member States are required to designate SPAs for 194 particularly threatened species and all migratory bird species. SPAs are scientifically identified areas critical for the survival of the targeted species, such as wetlands. They are part of the Natura 2000 ecological network set up under the Habitats Directive 92/43/EEC.

¹ It is acknowledged that the UK has left the European Union. However, European law and policy has formed the basis for UK environmental laws and contributed to the direction of UK policy in these areas for many years. As such, they are considered to remain a useful contextual frame as part of the policies, plans and programmes review.

Policy, Plan or Programme	Topic	Key objectives, guidance and references
		<p>A second component bans activities that directly threaten birds, such as the deliberate killing or capture of birds, the destruction of their nests and taking of their eggs, and associated activities such as trading in live or dead birds (with a few exceptions).</p> <p>A third component establishes rules that limit the number of bird species that can be hunted (82 species and subspecies) and the periods during which they can be hunted. It also defines hunting methods which are permitted (e.g., non-selective hunting is banned).</p>
Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (92/43/EEC)	Biodiversity, flora and fauna	The main aim of the Habitats Directive is to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. While the Directive makes a contribution to the general objective of sustainable development; it ensures the conservation of a wide range of rare, threatened or endemic species, including around 450 animals and 500 plants. Some 200 rare and characteristic habitat types are also targeted for conservation in their own right. The Directive provides for a ban on the downgrading of breeding and resting places for certain strictly protected animal species. Exceptions to the strict protection rules can be granted under very specific conditions. The Habitats Directive also establishes the EU wide Natura 2000 ecological network of protected areas. For these areas it provides a high level of safeguards against potentially damaging developments. Together with the Birds Directive, the Habitats Directive forms the backbone of EU nature protection legislation.
Directive on Animal health requirements for aquaculture animals and products thereof, and on the prevention and control of certain diseases in aquatic animals (2006/88/EC)	Biodiversity, flora and fauna	The Directive sets out rules on animal health concerning aquaculture animals and related products which apply to the marketing, importation and transit of such products. It also establishes measures aimed at the prevention and control of diseases in aquaculture animals as well as making further provisions regarding the authorisation to aquaculture production businesses and processing establishments.
Limiting Global Climate Change to 2 degrees Celsius - The way ahead for 2020 and beyond (2007)	Climatic Factors	<p>This a set of binding legislation to ensure the EU meets its climate and energy targets for the year 2020. The targets are:</p> <ul style="list-style-type: none"> 20% reduction in GHGs 20% of EU energy from renewables 20% improvement in energy efficiency
A Clean Planet for all: A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy (2018)	Climatic Factors	The long-term strategy sets out Europe's commitment to lead in global climate action and to present a vision that can lead to achieving net-zero greenhouse gas emissions by 2050 through a socially-fair transition in a cost-efficient manner. It looks into the portfolio of options available for Member States, business and citizens, as well as into how these can contribute to the modernisation of our economy and improve the quality of life of Europeans, protect the environment, and provide for jobs and growth.
Promotion of the use of energy and renewable sources Directive (2009/28/EC)	Climatic Factors	The Directive sets ambitious targets that the EU will reach a 20% share of energy from renewable sources by 2020 and a 10% share of renewable energy specifically in the transport sector. It also sets out to improve the legal framework for promoting renewable energy.
Energy Act 2013	Climatic Factors	The Act makes provides a framework for delivering secure, affordable and low carbon energy. It includes provisions for decarbonisation and the duties in relation to it.
Mainstreaming sustainable development into EU policies: 2009 Review of the European Union Strategy for Sustainable Development	Cross-cutting	<p>The Renewed EU Sustainable Development Strategy (2006) deals in an integrated way with economic, environmental and social issues and lists the following seven key challenges:</p> <ol style="list-style-type: none"> 1. Climate change and clean energy; 2. Sustainable transport; 3. Sustainable consumption and production; 4. Conservation and management of natural resources; 5. Public health; 6. Social inclusion, demography and migration; and 7. Global poverty
European Commission Environmental Liability Directive (2004/35/EC)	Cross-cutting	The Directives relates to the prevention and remedying of environmental damage (ELD) and establishes a framework based on the polluter pays principle to prevent and remedy environmental damage. The Directive defines "environmental damage" as damage to protected species and natural habitats, damage to water and damage to soil.
Directive on the assessment of the effects of certain plans and programmes on the environment (2001/42/EC)	Cross-cutting	The Directive, known as the SEA Directive, sets out the requirement for the assessment of certain plans and programmes on the environment. An SEA is mandatory for plans/programmes which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste/ water management, telecommunications, tourism, town & country planning or land use and which set the framework for future development consent of projects listed in the EIA Directive. SEA is also required where plans/programmes have been determined to require an assessment under the Habitats Directive.

Policy, Plan or Programme	Topic	Key objectives, guidance and references
The Convention for the Protection of the Architectural Heritage of Europe (Granada Convention) (1985)	Historic Environment	The Convention sets out to reinforce and promote policies for the conservation and enhancement of Europe's heritage. It also affirms the need for European solidarity with regard to heritage conservation and is designed to foster practical co-operation among the Parties. It establishes the principles of "European co-ordination of conservation policies" including consultations regarding the thrust of the policies to be implemented.
The European Convention on the Protection of Archaeological Heritage (Valletta Convention) (1992)	Historic Environment	The Convention aims to protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study.
The European Landscape Convention (2006)	Landscape	The Convention is also known as the Florence Convention and it aims to promote the protection, management and planning of European landscapes and organises European co-operation on landscape issues.
The Environmental Noise Directive (2002/49/EC)	Population and Human Health	The Directive is the EU's main instrument to identify noise pollution levels and covers the following three key action areas: the determination of exposure to environmental noise; ensuring that information on environmental noise and its effects is made available to the public; and preventing and reducing environmental noise where necessary and preserving environmental noise quality where it is good. It applies to noise to which humans are exposed, particularly in built-up areas, in public parks or other quiet areas in an agglomeration, in quiet areas in open country, near schools, hospitals and other noise-sensitive buildings and areas. It does not apply to noise that is caused by the exposed person himself, noise from domestic activities, noise created by neighbours, noise at workplaces or noise inside means of transport or due to military activities in military areas.
European Soils Charter (2003)	Soil	<p>The Charter sets out to protect soil as a complex natural resource which is fundamental to life. It recognises that:</p> <ul style="list-style-type: none"> • Soil is a precious asset • Soil is a limited resource which is easily destroyed • Land has a wide variety of uses and a proper planning policy is needed by Governments for urban development and civil engineering projects • Farmers and foresters must preserve the soils quality • Soil must be protected from erosion and pollution <p>Further research and collaboration is required to ensure the wise use and conservation of soil</p>
Thematic Strategy for Soil Protection (2006)	Soil	<p>The Strategy aims to protect soil and promote its sustainable use. It is based on the following guiding principles:</p> <ul style="list-style-type: none"> • Preventing further soil degradation and preserving its functions • Restoring degraded soils to a level of functionality consistent at least with current and intended use, thus also considering the cost implications of the restoration of soil
The Nitrates Directive (91/676/EEC)	Water	The Nitrates Directive aims to protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices. This Directive forms integral part of the Water Framework Directive and is one of the key instruments in the protection of waters against agricultural pressures.
The Water Framework Directive (WFD) (2000/60/EC)	Water	<p>The WFD has the following key aims:</p> <ul style="list-style-type: none"> • Expanding the scope of water protection to all waters, surface waters and groundwater • Achieving 'good status' for all waters by a set deadline • Water management based on river basins • 'Combined approach' of emission limit values and quality standards • Getting the prices right • Getting the citizen involved more closely • Streamlining legislation <p>There are a number of objectives in respect of which the quality of water is protected. The key ones at European level are general protection of the aquatic ecology, specific protection of unique and valuable habitats, protection of drinking water resources, and protection of bathing water. Member States must aim to reach good chemical and ecological status in inland and coastal waters by 2015.</p>
Urban Wastewater Treatment Directive (91/271/EEC)	Water	The objective of this Directive is to protect the environment from the adverse effects of urban wastewater discharges and discharges from certain industrial sectors. The Directive concerns the collection, treatment and discharge of such wastewater.
Drinking Water Directive (1998/83/EC)	Water	<p>The Drinking Water Directive sets out the following objectives:</p> <ul style="list-style-type: none"> • Sets quality standards for drinking water quality at the tap (microbiological, chemical and organoleptic parameters) and the general obligation that drinking water must be wholesome and clean. • Obliges Member States to regular monitoring of drinking water quality and to provide to consumers adequate and up-to-date information on their drinking water quality.

Policy, Plan or Programme	Topic	Key objectives, guidance and references
		<ul style="list-style-type: none"> Member States may exempt water supplies serving less than 50 persons or providing less than 10 m3 of drinking water per day as an average and water in food-processing undertakings where the quality of water cannot affect the wholesomeness of the foodstuff in its finished form.
Directive on Bathing Water (76/160/EEC); and Directive 2006/7/EC repealing Directive 76/160/EEC (from 2014)	Water	The overall objective of the Directive remains the protection of public health whilst bathing, but the revised Directive also offers an opportunity to improve management practices at bathing waters and to standardise the information provided to bathers across Europe and aims to set more stringent water quality standards and also puts a stronger emphasis on beach management and public information.
Groundwater Directive (2006/118/EC)	Water	<p>This directive establishes a regime which sets underground water quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater. The directive establishes quality criteria that takes account local characteristics and allows for further improvements to be made based on monitoring data and new scientific knowledge.</p> <p>The directive thus represents a proportionate and scientifically sound response to the requirements of the WFD as it relates to assessments on chemical status of groundwater and the identification and reversal of significant and sustained upward trends in pollutant concentrations. Member States will have to establish the standards at the most appropriate level and take into account local or regional conditions. The groundwater directive complements the WFD. It requires:</p> <ul style="list-style-type: none"> Groundwater quality standards to be established by the end of 2008 Pollution trend studies to be carried out by using existing data and data which is mandatory by the WFD (referred to as 'baseline level' data obtained in 2007-2008) Pollution trends to be reversed so that environmental objectives are achieved by 2015 by using the measures set out in the WFD Measures to prevent or limit inputs of pollutants into groundwater to be operational so that WFD environmental objectives can be achieved by 2015 Reviews of technical provisions of the directive to be carried out in 2013 and every six years thereafter <p>Compliance with good chemical status criteria (based on EU standards of nitrates and pesticides and on threshold values established by Member States)</p>
Marine Strategy Framework Directive (2008/56/EEC)	Biodiversity, flora and fauna; Water	The aim of the Marine Strategy Framework Directive is to protect more effectively the marine environment across Europe. It aims to achieve Good Environmental Status of the EU's marine waters by 2020 and to protect the resource base upon which marine-related economic and social activities depend. The Directive enshrines in a legislative framework the ecosystem approach to the management of human activities having an impact on the marine environment, integrating the concepts of environmental protection and sustainable use.
Directive on the Assessment and Management of Flood Risks (2007/60/EC)	Water	Its aim is to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity. The Directive requires Member States to first carry out a preliminary assessment by 2011 to identify the river basins and associated coastal areas at risk of flooding. For such zones they would then need to draw up flood risk maps by 2013 and establish flood risk management plans focused on prevention, protection and preparedness by 2015. The Directive applies to inland waters as well as all coastal waters across the whole territory of the EU.
Blueprint to Safeguard Europe's Water Resources (2012)	Water	The Blueprint outlines actions in relation to improved implementation of current water legislation and the integration of water policy objectives into other policies, and also aims to fill the gaps in regard to water quantity and efficiency. The objective is to ensure that a sufficient quantity of good quality water is available for people's needs, the economy and the environment throughout the EU. It is closely linked to EU's 2020 Strategy and the 2011 Resource Efficiency Roadmap; however, the analysis spans up to 2050 and is therefore expected to drive EU water policy over the long term.
National		
Air Pollution: Action in a Changing Climate (2010)	Air	The Department for Environment, Food and Rural Affairs (Defra) policy paper summarises the main issues concerning air pollution and how to benefit from the interconnections between measures to address air pollution and climate change.
Air Quality Standards Regulations (2010)	Air	<p>These Regulations transpose into English legislation the requirements of:</p> <ul style="list-style-type: none"> (i) Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe; (ii) Directive 2004/107/EC of the European Parliament and of the Council of 15 December 2004 relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air; and (iii) Council Decision 97/101/EC on the exchange of information <p>They replace the existing Air Quality Standards Regulations 2007.</p>
Air Quality Plan for Nitrogen Dioxide (NO2) in UK (2017)	Air	This plan sets out requirements for specified local authorities to carry out studies or to implement actions to meet legal limits for nitrogen dioxide in the shortest possible time and sets deadlines.
Air Quality Strategy (2023)	Air	The policy paper sets out the strategic framework for local authorities and other partners given their role in delivering cleaner air for communities and nature across England. It sets out their powers, responsibilities, and further actions the Government expects them to take to contribute to long-term air quality goals, including the ambitious new targets for fine particulate matter (PM2.5).

Policy, Plan or Programme	Topic	Key objectives, guidance and references
Clean Air Strategy (2019)	Air	<p>The Strategy recognises the importance of clean air in relation to health, life, the environment and the economy. It sets out the actions that are required to meet the targets for fine particulate matter, ammonia, nitrogen oxides, sulphur dioxide, non-methane volatile organic compounds by 2030 and 2050. Actions are focussed on reducing and managing emissions to protect human health and the environment. These include:</p> <ul style="list-style-type: none"> • Cut public exposure to particulate matter pollution. Provide powers to enable targeted local action in problem areas • Reduce nitrogen deposition and tackle the environmental impacts of air pollution • Monitor and report the impacts of air pollution on natural habitats • Provide guidance for local authorities to assess and mitigate, through the planning system, the cumulative impacts of nitrogen deposition on natural habitats <p>Additional actions are focused on achieving clean growth and innovation, transport, at home, from farming, and industry</p>
Ozone-Depleting Substances Regulations (2015)	Air	<p>The Regulations make provision for a purpose mentioned in section 2(2) of, and paragraph 1A of Schedule 2 to, the European Communities Act 1972 and it appears to the Secretary of State that it is expedient for references to Annex I to Regulation (EC) No 1005/2009 to be construed as references to that Annex as amended from time to time.</p>
The Eels (England & Wales) Regulations 2009 (as amended)	Biodiversity, flora and fauna	<p>Transposed from the European Directive (1100/2007) into UK law, the Regulations aim to establish measures for the recovery of the stock of European eel. The Regulations will help implement delivery Eel Management Plans.</p>
Norfolk and Suffolk Broads Act 1988	Landscape	<p>An Act to establish an authority to be known as the Broads Authority; to make provision with respect to its powers; to make provision with respect to the area commonly known as the Broads and with respect to the Great Yarmouth Port and Haven and its Commissioners; to provide for the making of grants to the Authority by the Secretary of State; and for connected purposes.</p>
Narrative for Conserving Freshwater and Wetlands in England, Natural England (2016)	Biodiversity, flora and fauna	<p>This evidence-based narrative provides an overview of circumstances relating to the conservation of freshwater and wetland habitats in England. It considers their ecological function, the natural and anthropogenic factors affecting them, the management principles that can be drawn from the evidence, and the respective roles of the main policy mechanisms involved in their conservation. It covers all running and standing water habitats and terrestrial wetland habitats including bogs, fens, swap, and wet woodland.</p>
UK Peat Strategy (2018-2040) (2018)	Biodiversity, flora and fauna	<p>The UK Peatland Strategy aims to drive and co-ordinate action across the UK, supported by country level plans that will establish a course for peatland conservation and management at a more detailed level. This strategy recognises there are different peatlands and types of pressures within the UK and seeks to provide common goals across the four devolved administrations of England, Northern Ireland, Scotland and Wales towards an overarching aim of two million hectares under restoration or in good condition by 2040.</p>
Salmon and Freshwater Fisheries Act 1975	Biodiversity, flora and fauna	<p>The Act sets out the legal framework in which salmon and freshwater fisheries are regulated. It covers regulation on fishing methods and related offences, obstructions to fish passage, salmon and freshwater fisheries administration and law enforcement.</p>
UK Post-2010 Biodiversity Framework, JNCC and Defra (2012)	Biodiversity, flora and fauna	<p>The purpose of the Framework is to set a broad enabling structure for action across the UK between now and 2020:</p> <ul style="list-style-type: none"> • To set out a shared vision and priorities for UK-scale activities, in a framework jointly owned by the four countries, and to which their own strategies will contribute. • To identify priority work at a UK level which will be needed to help deliver the Aichi targets and the EU Biodiversity Strategy. • To facilitate the aggregation and collation of information on activity and outcomes across all countries of the UK, where the four countries agree this will bring benefits compared to individual country work. • To streamline governance arrangements for UK-scale activity.
Making Space for Nature - A review of England's Wildlife Sites and Ecological Network (2010)	Biodiversity, flora and fauna	<p>The report aims to answer the following questions: Do England's wildlife sites comprise a coherent and resilient ecological network? If not, what needs to be done? The report concludes that the approaches required to achieve a coherent and resilient ecological network are varied, and 24 wide-ranging recommendations are presented. Five themes unite them:</p> <p>We need to continue the recent progress in improving the management and condition of wildlife sites, particularly our SSSIs. We also make recommendations for how these should be designated and managed in ways that enhance their resilience to climate change.</p> <p>We need to properly plan ecological networks, including restoration areas. Restoration needs to take place throughout England. However, in some areas, both the scale of what can be delivered to enhance the network, and the ensuing There are a large number of surviving patches of important wildlife habitat scattered across England outside of SSSIs, for example in Local Wildlife Sites. We need to take steps to improve the protection and management of these remaining wildlife habitats. 'Protection' will usually be best achieved through incentive-based mechanisms, but at times may require designation.</p> <p>We need to become better at deriving multiple benefits from the ways we use and interact with our environment. There are many things that society has to do that may seem to have rather little to do with nature conservation, but could have, or even should have if we embrace more radical thinking; flood management by creating wetlands is an obvious example. We need to exploit these 'win-win' opportunities to the full. Being better at valuing a wider range of ecosystem services would help this process.</p> <p>We will not achieve a step-change in nature conservation in England without society accepting it to be necessary, desirable, and achievable. This will require strong leadership from government and significant improvements in collaboration between local authorities, local communities, statutory agencies, the voluntary and private sectors, farmers, landowners and other land-managers and individual citizens.</p>

Policy, Plan or Programme	Topic	Key objectives, guidance and references
Biodiversity 2020: A strategy for England's wildlife and ecosystem services, Defra (2011)	Biodiversity, flora and fauna	The Strategy builds on the Natural Environment White Paper and sets out how the UK is implementing the international and EU commitments. The mission for this strategy is as follows: 'to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people'.
The Conservation of Habitats and Species Regulations (2010) 'the Habitats Regulations' (amended 2011)	Biodiversity, flora and fauna	The Conservation of Habitats and Species Regulations 2010 apply in the terrestrial environment and in territorial waters out to 12 nautical miles. The EU Habitats and Wild Birds Directives are transposed in UK offshore waters by separate regulations. The new regulations do not make any substantive changes to existing policies and procedures other than the establishment of the Marine Management Organisation. The Marine Management Organisation takes on certain licensing functions from Natural England to ensure consistency with the approach in the Marine and Coastal Access Act 2009. The objective of the Habitats Directive is to protect biodiversity through the conservation of natural habitats and species of wild fauna and flora. The Directive lays down rules for the protection, management and exploitation of such habitats and species.
Site Improvement Plans for England's Natura (IPENS) 2000 sites: East of England (2012)	Biodiversity, flora and fauna	<p>Special Areas of Conservation (SAC) and SPAs are collectively known as national site network Natura 2000 (previously Natura 2000) sites in England, and are protected under relevant European legislation for their important wildlife and habitats. In England there are approximately 338 sites covering approximately 2,076,875 hectares. A wide range of organisations and individuals own, manage or have an interest in Natura 2000 national site network sites. This includes Government agencies, voluntary bodies, private companies and individuals who collectively have a wealth of knowledge and experience. The improvement programme for England's Natura 2000 sites (IPENS) is working with these partners, and other stakeholders to develop a strategic approach to achieving favourable condition on these sites by reviewing:</p> <ul style="list-style-type: none"> • The risks and issues that are impacting on and/or threatening the condition of the site • Which actions and measures could be used to address them • How much it will cost and where the money could come from <p>This will be the first time that this information will have been drawn together for all of England's Natura 2000 sites. It provides Natural England and its partners with:</p> <ul style="list-style-type: none"> • An improved understanding of the issues affecting the sites and how to address them • A clear plan of action for improving their condition and how much it may cost <p>Recommendations to improve gaps in funding and evidence</p>
The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019)	Biodiversity, flora and fauna	This instrument provides changes to those parts of the 2017 conservation of habitats and species regulations which would no longer work when the UK leaves the EU.
UK Biodiversity Action Plan (1994)	Biodiversity, flora and fauna	This Action Plan sets out a programme for the conservation of the UK's biodiversity and led to the production of action plans to achieve the recovery of many of the most threatened species and habitats. Between 1995 and 1999 a total of 391 Species Action Plans (covering 475 separate species) and 45 Habitat Action Plans were produced, each with specific biological targets and a Lead Partner to co-ordinate plan implementation.
Securing a healthy natural environment: An action plan for embedding an ecosystems approach (2007)	Biodiversity, flora and fauna	<p>This document, which has come to be known as the "Ecosystems Approach Action Plan" (EAAP) was published at the end of 2007 as a result of two years' work within Defra and with a range of stakeholders. The EAAP set out the concept and framework of ecosystem services, and described how this could be translated into "an ecosystems approach" to policy and decision making that could be applied at all levels of Government in this country. This focused on two main areas:</p> <ol style="list-style-type: none"> 1. Shifting the focus of policy making and delivery away from looking at natural environment policies in separate "silos" – e.g., air, water, soil, biodiversity – and towards a more holistic or integrated approach based on whole ecosystems 2. Seeking to ensure that the value of ecosystem services is fully reflected in policy and decision making in Defra and across Government at all levels <p>It set out the national, international and regional situation at the time, to show where this approach and framework was already being embedded in policy that related to the natural environment. It also set out the most up to date thinking about the evidence base for this area, including methods for valuing the natural environment and for taking account of environmental limits. Lastly, it looked to the future challenges of climate change adaptation and mitigation to consider how an adaptive approach to managing the environment in light of these and other pressures and challenges may be required.</p>
Delivering a healthy natural environment. Ecosystem approach action plan, Defra (2010)	Biodiversity, flora and fauna	Known as the "Ecosystems Approach Action Plan" (EAAP), it was first published in 2007 and was then updated in 2010. It sets out the concept and framework of ecosystem services and describes how this could be translated into "an ecosystems approach" to policy and decision making that could be applied at all levels of Government.
The Great Britain Invasive Non-Native Species Strategy, Defra (2015)	Biodiversity, flora and fauna	The Strategy builds on the first which was published in 2008 and sets out a series of aims and objectives to underpin action until 2020. It aims to address the issues of INNS in the UK to protect biodiversity, quality of life and economic interests.
Conservation 21 - Natural England's Conservation Strategy for the 21st Century, Natural England (2016)	Biodiversity, flora and fauna	<p>The Strategy sets out how Natural England aim to contribute to the ambition set out the in Defra's strategy to 2020 and how they can work together with others to deliver this shared ambition. The Strategy is based on the following three principles:</p> <ul style="list-style-type: none"> • Creating resilient landscapes and seas • Putting people at the heart of the environment • Growing natural capital
State of Natural Capital Annual Report 2020, Natural Capital Committee (2020)	Biodiversity, flora and fauna	The Nature Capital Committee's seventh annual report on the state of natural capital. The report recognises the importance that nature-based interventions will have on achieving net zero by 2050 targets. The report makes recommendations for the Government to take forward and outlines key points for inclusion within the Environment Bill.

Policy, Plan or Programme	Topic	Key objectives, guidance and references
Standing Advice on Protected Species, Natural England (2022)	Biodiversity, flora and fauna	This standing advice avoids the need to consult Natural England on every planning application and helps the Local Planning Authority (LPA) to make planning decisions on development proposals. The LPA must be consulted if the proposed development might affect an SSSI, need an environmental assessment, or need an appropriate assessment under the Habitats Regulations. The National Planning Policy Framework (NPPF) explains how to apply, avoid adverse effects, and compensate for impacts. This standing advice suggests where to expect protected species and when to survey each species. If these species are present, planning permission cannot be granted and the standing advice suggests what to do in these situations.
Nature for People Climate and Wildlife policy paper (2021) – includes the England Peat Action Plan	Biodiversity, flora and fauna; Water	<p>Outlines the link between our health and economic prosperity, as realised by the Covid-19 pandemic. The policy emphasises the scale of the biodiversity crisis, implementing a legally binding target in the Environment Bill for species abundance for 2030, with the intention of this being the Net Zero equivalent for nature. This included the publishing of a Green Paper in 2021 which described how this would be delivered, along with the domestic ambition of protecting 30% of UK land by 2030, since leaving the EU.</p> <p>The policy launches Action Plans that are supported by the £640 million Nature for Climate Fund to expand and enhance woodland cover, and restore and maintain peatland. The aim is for these to work together to play a key role in the Nature Recovery Network. This Network includes Nature Recovery Strategies, which incorporate the schemes of the Sustainable Farming Incentive, Local Nature Recovery and Landscape Recovery, to ensure fair payment of farmers for sustainable action, and supporting nature restoration and biodiversity recovery.</p> <p>The England Peat Action Plan states the importance of peatland restoration as they are the biggest terrestrial carbon store, home to many rare species, and restored upland peatland helps manage flood risk by releasing water over a longer period of time. They are attempting to eradicate damaging practices such as bringing forward legislation and seeing the phasing out of managed burning, which will protect 142,000ha of upland peatland.</p> <p>Aims to restore, sustainably manage and protect our peatlands. There is a proposed investment of over £50 million from the Nature for Climate Fund, to see a restoration of approximately 35,000 ha of peatland by 2025, in line with the Nature for Climate Peatland Grant Scheme.</p> <p>In summer 2022, new recommendations are planned, including new schemes with incentives for farmers and land managers to be more sustainable.</p>
Climate Change Act 2008	Climatic Factors	The Act sets out a legal framework to commit the Government to tackling climate change and climate change adaptation is also covered in the Act as it provides a legal framework for adaptation policy. The Act sets out a target of net zero by 2050 based on 1990 levels.
Planning our electric future: A White Paper for secure, affordable and low carbon electricity (2011)	Climatic Factors	This White Paper sets out the Government's commitment to transform the UK's electricity system to ensure that future electricity supply is secure, low-carbon and affordable. The package of reforms outlined here will mean that by 2030 there will be: a flexible, smart and responsive electricity system, powered by a diverse and secure range of low-carbon sources of electricity, with a full part played by demand management, storage and interconnection; competition between low-carbon technologies that will help to keep costs down; a network that will be able to meet the increasing demand that will result from the electrification of transport and heating systems; and the transition has been made at the least cost to the consumer.
Third UK Climate Risk Independent Assessment (CCRA3) (2021)	Climatic Factors	<p>The UK Government is required, under the 2008 Climate Change Act, to publish a Climate Change Risk Assessment (CCRA) every five years. The assessment sets out the risks and opportunities facing the UK from climate change. National summaries are provided for each of the devolved nations and for England, it assesses 61 risks and opportunities from climate change, including to business, infrastructure, housing, the natural environment, health and risks from the impacts of climate change internationally. The key conclusions are as follows:</p> <ul style="list-style-type: none"> Of these 61 risks and opportunities, more action is needed in England now to address 34 of them, with sustaining current action only deemed appropriate in four cases Of the 61, six issues are deemed to be both a risk and opportunity, four of which are associated with the natural environment and each of these require more action or further investigation <p>There are also eight opportunities that could arise from climate change in England, with half of these also related to the natural environment</p>
UK Renewable Energy Roadmap (2011)	Climatic Factors	The roadmap builds on the actions already underway: financial support mechanisms for renewables, the Green Investment Bank to help companies secure investment in green infrastructure, and encouraging the development of new offshore wind manufacturing facilities at port sites.
UK Net Zero Growth Plan (2023)	Climatic Factors	The Net Zero Growth Plan sets out how the Government plans to meet net zero while supporting economic growth and prosperity in the UK.
UK Powering Up Britain – Energy Security Plan (2023)	Climatic Factors	This Plan sets out the steps the Government is taking to ensure the UK is more energy independent, secure and resilient. This Plan builds on the ambitions set out in the British Energy Security Strategy and the Net Zero Strategy for increasing the overall share of domestic energy production and reducing energy demand.
UK Renewable Energy Strategy (2009)	Climatic Factors	This Strategy explains how and why renewable electricity, heat and transport will be increased in usage. It sets out the path to meet the legally binding target to ensure 15% of the UK's energy comes from renewable sources by 2020: almost a seven-fold increase in the share of renewables in scarcely more than a decade.
UK Climate Change Risk Assessment, Defra (2017)	Climatic Factors	<p>Identifies the key climate change risks and opportunities for the UK which are as follows:</p> <ul style="list-style-type: none"> Flooding and coastal change risks to communities, businesses and infrastructure Risks to health, well-being and productivity from high temperatures Risks of shortages in the public water supply for agriculture, energy generation and industry Risks to natural capital including terrestrial, coastal, marine and freshwater ecosystems, soils and biodiversity

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		<ul style="list-style-type: none"> Risks to domestic and international food production and trade New and emerging pests and diseases and invasive non-native species affecting people, plants and animals
The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting, Defra (2018)	Climatic Factors	This is the second National Adaptation Programme (NAP) and sets out the Government's response to the second Climate Change Risk Assessment (CCRA). It also outlines the actions that will be taken to address the climate change issues identified in the CCRA across the following key sectors: Natural environment; Infrastructure; People and the built environment; Business and industry; and Local government.
National Planning Policy Framework (NPPF) (2019)	Cross-cutting	The updated NPPF sets out government's planning policies for England and how these are expected to be applied. Achieving sustainable development is at the heart of the NPPF whereby it has three overarching objectives in the social, economic and environmental spheres.
A Green Future: Our 25 Year Plan to Improve the Environment, UK Government (2018)	Cross-cutting	<p>The 25 Year Plan sets out the Governments actions for improving the health of the natural environment. It includes six actions in order achieve clean air, plentiful and clean water, thriving plants and wildlife, reduced harm from environmental hazards, sustainable resource use and enhanced beauty, heritage and engagement with the natural environment:</p> <ul style="list-style-type: none"> Using and managing land sustainably Recovering nature and enhancing the beauty of landscapes Connecting people with the environment to improve health and wellbeing Increasing resource efficiency, reducing pollution and waste Securing clean, productive and biologically diverse seas and oceans Protecting and improving the global environment
The draft Environment Bill 2020	Cross-cutting	<p>The Bill was first introduced to parliament in October 2019 and then reintroduced in January 2020. The Bill is currently under review by a Public Bill Committee. The Environment Bill will support the 25 Year Environment Plan and brings about urgent and meaningful action to combat the environmental issues that the UK is facing. It sets out a requirement for biodiversity net gain which includes at least a 10% improvement in biodiversity value for new development. It also includes details on:</p> <ul style="list-style-type: none"> Creating a new governance framework for the environment A new direction for resources and waste management Improving air quality Securing our water services Enhancing our green spaces Updating laws on chemicals (REACH)
National Food Strategy (2020)	Cross-cutting	This independent report, published on 15 July 2021, looks at the entire food chain, from field to fork. This includes production, marketing, processing, sale and purchase of food (for consumption in the home and out of it). It also looks at the consumer practices, resources and institutions involved in these processes.
Energy White Paper: Meeting the Energy Challenge (2007)	Climatic Factors	This White Paper sets out the Government's international and domestic energy strategy to respond to these changing circumstances, address the long-term energy challenges the country faces and deliver the four energy policy goals. It sets out how the measures in the Energy Review Report in 2006 are being implemented, as well as those announced since, including in the Pre-Budget Report in 2006 and the Budget in 2007.
Net Zero Strategy: Build Back Greener (2021)	Climatic Factors	<p>The Strategy lays the foundations for a green economic recovery from the impact of COVID-19 with the UK at the forefront of the growing global green economy. It builds on the approach to keep the UK on track for meeting its carbon budgets, the 2030 Nationally Determined Contribution, and net zero by 2050 commitments. It includes:</p> <ul style="list-style-type: none"> Decarbonisation pathways to net zero by 2050, including illustrative scenarios Policies and proposals to reduce emissions for each sector <p>Cross-cutting action to support the transition</p>
Government Food Strategy (2022)	Cross-cutting	This strategy responds to the Dimpleby Review, and includes policy initiatives to boost health, sustainability, accessibility of diets and to secure food supply, ensuring that domestic producers and the wider food and drink industry contributes to the levelling up agenda and makes the most of post-Brexit opportunities.
Culture White Paper (2016)	Cross-cutting	The Culture White Paper sets out the Government's ambition and strategy for the cultural sectors, and put in place measures to increase participation in culture, especially among those who are currently excluded from the opportunities that culture has to offer.
UK Sustainable Development Strategy (2005)	Cross-cutting	The Strategy takes account of developments since the 1999 Strategy, both domestically and internationally; the changed structure of Government in the UK with devolution to Scotland, Wales and Northern Ireland; greater emphasis on delivery at regional level and the new relationship between Government and local authorities.
Securing the Future – Delivering the UK Sustainable Development Strategy (2005)	Cross-cutting	The Strategy for sustainable development aims to '...enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations.'

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		<ul style="list-style-type: none"> • Guiding principles: • Living within environmental limits • Ensuring a strong, healthy, and just society • Achieving a sustainable economy • Promoting good governance • Using sound science responsibly • UK priorities for immediate action • Sustainable consumption and production • Climate change and energy • Natural resource protection and environmental enhancement • Sustainable communities
The Natural Choice: Securing the Value of Nature, Defra (2011)	Cross-cutting	The White Paper outlines the Government's vision for the natural environment for the next 50 years.
Marine and Coastal Access Act (2009)	Cross-cutting	The Act sets out to protect marine functions, activities and wildlife. It commits the UK to ambitious actions and sets out the provisions for Marine Conservation Zones (MCZs), a Marine Planning system, reform of inshore fishers, amongst others.
The Wildlife and Countryside Act 1981 (as amended)	Cross-cutting	The Wildlife and Countryside Act is the main Act which protects animals, plants and habitats in the UK. It implements the Bern Convention and the Birds Directive and contains details of European and national designated sites, protection for designated species.
Environment Protection Act 1990	Cross-cutting	The Act aims to set out provisions for the control of pollution to the environment (air, water and land) by regulating the management of waste and emissions. It places a duty of care on any business or person who produces waste to do so carefully and in line with requirements.
Countryside and Rights of Way (CROW) Act	Cross-cutting	The Act was introduced in 2000 with the intention to give greater freedom for people to explore open countryside and contains provisions to introduce a new statutory right of access for open-air recreation to mountain, moor, heath, down and registered common land. It also includes a power to extend the right to coastal land by order and enables landowners voluntarily to dedicate irrevocably any land to public access.
The Natural Environment and Communities Act 2006 (NERC Act)	Cross-cutting	The Natural Environment and Rural Communities Act is designed to help achieve a rich and diverse natural environment and thriving rural communities through modernised and simplified arrangements for delivering Government policy. It is about conserving and enhancing places and nature and helping people to enjoy them – taking a wider view, pursuing environmental management which encompasses access and recreation, and aiming where possible to achieve economic and social outcomes alongside conservation goals.
Creating a better place: Our ambition to 2020, Environment Agency (2018)	Cross-cutting	This aims to protect and improve natural resources in the UK and sits alongside Defra's 25 Year Environment Plan. It sets out the Environment Agency's vision, principles and purpose until 2020 as well as how they aim to deliver against the 25 Year Environment Plan.
UK National Ecosystem Assessment Follow-on (2014)	Cross-cutting	The 2011 UK National Ecosystem Assessment (UK NEA) which identified that the natural world and its ecosystems are important to our well-being and economic prosperity, however they are consistently undervalued. This follow on provides new information and tools to help decision makers integrate the value of ecosystems into decision making.
National Infrastructure Delivery Plan 2016–2021, Infrastructure and Projects Authority (HM Government) (2016)	Cross-cutting	<p>Sets out the Government's plans for economic infrastructure over the next 5 years to support delivery of housing and social infrastructure. The Plan recognises that water services are likely to come under increasing pressure because of population growth and a changing climate. The Plan sets out the following key objectives for water:</p> <p>Start of construction on the Thames Tideway Tunnel</p> <p>Reductions in average bills of about 5% in real terms</p> <p>Further expenditure from 2020 with the start of Asset Management Period 7</p>
Rural Strategy (2004)	Cross-cutting	The Rural Strategy 2004 sets out how they plan to reform delivery to give a better deal for customers, the environment and the taxpayer, in line with the Prime Minister's principles of public service reform that underpin this Government's approach. The proposals include a radical new approach for streamlining over one hundred rural funding streams to improve the customer experience and ensure that resources are clearly targeted to deliver the outcomes set out in this Strategy.
The Levelling Up and Regeneration Bill (2022)	Cross-cutting	The Levelling Up and Regeneration Bill (LURB) is a key component of the wider programme to level up the country as set out in the Levelling Up White Paper (2022) and aims to reform the planning system to tackle geographical disparities across the UK (following on from the Planning White Paper (2020)). Part 5 of the LURB sets out a new Environmental Outcomes system to replace existing Environment Impact Assessment (EIA), Sustainability Appraisal (SA) and SEA processes, intending to build on the Environment Act 2021 through enhancing the existing assessment process. Environmental Outcomes have yet to be defined but will likely be set by future Environmental Outcomes Regulations which will set the primary framework for assessment.

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Mainstreaming Sustainable Development (2011)	Cross-cutting	The Government's commitment to sustainable development and the measures it is taking to mainstream it into overall Government policy.
Build Back Better: our plan for growth (2021)	Cross-cutting	The Plan sets out the UK Government's plan to support growth through investment to allow every part of the UK to grow while enabling a transition to net zero. The Plan recognises that there has been a lot of change since the Industrial Plan was published in 2017 (net zero commitments, COVID-19 and the exit from the European Union) and as such, a new framework for growth is needed. Infrastructure, skills and innovation are the three pillars of growth the Plan focuses on.
National Parks and Access to the Countryside Act 1949	Cross-cutting	The Act makes provision for National Parks and the establishment of a National Parks Commission. The Act also provides the framework for the creation of Areas of Outstanding Natural (AONB) Beauty in England and Wales, and also addressed public rights of way and access to open land.
Infrastructure Act (2015)	Cross-cutting	The act will allow the creation of Highways England, a Government-owned company which will use access to long term stable funding to ensure improvements on the country's major road network are streamlined, cost efficient and encourage investment. The legislation will also give local people the right to buy a stake in renewable energy projects, while cutting red tape for nationally significant infrastructure projects to boost investment.
Fixing the foundations: Creating a more prosperous nation, HM Government (2015)	Cross-cutting	<p>The reports sets out the importance of productivity and the Government's vision to delivering a UK economy which is the richest of all major economies by 2030. It includes two pillars for raising productivity:</p> <p>Encouraging long term investment in economic capital, including infrastructure, skills and knowledge.</p> <p>Promoting a dynamic economy that encourages innovation and helps resources flow to their most productive use.</p>
Environment Act 1995	Cross-cutting	The Act set out provisions for the creation of a number of government agencies including the Environment Agency and the Scottish Environment Protection Agency (SEPA). It also set out new standards for environmental protection.
The Environmental Damage (Prevention and Remediation) (England) Regulations 2015	Cross-cutting	The Regulations seek to ensure action is taken put any environmental damage right and are based on the 'polluter pays principle'. It transposes the European Commission Environmental Liability Directive into UK law. The Regulations require action in response to the most significant cases, covering specific types of damage to species and habitats; damage to water; or risks to human health from contamination of land.
Environmental Assessment of Plans and Programmes Regulations 2004	Cross-cutting	The regulations transpose the SEA Directive into UK law which requires an assessment of the effects of certain plans and programmes on the environment. Article 3 (2b) states that SEA is required for plans and programmes which are prepared for water management, set the framework for development consents, and/or are likely to have a significant environmental effect.
Creating a great place for living: together we are building a green and healthy future (2018)	Cross-cutting	<p>The Defra group sets out make air purer, water cleaner, land greener and food more sustainable, and their mission is to restore and enhance the environment for the next generation, and to leave the environment in a better state. There are 10 goals which underpin this mission and include:</p> <ul style="list-style-type: none"> • Sustainable farming and food • Pure air, clean rivers and a resilient water supply • Healthy seas and oceans • Beautiful landscapes, flourishing wildlife and native species • Thriving rural economies and communities • Efficient resource use and reduced waste • Protecting animals and plants from health risks • Resilient communities and economies • Great places for living for people and animals • Green global Britain
Protection of Wrecks Act (1973)	Historic Environment	An Act to secure the protection of wrecks in territorial waters and the sites of such wrecks, from interference by unauthorised persons; and for connected purposes.
National Heritage Act (2002)	Historic Environment	An Act to make further provision in relation to the functions of the Historic Buildings and Monuments Commission for England; and for connected purposes.
Government Statement on the Historic Environment (2015)	Historic Environment	The historic environment is an asset of enormous cultural, social, economic and environmental value. It makes a very real contribution to quality of life and the quality of places. This document is intended to help Government to realise its vision for the historic environment, and to assist them in working jointly with others to achieve the aims. It sets out the understanding of the value of the historic environment, and the many roles that Government and others can play.
Scheduled Monuments & Nationally Important but Non-Scheduled Monuments (2013)	Historic Environment	This policy statement sets out the particular considerations used by the Secretary of State when determining whether sites are suitable for statutory designation through scheduling; the key non-statutory criteria are period, rarity, documentation, group value, survival and potential.

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Heritage Protection for the 21st Century (2007)	Historic Environment	The proposals are based around three core principles, developing a unified approach to the historic environment, maximising opportunities for inclusion and involvement, and supporting sustainable communities by putting the historic environment at the heart of an effective planning system.
Lakes and Water Features, Technical Guidance (2023)	Historic Environment	Historic England produced this technical guidance note related to lakes and water features associated with historic parks and gardens. It recognises that the management of these features is often complex and costly and therefore the note sets out guidance on how this can be undertaken. It sets out guidance around safety; design and construction; wildlife; archaeological features and water meadows; lake restoration; dams, spillways, gates and valves; water levels; and Sustainable Urban Drainage Systems (SuDS).
Peatlands and the Historic Environment, An Introduction to their Cultural and Heritage Value (2021)	Historic Environment	This resource outlines the archaeological, paleoenvironmental and cultural significance and value of peatlands and describes the wealth and diversity of heritage assets associated with them. The challenges facing peatlands, both natural and anthropogenic threats, are also set out in the report and a summary of how peatlands can be protected is included.
Managing Significance in Decision-Taking in the Historic Environment (2015)	Historic Environment	The guidance provides advice to support those involved in Local Plan development and the site allocation process to implement historic environment legislation, NPPF and the related PPG. The first step for all applicants is to understand the significance of any affected heritage asset and, if relevant, the contribution of its setting to its significance. The significance of a heritage asset is the sum of its archaeological, architectural, historic, and artistic interest. The guidance document sets out how significance of heritage assets should be considered and assessed where understanding of an asset's nature of significance, extent of significance and level of significance is required.
The Historic Environment and Site Allocations in Local Plans, Historic England Advice Note 3, Historic England (2015)	Historic Environment	The guidance provides advice to support those involved in Local Plan development and the site allocation process to implement historic environment legislation, NPPF and the related PPG. It intends to ensure that the historic environment is positively considered and that site allocations avoid harming the significance of both designated and non-designated heritage assets, including effects on their setting. It offers advice on evidence gathering and site allocation policies, as well as setting out in detail a number of steps to make sure that heritage considerations are fully integrated in any site selection methodology. The guidance is applicable to all types of developments and supports appropriate site selection.
Planning (Listed Buildings and Conservation Areas) Act 1990	Historic Environment	An Act of Parliament that altered the laws on granting of planning permission for building works, notably including those of the listed building system in England and Wales
The Ancient Monuments and Archaeological Areas Act 1979	Historic Environment	This Act is concerned with the provisioning, investigation, recording and the preservation and protection of archaeological sites and ancient monuments.
Climate Change and the Historic Environment, Historic England (2008)	Historic Environment	The statement recognises the climate change impacts the UK is facing and how this poses a risk to the historic environment.
Strategic Environmental Assessment, Sustainability Appraisal and the Historic Environment, Historic Environment (2016)	Historic Environment	Provides guidance on SEA in relation to the historic environment.
The Setting of Heritage Assets, Historic Environment Good Practice Advice in Planning 3, Historic Environment (2017)	Historic Environment	Sets out guidance on managing change within the settings of heritage assets, including archaeological remains and historic buildings, sites, areas, and landscapes, against the backdrop of the NPPF. It gives general advice on understanding setting, and how it may contribute to the significance of heritage assets and allow that significance to be appreciated, as well as advice on how views contribute to setting.
Ancient Woodland and Veteran Trees: Protecting them from development, Forestry Commission and Natural England (2014)	Biodiversity, flora and fauna Landscape	Sets out guiding principles for considerations when developments affect ancient woodlands or veteran trees. Ancient woodland is defined as an irreplaceable habitat which is important for wildlife, soils, recreational value and cultural, historical and landscape value. Ancient tree is one which attributes include the following: great age, size, condition, biodiversity, cultural heritage and value. The guidance also states that all ancient trees are veteran trees but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing which contribute to its biodiversity, cultural and heritage value. When making decisions the following should be considered: <ul style="list-style-type: none"> conserving and enhancing biodiversity reducing the level of impact of the proposed development on ancient woodland and ancient and veteran trees
Ancient woodland, ancient trees and veteran trees: advice for making planning decisions (2022)	Biodiversity, flora and fauna Landscape	This guide explains how to assess a planning application when there are ancient woodland, ancient trees or veteran trees on or near a proposed development site.
Our Waste, Our Resources: A Strategy for England, HM Government (2018)	Material Assets	The Strategy recognises that natural capital is one of our most valuable assets and sets out how the Government plans to preserve the stock of material resources by minimising waste, promoting resource efficiency and moving towards a circular economy. They also set out how they aim to minimise damage to the natural environment and is aligned to the Government's 25 Year Environment Plan. This is our blueprint for eliminating avoidable plastic waste over the lifetime of the 25 Year Plan, doubling resource productivity, and eliminating avoidable waste of all kinds by 2050.
UK Geodiversity Action Plan (UKGAP) (2011)	Soil	The UKGAP sets out a framework for geodiversity action across the UK. It has been developed and agreed through wide consultation and dialogue across England, Scotland, Wales and Northern Ireland between organisations, groups and individuals currently involved in geodiversity.

Policy, Plan or Programme	Topic	Key objectives, guidance and references
Soil Action Plan for England (2004)	Soil	The plan sets out an ambitious programme of work for the next three years, to help move towards a clearly stated vision for the nation's soils. The actions are often only the first, important step in the process. The aim for this first plan is to achieve as much as possible by properly embedding soils into ongoing work; to gather the evidence; and to build consensus and partnerships with others in Government and outside to provide the foundation for future action.
Safeguarding our Soils - A strategy for England, Defra (2009)	Soil	The Strategy recognises that soil is fundamental resource and sets out a 2030 vision for the sustainable management of soil where degradation threats are tackled successfully. It aims to improve the quality of England's soils and safeguard their ability to provide essential services for future generations.
Norfolk and Suffolk Broads Act 1988	Landscape	An Act to establish an authority to be known as the Broads Authority; to make provision with respect to its powers; to make provision with respect to the area commonly known as the Broads and with respect to the Great Yarmouth Port and Haven and its Commissioners; to provide for the making of grants to the Authority by the Secretary of State; and for connected purposes.
Diffuse Water Pollution Theme Plan	Water	Diffuse Water Pollution (DWP) refers to the accumulation of minor polluting sources that are individually quite insignificant, but when put together can have a significant impact on water quality. Approximately 63% of water dependent Natura 2000 sites are affected by this pollution, of which 93% identify diffuse water pollution, although it is often difficult to identify the source. The strategy for addressing DWP needs to be long-term and adaptable to a constantly developing evidence base, as well as being capable of incorporating new and improved mechanisms. The plans direct Natural England, the Environment Agency, and other stakeholders towards planning the ways in which they focus their efforts on Natura 2000 sites and the surrounding areas, to improve the efficiency and effectiveness of the management of issues in these sites. The plan outlines key issues for further action, as well as gaps in current mechanisms and approaches. There is no legal or political grounding in the plans, they just provide recommendations that help Natura 2000 sites attain their target conservation status.
Water Resources Act 1991	Water	The Act sets out the functions of National Rivers Authority (now the Environment Agency) and introduced water quality classifications and objectives for the first time.
Water Industry Act 1991	Water	The Act sets out the main powers and duties of the water and sewerage companies, thus replacing those set out in the Water Act 1989 and defined the powers of the Director General of Water Services (now the Water Services Regulation Authority (Ofwat)).
Water Act 2003 (as amended)	Water	The Act amends the Water Resources Act and Regulations 1991 and the Water Industry Act 1991. The Act has the following four broad aims: <ul style="list-style-type: none"> the sustainable use of water resources strengthening the voice of consumers a measured increase in competition the promotion of water conservation
Preparing for a drier future: England's water infrastructure needs, National Infrastructure Commission (2018)	Water	Sets out the National Infrastructure Commission's advice on how to address England's water supply challenges and deliver the appropriate level of resilience for the long term. It recognises that water shortages is a risk in England and that climate change alongside an increasing population A (especially in the drier south and east) and the need to protect the environment will result in further challenges.
Draft National Policy Statement for Water Resources Infrastructure, Defra (2018)	Water	The draft National Policy Statement for Water Resources Infrastructure (NPS) sets out the need and government's policies for the development of nationally significant infrastructure projects relevant to water resources in England. It is aligned with the goal of clean and plentiful water as set out in the UK Government's 25 Year Environment Plan and recognises that a twin track approach is required to secure resilient water supplies.
Water for Life White Paper, Defra (2011)	Water	This White Paper sets out a vision for future water management in which the water sector is resilient; water companies are more efficient and customer focused; and water is valued as the precious and finite resource it is. It explains that everyone has a part to play in the realisation of this vision. It sets out the principles and timetable for an overhaul of the abstraction regime, which governs how and when water can be taken from the environment for use by business, agriculture and the public; and explains how improved interconnections between water catchments will allow water to be moved more easily around the country to areas of need. It details Government policy on charging for water and providing help to those who struggle to afford their bills.
The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 (as amended)	Water	The Regulations transpose the EC WFD in UK law. They will help implement the WFD requirement in England and Wales. They aim to protect and enhance the quality of: <ul style="list-style-type: none"> Surface freshwater (including lakes, streams and rivers) Groundwaters Groundwater dependant ecosystems Estuaries Coastal waters out to one mile from low-water
Protect groundwater and prevent groundwater pollution, Environment Agency (2017)	Water	It aims to avoid negative impacts on groundwater sources including impacts of pollution by providing guidance on discharging or abstracting from groundwater sources.

Policy, Plan or Programme	Topic	Key objectives, guidance and references
Groundwater protection technical guidance, Environment Agency (2017)	Water	It aims to avoid negative effects on the quality and quantity of groundwater resources by providing guidance on the inputs of substances and pollutants to groundwater, discernibility of hazardous substances and when geological formations can be determined permanently unsuitable for other purposes.
The Environment Agency's approach to groundwater protection, Environment Agency (2018)	Water	These position statements describe the Environment Agency's approach to managing and protecting groundwater. They update Groundwater protection: principles and practice (GP3).
The Groundwater (England and Wales) Regulations 2009	Water	The Regulations transpose the EU Groundwater Directive (2006/118/EC) into UK law. The Regulations set out to protect groundwater from being polluted by hazardous substances.
Flood and Water Management Act 2010	Water	The Act seeks to address the threat of flooding and water scarcity. The Act takes forward a number of recommendations from the Pitt Review into the 2007 floods and places new responsibilities on the Environment Agency, local authorities and others to manage the risk of flooding. Climate projections suggest extreme weather will happen more frequently in the future and this Act is central to reducing the flood risk associated with extreme weather.
Restoring Sustainable Abstraction Programme (undated)	Water	<p>The RSA programme has successfully worked with licence holders to reduce the amount of water taken from the environment. It also works with them to prevent and reduce damage to the environment in other ways, such as by:</p> <ul style="list-style-type: none"> • Moving or swapping existing licensed abstractions (for example moving a larger abstraction downstream and a smaller one upstream) • Seeking alternative solutions that use water more efficiently and less harmfully • Ensuring only water that is needed is allowed to be taken. This prevents damage to the environment e.g. by removing risk to European designated Habitats Directive sites • Placing conditions on licences that allow water to be taken at times when it is least likely to harm the environment • Committing licence holders to reduce abstraction when there are alternative supplies • Working with other organisations and local groups to solve abstraction-related problems <p>Restoring physical processes for example through gravel management and habitat improvement</p>
Understanding the Risks, Empowering Communities, Building Resilience: The National Flood and Coastal Erosion Risk Management Strategy for England (2011)	Water	<p>The Strategy's overall aim is to: '...ensure that flooding and coastal erosion risks are well managed and coordinated, so that their impacts are minimised'. The Strategy was published by the Environment Agency and Defra to ensure that Government, the Environment Agency, local authorities, water companies, internal drainage boards and other organisations that have a role in flood and coastal erosion risk management (FCERM) understand each other's roles and co-ordinate how they manage these risks. The Strategy states that these organisations will work together with communities to:</p> <ul style="list-style-type: none"> • Manage the risk of flooding and coastal erosion to people and their property. Over time, the Government will be able, where possible, to improve standards of protection. • Help householders, businesses and communities better understand and manage the flood and coastal erosion risks they face • Respond better to flood incidents and during recovery, and to coastal erosion • Move the focus from national Government-funded activities towards a new approach that gives more power to local people, either at an individual, community or local authority level. Local innovations and solutions will be encouraged, too • Invest in actions that benefit communities who face the greatest risk, but who are least able to afford to help themselves <p>Put sustainability at the heart of the actions they take, so that they work with nature and benefit the environment, people and the economy</p>
UK Flood risk and coastal erosion management: Policy Statement (2020)	Water	<p>This policy statement sets out the Government's long-term ambition to create a nation more resilient to future flood and coastal erosion risk. This means to reduce the risk of harm to people, the environment, and the economy. This policy statement forms part of the Government's wider commitment to tackle climate change. It has been informed by the Environment Agency's consultation exercise on the updated National Flood and Coastal Erosion Risk Management Strategy, the results of the Government's Call of Evidence 2019, and advice from the National Infrastructure Commission and the Committee on Climate Change. The Policy Statement sets out 5 areas to drive this:</p> <ol style="list-style-type: none"> 1. Upgrading and expanding national flood defences 2. Managing the flow of water more effectively 3. Harnessing the power of nature to reduce flood and coastal erosion risk and achieve multiple benefits 4. Better preparing communities <p>Enabling more resilient places through a catchment-based approach</p>
Water Environment (Water Framework Directive) (England and Wales) Regulations (2003) Water Environment (Water Framework Directive) (England and Wales) Regulations (2017) Water Environment (Water Framework Directive) (England and Wales) Regulations (2021)	Water	<p>These Regulations make provision for the purpose of implementing in river basin districts within England and Wales EU Directive 2000/60/EC of the European Parliament and of the Council of 23rd October 2000 establishing a framework for Community action in the field of water policy known as the WFD. The Regulations transpose the EUC WFD in UK law. They will help implement the WFD requirement in England and Wales. They aim to protect and enhance the quality of:</p> <ul style="list-style-type: none"> • Surface freshwater (including lakes, streams, and rivers) • Groundwaters • Groundwater dependant ecosystems • Estuaries <p>Coastal waters out to one mile from low-water</p>

Policy, Plan or Programme	Topic	Key objectives, guidance and references
Living Waterways - Transform Places & Enrich Lives: Our 10 Year Strategy (2015)	Water	This Canal & River Trust strategy aims to transform 2,000 miles of historic waterways and make a difference to the communities they run through. And by transforming these waterways enrich the lives of those who interact with them.
National Flood and Coastal Erosion Risk Management Strategy for England, Environment Agency (2020)	Water, Climatic Factors, Population and Human Health	The Strategy sets out the long-term delivery objectives the nation should take over the next 10 to 30 years as well as shorter term, practical measures risk management authorities should take working with partners and communities. It includes the following long term vision: 'a nation ready for, and resilient to, flooding and coastal change – today, tomorrow and to the year 2100', and includes the following three long-term ambitions: <ul style="list-style-type: none"> • Climate resilient places • Today's growth and infrastructure resilient in tomorrow's climate • A nation ready to respond and adapt to flooding and coastal change
The Flood and Coastal Erosion Risk Management Policy Statement, Defra (2020)	Water, Climatic Factors, Population and Human Health	The Policy Statement sets out the long-term goal of the Government to create a nation which is resilient to future flood and coastal erosion, and therefore protects people, the environment and the economy. The National Flood and Coastal Erosion Strategy has helped to inform this policy statement. It identifies five key areas for action which include: <ul style="list-style-type: none"> • Upgrading and expanding our national flood defences and infrastructure • Managing the flow of water more effectively • Harnessing the power of nature to reduce flood and coastal erosion risk and • achieve multiple benefits • Better preparing our communities • Enabling more resilient places through a catchment-based approach
Flood risk assessments: climate change allowances, Environment Agency (2016)	Water, Climatic Factors	The guidance sets out how climate change should be accounted for when local authorities prepare strategic flood risk assessment as well as when developers and their agents when they prepare flood risk assessments for planning applications, and development consent orders for nationally significant infrastructure projects. The guidance provides allowances for anticipated change of the following and are aligned to each river basin in some cases: peak river flow; peak rainfall intensity; sea level rise; and offshore wind speed and extreme wave height.
The Water Resources Management Plan Regulations 2007	Water	The regulations set out the statutory duty for water companies to prepare and publish a WRMP.
Water Resources Planning Framework (2015-2065), Water UK (2016)	Water	The project aims to develop a high-level strategy and framework for the long-term management and planning of water resources in England and Wales. It identifies the challenges facing water resources including climate change, resilience to droughts and demand growth and presents options to mitigate the issues.
Water Supply (Water Quality) Regulations 2016 (as amended)	Water	The regulations consolidate legislation concerning the quality of water supplies for human consumption in England. They also apply in Wales where the water undertaker or licensee is primarily based in England.
National Policy Statement for Wastewater (2012)	Water	National Policy Statement (NPS) sets out Government policy for the provision of major wastewater infrastructure. It aims to make existing policy and practice clear and transparent in relation to nationally significant wastewater infrastructure.
Climate change approaches in water resources planning – Overview of new methods, Environment Agency (2013)	Water, Climatic Factors	The report explores different ways in which the possible impacts of climate change could be incorporated into Water Resource Management Plans (WRMPs) in England and Wales. A number of improvements are suggested, but not limited to: <ul style="list-style-type: none"> • Undertaking vulnerability assessments to evaluate Water Resource Zones (WRZs) vulnerability to current and future climate and using the outcomes to determine the level of modelling required to assess future impacts of climate change. • Alternative methods to scaling the impacts of climate change from the base year to the 2030s and beyond. • Headroom assessment should clearly distinguish between climate and non-climate risks and report outputs for specific reference levels of headroom.
Drought response: our framework for England, Environment Agency (2017)	Water, Climatic Factors	The document outlines the national framework for how drought is managed by the Environment Agency, the government and water companies to reduce the effects on the people, business and the environment. It sets out how drought affects different areas of England, who is involved in management drought and how those stakeholders, and how drought is managed, monitored and reported on.
Future Water: The Government's water strategy for England, Defra (2008)	Water	The Strategy sets Defra's vision for the water sector up to 2030 and outlines the steps they will implement to achieve that vision. Their vision is where rivers, canals, lakes and seas have improved for people and wildlife, with benefits for angling, boating and other recreational activities, and with continued provisions for excellent quality drinking water. It is structured around water supply and demand, water quality in the natural environment, surface water drainage, river and coastal flooding, greenhouse gas, water charging, the regulatory framework and innovation.
Water Resources Planning Guideline, Environment Agency (2016)	Water	This document provides guidance on the requirements and process for water resource planning through WRMPs to ensure resilient and sustainable water supplies. It is currently being updated and is out for public consultation until October 2020.

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The Urban Waste Water Treatment (England and Wales) Regulations 1994	Water	The Regulations transpose the EU Urban Waste Water Treatment Directive (91/271/EEC) and sets out to regulate the disposal of sewage.
The Nitrate Pollution Prevention Regulations 2015	Water	The Regulations transpose EU Nitrates Directive (91/676/EEC) into UK law and aim to reduce the pollution in the water environment from nitrates.
Managing Water Abstraction, Environment Agency (2016)	Water	Sets out how the Environment Agency manage water resources in England and outlines the technical, legal and policy requirements behind the abstraction licensing strategies.
Marine Plans – South East Inshore, South Inshore, South Offshore (Marine Management Organisation)	Water	<p>A marine plan:</p> <ul style="list-style-type: none"> • Sets out priorities and directions for future development within the plan area • Informs sustainable use of marine resources • Helps marine users understand the best locations for their activities, including where new developments may be appropriate. <p>Each of the 11 marine plan areas will have a marine plan with a long-term (20 years) view of activities and will be reviewed every three years. There will be ten marine plans as the North West will have a single plan following requests to have a single process and one plan for these areas.</p> <p>All marine plan areas are scheduled to have a plan by 2021.</p>
UK Marine Policy Statement (2011)	Water	The UK Marine Policy Statement (MPS) provides the policy framework for the marine planning system. It provides the context for marine plans. Marine plans put into practice the objectives for the marine environment that are identified in the MPS alongside the National Planning Policy Framework (NPPF) and the Localism Act 2011. Where there is no marine plan in place, the MPS sets the direction for decisions that affect the marine areas, such as granting licences for all public bodies.
Regional and Local		
Site Improvement Plans for Natura 2000 Sites, Natural England	Biodiversity, flora and fauna	<p>Site Improvement Plans (SIPs) have been developed for each Natura 2000 site in England as part of the Improvement Programme for England's Natura 2000 Sites (IPENS). Natura 2000 sites is the combined term for sites designated as Special Areas of Conservation (SAC) and Special Protected Areas (SPA). There are 12 SACs and 7 SPAs within the Essex & Suffolk Water supply region.</p> <p>The plan provides a high level overview of the issues (both current and predicted) affecting the condition of the Natura 2000 features on the site(s) and outlines the priority measures required to improve the condition of the features. It does not cover issues where remedial actions are already in place or ongoing management activities which are required for maintenance.</p>
Joint Norfolk and Suffolk County Council Natural Capital Assessment (2020)	Biodiversity, flora and fauna	The Natural Capital Assessment for Norfolk and Suffolk is a local assessment of the natural assets across the two counties and identifies risks to them, particularly in the context of climate change. It also recommends seven priority themes for action: Water; Land Management; Green House Gases; Carbon Sequestration; Habitats; Bio-security and Resilience.
Local Development Plans (Various)	Cross-cutting	<p>Local Development Plans or Core Strategies are the main framework for planning in a local authorities and set out the long-term spatial vision to guide sustainable development. They include policies on key area such as housing, transport, the natural environment, employment and economic development, carbon reduction and resources, amongst others.</p> <p>The following local authorities are within the Essex & Suffolk Water supply region:</p> <p>Watford District (B); Stevenage District (B); St. Albans District (B); Three Rivers District; Runnymede District (B); Harrow London Borough; Harlow District; Hertsmere District (B); Luton (B); Woking District (B); Hillingdon London Borough; Uttlesford District; North Hertfordshire District; Tendring District; Welwyn Hatfield District (B); East Hertfordshire District; Chiltern District; Barnet London Borough; Epping Forest District; Dacorum District (B); Spelthorne District (B); Folkestone and Hythe District; Surrey Heath District (B); Brent London Borough; South Bucks District; Ealing London Borough; Dover District; Guildford District (B); Elmbridge District (B); Bracknell Forest (B); Brentwood District (B); Hounslow London Borough; Windsor and Maidenhead (B); Central Bedfordshire; Slough (B); Canterbury District (B); Wycombe District; Colchester District (B); Enfield London Borough; Broxbourne District (B); Haringey London Borough; South Cambridgeshire District; Ashford District (B); Camden London Borough; Havering London Borough; Babergh District; Chelmsford District (B); Aylesbury Vale District; Redbridge London Borough; Braintree District; Rother District; and Mole Valley District.</p>
Public Rights of Way Improvement Plans (ROWIPs)	Cross-cutting	ROWIPs outline how local authorities aim to improve public rights of way within their local area in order to ensure improved accessibility, connectivity and quality of the network for all.
Local level Green Infrastructure Plans and Strategies	Cross-cutting	Green Infrastructure Strategies set out how local authorities will improve provision of and access to quality green spaces.
National Natural Capital Atlas: Mapping Indicators, Natural England (2020)	Cross-cutting	The state of the natural capital in England is outlined in this report through a series of maps and indicators to show the quality, quantity and location of natural assets as well as the ecosystem services that they provide. Quantity indicators are divided into eight broad habitat type categories including freshwater; farmland; grasslands; mountain, moor and heath; woodland; urban; coastal; and marine. Quality indicators are also split out into broad categories which cover vegetation; nutrient and chemical status; soil / sediment

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AONB Management Plans	Landscape	<p>process; species composition; vegetation; and cultural. These indicators are designed to inform decision making and to help to achieve the commitments set out in the 25 Year Plan, and also acts a baseline to measure change.</p> <p>The Management Plans summarise the key issues facing the AONBs and outline the management policies and actions required to conserve these areas. The following Plans are relevant to the Essex & Suffolk Water supply region:</p> <p>The Chilterns AONB Management Plan 2019-2024 – key issues for the site in relation to water include unsustainable abstraction; high levels of water use; modifications of water courses; poor ecological conditions in chalk streams; pollution; INNS; and the impacts of climate change.</p> <p>Kent Downs AONB Management Plan 2021-2026 - key issues for the site in relation to water include water quality; abstraction; climate change; nutrient pollution; and water stress.</p> <p>Dedham Vale AONB Management Plan 2016-2021 – the following have been identified as key pressures demand for agricultural, horticultural and recreational water supplies; loss of wildlife associated with riparian habitats; demand for potable water; loss of natural processes operating in the river system; requirement to improve ecological condition of catchment through the Water Framework Directive; recreational use of the river; Ely-Ouse to Essex water transfer scheme; INNS; and costs of maintaining river structures falling to landowners.</p> <p>Surrey Hills Area of Outstanding Natural Beauty Management Plan 2020-2025 – key issues for water include meeting WFD standards; wetland habitats; water quality; and flooding.</p>
National Character Area (NCA) Profiles, Natural England	Landscape	<p>The profiles for each outline the characteristics which are unique to that area and help to form distinctive sense of place. There are 15 NCAs within the ESW supply region which include:</p> <ul style="list-style-type: none"> • Suffolk Coast and Heaths • South Suffolk and North Essex Clayland • East Anglian Chalk • Bedfordshire and Cambridgeshire Claylands • Chilterns • Greater Thames • North Thames Basin • Inner London • Thames Basin Lowlands • Thames Valley • North Downs • Wealden Greensand • Low Weald • Romney Marshes • Thames Basin Heaths
River Basin Management Plans (RBMPs) (various)	Water	<p>Guidance for river basin planning function for the planning period from 2021 to 2027 with updates made in 2022. They set out expectations for the main steps and principles of the river basin planning process and the documents the Environment Agency must produce. The plans are the foundation for delivering the Government's 25 Year Environment Plan 'clean and plentiful water' goal.</p>
<p>Catchment Flood Management Plans :</p> <p>Anglian River Basin (2019)</p> <p>South East River Basin 2022)</p> <p>Thames River Basin (2009)</p>	Water	<p>CFMPs have been produced to assess inland flood risk across England and Wales. The CFMPs relevant to the WRMP are detailed in the column to the left. The CFMPs consider all types of inland flooding: from rivers, ground water, surface water and tidal flooding (but not coastal flooding, which is covered by Shoreline Management Plans. The role of the CFMPs is to establish flood risk management policies which will deliver sustainable flood risk management for the long term. CFMPs should be used to inform planning and decision making by key stakeholders such as the Environment Agency, local authorities, Internal Drainage Boards, water companies and other utilities; transportation planners; land owners, farmers and land managers; the public and businesses to enhance their understanding of flood risk and how it will be managed.</p> <p>The CFMPs identify six generic flood risk management policies:</p> <ul style="list-style-type: none"> • Policy 1- Areas of little or no flood risk where the EA will continue to monitor and advise: this policy will tend to be applied in those areas where there are very few properties at risk of flooding. It reflects a commitment to work with the natural flood processes as far as possible. • Policy 2 - Areas of low to moderate flood risk where the EA can generally reduce existing flood risk management actions: this policy will tend to be applied where the overall level of risk to people and property is low to moderate. • Policy 3 - Areas of low to moderate flood risk where the EA are generally managing existing flood risk effectively: this policy will tend to be applied where the risks are currently appropriately managed and where the risk of flooding is not expected to increase significantly in the future. • Policy 4 - Areas of low, moderate or high flood risk where the EA are already managing the flood risk effectively but where they may need to take further actions to keep pace with climate change: this policy will tend to be applied where the risks are currently deemed to be appropriately-managed, but where the risk of flooding is expected to significantly rise in the future. • Policy 5 - Areas of moderate to high flood risk where the EA can generally take further action to reduce flood risk: this policy will tend to be applied to those areas where the case for further action to reduce flood risk is most compelling, for example where there are many people at high risk, or where changes in the environment have already increased risk. • Policy 6 - Areas of low to moderate flood risk where the EA will take action with others to store water or manage run-off in: locations that provide overall flood risk reduction or environmental benefits. This policy will tend to be applied where there may be opportunities in some locations to reduce flood risk locally or more widely in a catchment by storing water or managing run-off.

Policy, Plan or Programme	Topic	Key objectives, guidance and references
Catchment Abstraction Management Strategies (CAMS) (2016)	Water	<p>To select the most appropriate policy, the CFMPs consider how the social, economic and environmental objectives are affected by flood risk management activities under each policy option. The policies identified in the CFMPs will be delivered through a range of delivery plans, projects and actions.</p> <p>The Catchment Abstraction Management Strategy (CAMS) set out how the EA will manage water abstraction. They outline where water is available, and also, if relevant, where the EA needs to reduce current rates of abstraction.</p> <p>Each CAMS provides an overview of the catchment area and characteristics, including abstractions, geology, hydrology, hydrometry, water quality and discharges, ecology and conservation, recreation and navigation.</p> <p>The CAMS make information on water resources and licensing practice publicly available and allow the balance between the needs of abstractors, other water users and the aquatic environment to be considered in consultation with the local community and interested parties.</p> <p>CAMS are also the mechanism for managing time limited licences by determining whether they should be renewed and, if so, on what terms.</p>
Chalk-Streams First: A Permanent and Sustainable Solution to the Chilterns Chalk-Streams Crisis, Various (2020)	Water	<p>Chalk Streams First has been developed by a coalition formed of The Angling Trust, The Rivers Trust, Salmon & Trout Conservation, The Wild Trout Trust and WWF UK. It is an approach which aims to re-naturalise flows in the Chilterns chalk streams given their international uniqueness. Abstraction from the Chilterns aquifer which feed the chalk-streams has had damaging effects , resulting in low and un-natural flows. The Chalk Streams First proposes:</p> <ul style="list-style-type: none"> • Groundwater abstraction from the Chilterns is stopped • Flow recovery is utilised to send water to existing surface water abstraction points within the Lower Lea and Thames as an alternatives, resulting in a 15% net loss in supply • The net 15% loss is recovered through strategic Essex & Suffolk Water and Thames Water proposals • "Supply 2040" is brought forward to "Supply 2030"
<p>Draft Flood Risk Management Plans (FRMPs) summary of consultation responses (2022)</p> <p>Anglian River Basin District</p> <p>South East River Basin District</p> <p>Thames River Basin District</p>	Water	<p>FRMPs are strategic plans outlining measures that could be taken to reduce flood risk in identified risk areas, for the 2021-2027 period. The draft FRMPs are:</p> <ul style="list-style-type: none"> • Accessible to stakeholders and the public; • Consistent with data available within the flood plan explorer showing proposed national and local measures; and • Supporting ambitions from the national flood and coastal erosion risk management strategy for England. • Consultation responses included: <ul style="list-style-type: none"> • The favouring of nature-based solutions, like natural flood management techniques; • Support of a partnership-based approach to flood risk management; • The desire for a catchment-based approach; • Concerns around the cost and source of funding required to implement plans; and • The importance of adaptability to climate change and a net zero carbon goal.
Meeting our Future Water Needs: a National Framework for Water Resources, Environment Agency (2020)	Water	<p>The Framework explores the long-term needs of all sectors that depend on a secure supply of water, taking into account the commitments set out in the UK Government's 25 Year Plan. It sets out the principles, expectations and challenges for the five regional groups which cover England's water supply in order to take a collaborative approach to address the current and future challenge of water resource planning. The importance of regional planning is paramount to address the following challenges:</p> <ul style="list-style-type: none"> • Resilience to drought • Greater environmental improvement • Reducing water use in the long-term • Leakage reduction • Reducing the use of drought permits and drought orders • Increasing supplies • Moving water to where it is needed
Long-term water resources environmental destination, Environment Agency (2020)	Water	<p>Regional water resources plans provide the opportunity to deliver an environmental destination for water resources where environmental issues related to water supply and demand are addressed in the long term. The document provides guidance for regional groups and water companies to help to integrate the long-term environmental water resources needs when developing their regional plans. It sets out a standard approach to allow for both consistency whilst allowing for flexibility depending on specific needs and issues. It sets out the following:</p> <ul style="list-style-type: none"> • What the environmental destination should look like: Enable environmental resilience and protection for water resources up to at least 2050 through a variety of actions. • Stages needed to propose a long-term environmental destination: Review national policy, use scenarios, engage with stakeholders, develop environmental destination and carry out testing. • Defining a long-term environmental destination: Use the scenarios from the National Framework to support and inform the destination development. • What a long-term environmental destination should include: Meet current regulatory requirements for abstraction and integrate future needs.

Policy, Plan or Programme	Topic	Key objectives, guidance and references
Water Resources Planning Guideline, Various (2021)	Water	<ul style="list-style-type: none"> • Actions to meet an environmental destination: Resilience to climate change, integrates stakeholder views, considers costs and scale, supports wider government ambitions, prioritises the most vulnerable and protected sites, integrates a catchment approach and nature based solutions, supports net gain principles, uses the best data and is not constrained by previous decisions. <p>The guidance also includes reference to how to carry out engagement, set milestones and outlines the governance for implementing a long-term environmental destination.</p>
WRSE Regional Plan, WRSE (pending 2022)	Water	<p>WRSE are currently developing a Regional Plan to secure resilient and sustainable water supplies for future generations through a collaborative, regional approach. The WRSE regional plan aims to take a long-term view to water resource planning across the region to 2100 in order to secure a sustainable and resilient water supply. The WRSE regional plan will seek to:</p> <ul style="list-style-type: none"> • Ensure there is enough water for a growing population and to support economic growth • Improve the environment by leaving more water in the region's rivers, streams and underground sources • Increase the region's resilience to severe drought and other extreme shocks and stresses • Address the impacts of climate change on demand for water and how much is available
Developing our 'Best Value' multi-sector regional resilience plan, a consultation on our objectives, value criteria and metrics, WRSE (2021)	Water	<p>The report sets out WRSE's proposed approach to identifying the 'Best Value' plan as part of the regional planning process. Given that 'Best Value' can mean different things to different people, the report aims to create a framework that will be used to assess the additional value delivered by water resource programmes. WRSE outline the following as objectives for the 'Best Value' Plan, each of which have associated criteria and metrics used to assess the various water resource programmes in their investment modelling:</p> <ul style="list-style-type: none"> • Deliver a secure and wholesome supply of water to customers and other users to 2100 • Be deliverable at a cost that is acceptable to customers • Deliver long-term environmental improvement and social benefits • Increase the resilience of the region's water systems • A set of regional policies have also been developed to be delivered through the Regional Plan, some of which are regulatory requirements, however the following at within WRSE's discretion: • No use of drought orders and permits that cause unnecessary harm* to the environment by 2040 and identification of those that could be considered as an option within the regional plan • A common level of service for customer temporary use bans across the six companies that operate in our region • A provision of water to support those with private water supplies during droughts to overcome public health and animal welfare concerns by 2050 • Only import transfers of water that meet at least the same standards as our regional plan, for example environmental standards
WRSE Regional Plan Environmental Assessment Methodology, WRSE and Mott MacDonald (2020)	Water	<p>The guidance sets out the methodology for the environmental appraisal of the WRSE Regional Plan and provides a framework for WRMP24 development. It aligns with Environment Agency guidance and takes an integrated approach for SEA, Habitats Regulation Assessment (HRA), Water Framework Directive (WFD), Biodiversity Net Gain (BNG) and Natural Capital (NC). The environmental assessment methodology is structured around the following key stages:</p> <ul style="list-style-type: none"> • Scoping – sets out the process for SEA Scoping to outline the context, scope and methodology for the SEA assessment. SEA, HRA and WFD datasets as well as regional priorities and environmental ambition feed into this stage. • Assessment – two stage assessment process proposed (high level screening and detailed assessment). High level screening to be undertaken on the constrained options list and scored using a red, amber green (RAG) approach with "Red" options flagged for rejection or mitigation. The detailed assessment to include SEA, HRA, WFD and NC assessments and the methodology outlines the approach for each. From the detailed assessments, SEA, NC and BNG metrics are to be developed for the multi-criteria optimisation approach as part of the investment modelling and programme appraisal stage of the Regional Plan. • Reporting and Consultation – presents the process of reporting the environmental appraisal for consultation.
WRSE Regional Plan SEA Scoping Report, WRSE and Mott MacDonald (2020)	Water	<p>The SEA Scoping Report sets out the context of the Regional Plan, the environmental baseline and scope of the SEA process alongside the methodology for undertaking the SEA. The Regional Plan is not a statutory plan and SEA is not legally required, however, to ensure sustainability is integrated into the Plan, WRSE wishes to undertake a legally compliant SEA. All SEA topics (biodiversity, flora and fauna; water; soil; air; climatic factors; population, communities and human health; historic environment; landscape; and material assets) have been scoped into the SEA. The SEA framework sets out the SEA objectives and criteria which the resource options will be assessed against.</p>
WRSE Natural Capital and Biodiversity Net Gain Method Statement, WRSE and Mott MacDonald (2020)	Water	<p>The Method Statement provides a review of the environmental and natural capital elements of the new draft water resources planning guidance and its alignment to the scope and proposed approach to environmental assessment for the WRSE Regional Plan. The Statement outlines that BNG will be incorporated within the assessment of different programmes to ensure there is net biodiversity gain across any implemented plan. Mott MacDonald has suggested developing a biodiversity baseline from spatial data sets of habitat inventories, which can then be used to calculate BNG change through land use of each option. This is recommended as a suitable methodology within the new guidance and will allow for the individual companies to utilise work from the regional plan within the development of their WRMPs. NC metrics will also be developed for integration within the multi-criteria optimisation process.</p>

Policy, Plan or Programme	Topic	Key objectives, guidance and references
WRE Regional Plan, WRE (pending 2022)	Water	<p>WRE are developing a Regional Plan to increase resilience of water resources for all users across the region, to ensure water resources do not pose a barrier to economic growth and to enhance the environment. The Plan will take a long-term view to 2100 and aims to balance the needs of each sector, ensuring that there is enough water for the environment and allows long-term uncertainty and risk to managed; both for water supply systems, as well as for the natural systems on which all abstractors depend. WRE covers the following water companies: Essex & Suffolk Water (Brett resource zone); Anglian Water; Cambridge Water (part of South Staffordshire Water); Essex & Suffolk Water (part of Northumbrian Water); and Severn Trent (Nottinghamshire and Rutland resource zones).</p>
WRE Regional Plan Method Statement, WRE (2020)	Water	<p>The Method Statement sets out how WRE will produce their Regional Plan in line with the National Framework. A collaborative approach will be taken where WRE will work with planners and representatives from sectors and organisations across the region, developing the Plan through engagement, co-creation and collective decision making. There are two inter-related multi-sector elements within the WRE Regional Plan which includes:</p> <ul style="list-style-type: none"> • Strategic, regional scale planning which will include a combination of multi-objective robust decision making (MO-RDM), systematic conservation planning (SCP), and least cost optimisation based on the Economics of Balancing Supply and Demand (EBSO) • Sub-regional, including catchment scale, planning <p>The Plan aims to make the responsibility of each sector clear in terms of the financing and delivery of schemes which include those specifically for water companies to be incorporated within their WRMPs as well as strategies, plans or schemes which need to be delivered by others.</p>
WRE Draft Integrated Environmental Assessment Scoping Report, WRW (2021)	Water	<p>An Integrated Environmental Assessment (IEA) is being undertaken to support the development of the WRE Regional Plan. The IEA will include SEA, HRA, WFD, BNG, NC and INNS assessments. The IEA encompasses an overarching SEA with the other assessments contributing to it. The Scoping Reports sets out the context and scope of the IEA with a focus on SEA. All topics are scoped into the SEA assessment and the report outlines the SEA framework and the assessment criteria which will be used to assess the options presented within the Regional Plan. The following approach is proposed to determine the environmental effects of the options and alternatives programmes:</p> <ul style="list-style-type: none"> • A high-level environmental screening assessment • Detailed options-level assessment (including SEA, HRA, WFD, Natural Capital, BNG, and INNS assessments) • Programme Appraisal, including cumulative and in-combination effects for SEA, HRA, WFD, Natural Capital, BNG, and INNS.
Water Resources West Regional Plan, WRW (pending 2023)	Water	<p>The WRW Regional Plan covers catchment areas in the north-west of England, the Midlands and the cross-border catchments with Wales. The aim is to build a long-term, multi-sector adaptive plan that reflects the needs and characteristics of their diverse region. The Plan will cover the period from 2025 to 2085 with a final version published in 2023. The Plan will be shaped by the following regional ambitions:</p> <ul style="list-style-type: none"> • Sustainable water supplies, meeting wider societal needs for wellbeing • Continued environmental improvement for sustainable water resources • Resilience to extreme droughts in a changing climate · Water available to support economic growth across multiple sectors • Ambitious water demand management • Exploring water transfers to bring investment and multiple benefits to the region • Cost-effective plans, identified through innovation and co-operation, so solutions are affordable
Forward programme 2021-22, RAPID (2021)	Water	<p>The Regulator's Alliance for Progressing Infrastructure Development (RAPID) is a partnership formed of Ofwat, the Environment Agency and the Drinking Water Inspectorate with Natural Resources Wales involved in an advisory capacity for Welsh schemes. To achieve the vision for high quality, resilient and environmentally beneficial water resources which meet customer needs, Strategic Resource Options (SROs) are required and involve collaboration and complex arrangements between water companies and regions. Funding was allocated to water companies to develop these SRO infrastructure supply solutions and RAPID were established to support their development. RAPID undertakes the following roles:</p> <ul style="list-style-type: none"> • Gated process: The first role of RAPID is to provide oversight to the gated process which has been developed to ensure SROs are on track and meet needs in a cost and environmentally efficient way. Gate 1 submission has already taken place with Gate 2 due to complete in October 2022. • Water Resources National Framework: RAPID acts as an enabler for the National Framework, supporting the co-ordination of the five regional groups and helping to shape regional plans. • Regulatory and commercial framework: Thirdly, RAPID are developing the regulatory and commercial framework to support the timely delivery of water resources infrastructure. <p>For the period 2021-2022, RAPID have identified the following five key delivery areas: developing a positive culture and driving performance; providing effective oversight of the strategic solutions engaging people and organisations; achieving effective long-term water resources resilience; and exploring and addressing regulatory and commercial opportunities, gaps and barriers.</p>
Draft South East Marine Plan, Marine Management Organisation (2020)	Water	<p>The south east inshore marine plan area stretches from Felixstowe in Suffolk to near Folkestone in Kent, covering approximately 1,400 kilometres of coastline, taking in a total of approximately 3,900 square kilometres of sea. The French marine area, east inshore and offshore marine plan areas and the south inshore marine plan area border the south east inshore marine plan area. The area overlaps with 42 local authorities and three Areas of Outstanding Natural Beauty. The River Thames has a large influence on the south east inshore marine plan area.</p>

Policy, Plan or Programme	Topic	Key objectives, guidance and references
		<p>The Plan sets out specific policy areas which include, but not limited to, co-existence, aquaculture, water quality, climate change, fisheries, marine litter, biodiversity, and net gain and natural capital. There are three key objectives, each of which have further aims associated with them:</p> <ul style="list-style-type: none"> Achieving a sustainable marine economy Ensuring a strong, healthy and just society Living within environmental limits
Suffolk Local Transport Plan 2011-2031 (2011)	Material Assets	<p>This is Suffolk County Council's third local transport plan and the key ambition is to support the local economy, attract world class businesses, and support and develop the local workforce, in the context of a shift towards a low carbon economy. There are four key priorities set out in the LTP each of which have transport aims which sit alongside them:</p> <ul style="list-style-type: none"> A prosperous and vibrant economy Creating the greenest county Safe, healthy and inclusive communities (Protect vulnerable people and reduce inequalities) <p>Learning and skills for the future (Transform learning and skills)</p>
Anglian Water Revised Draft WRMP24 (2023)	Water	<p>The revised draft WRMP24 includes consultation documents that were made available to regulators, statutory consultees, stakeholders and the public between December 2022 and March 2023. The WRMP24 takes a 25 year view over the period 2025 to 2050 to address challenges around climate change and drought resilience, population and economic growth and environmental protection and improvement.</p> <p>To manage the demand for water, the following options are identified:</p> <ul style="list-style-type: none"> Adopting and installing different metering technologies Develop a comprehensive demand management programme <p>The supply side options are made up of a mix of the following:</p> <ul style="list-style-type: none"> Raw water storage reservoir New transfers Desalination Water re-use Backwash recovery
Affinity Water Draft WRMP24 (due 2024)	Water	<p>The revised draft WRMP24 sets out a roadmap for Affinity Water to deliver reliable, resilient, sustainable, efficient and affordable water supply to their customers between 2025 and 2075. A key challenge for the Affinity Water region is that it operates in a supply area which is uniquely home to 10% of all globally rare chalk streams. There is sufficient water to serve customers now, however they cannot continue to abstract water from boreholes near these rare habitats in the longer term therefore they need to reduce abstraction from chalk groundwater sources. Alongside climate change and population growth, there are key challenges across the water supply region.</p> <p>To manage the demand for water, the following options are identified:</p> <ul style="list-style-type: none"> Adopting and installing different metering technologies Helping customers to reduce their water consumption Working with business customers and retailers to reduce their water consumption Government interventions to reduce water consumption such as white goods labelling and building regulations for new builds Considering temporary options to reduce water usage in times of significant drought <p>The supply side options are made up of a mix of the following:</p> <ul style="list-style-type: none"> Groundwater options such as new boreholes New treatment works Desalination Surface water options such as new reservoirs Water recycling options Bespoke options such as licence relocation Transfers within the Affinity Water region and between other companies in the south east region Third party licence transfers and trading Connections and upgrades in the network
Thames Water Revised Draft WRMP24 (2023)	Water	<p>Thames Water's draft WMRP24 replaces the previous version and covers the period from 2025 to 2075, taking a long-term view with a 50-year planning period to take into account the challenges and risks faced in relation to future water supply. The key challenges include: population growth, climate change, increasing risk of drought and environmental pressures. Thames Water aim to tackle demand through both demand reduction solutions and water supply solutions.</p> <p>The demand reduction solutions include:</p>

Policy, Plan or Programme	Topic	Key objectives, guidance and references
		<ul style="list-style-type: none"> • Tackling leaks • Helping their customers save water • Working in partnership with the Government, other sectors and wider society <p>The water supply solutions include:</p> <ul style="list-style-type: none"> • Water recycling • Water transfers • Desalination • Reservoirs • Groundwater storage through Aquifer Storage and Recovery (ASR) • Sharing water across the south east
Anglian Drainage and Wastewater Management Plan (DWMP) (2023)	Water	Anglian Water's first DWMP and builds on the Water Recycling Long Term Plan published in 2018. The DWMP covers the period 2025-2050 and sets out how Anglian Water will manage and recycle water in their region over this time period, understanding the pressures and challenges faced such as population growth and climate change. It sets out how wastewater systems and the drainage networks can be maintained, extended and improved to make sure they're robust and resilient to future pressures. There are three key themes of risks which are identified: escape from sewers, WRC capacity and environment and wellbeing
Water Resources South East (WRSE) Regional Plan (2023)	Water	<p>Updated version of the draft regional plan that was published for consultation in November 2022. WRSE Regional Plan looks ahead to 2075 and addresses the water resources planning challenges faced to:</p> <ul style="list-style-type: none"> • Ensure there is enough water for a growing population and to support economic growth • Improve the environment by leaving more water in the region's rivers, streams and underground sources • Increase the region's resilience to severe drought and other extreme shocks and stresses <p>The water supply solutions include:</p> <ul style="list-style-type: none"> • Reservoirs • Water transfers • Water recycling • Groundwater schemes across the region to store extra water
Essex & Suffolk Water		
Environment Strategy (2021)	Cross-cutting	The strategy sets out guidance on overall assets and operations management to avoid environmental effects. It includes guidance on interactions with the water environment to protect and improve rivers and beaches within the region and the overall environmental conditions.
Biodiversity Strategy (2021)	Biodiversity, flora and fauna	This strategy supports the Government's national framework on biodiversity (July 2012) and uses an identified list of priority habitats and species called the Section 41 lists. The Section 41 lists are part of the Natural Environment and Rural Communities Act which upholds all water and sewerage companies to maintain, and where possible, enhance biodiversity on their landholdings. This strategy allows for engagement with local environmental partners in the region to deliver site management work and enhancement schemes.
Pollution Incident Reduction Plan (2020)	Water	The purpose of this plan for 2020-25 is to set out guidance for reducing pollutions and meeting the zero pollutions goal as a result of assets and operations. The plan considers expectations from varied stakeholders (the government, regulators, customers, environmental NGO's and the customer challenge group) with the objectives to maintain an industry-leading pollution performance; and reduce the number of pollution incidents from wastewater and water operations. This plan further includes proven business-as-usual activities and interventions and highlights transformative programmes to maintain and improve overall performance.
Drought Plan (2022)	Water	The purpose of this plan is to identify how future droughts in the region will be managed; what measures are available to reduce demand and support supplies; what triggers can be used to identify when actions are required and communication strategies with customers during a drought. It identifies and advises on 4 levels of water restrictions; maps out the drought management process in 7 stages; highlights the order of drought implementations actions in 4 levels and summarizes extreme drought measures as detailed actions.
PR19 Business Plan (2020)	Cross-cutting	<p>This plan is structured across six key themes as identified during the consultation process with stakeholders. The purpose of this plan is to provide guidance on the detailed goals and innovations needed in each theme to deliver set out objectives and aims. The themes include:</p> <ul style="list-style-type: none"> • Unrivalled Customer Experience - delivering a package of measures to support an unrivalled customer experience. • Affordable and Inclusive services - ensuring water and sewerage services remain affordable for all customers. • Reliable and Resilient services - anticipating change in services, plan and make correct long-term decisions. • Leading in Innovation - keeping updated with innovative solutions through technological advances and changing political and physical climates. • Improving the Environment - creating a step change in environmental activities with an aim to demonstrate leadership and improve the environment within the region. • Building successful economies in the regions - demonstrating leadership and wider contributions to life within the region.

Policy, Plan or Programme	Topic	Key objectives, guidance and references
Safety, Health and Environment (SHE) Statement (2020)	Cross-cutting	This statement highlights the overall ethical responsibility of the company by setting out clear directions on safety, health and the environment. It reflects the company safety direction, legislative and regulatory requirements which will be under a continuous review, with any significant changes identified and the policy updated to reflect the same.
Emission Possible Plan to achieve net zero by 2027 (2021)	Climatic Factors	The purpose of this plan is to identify the progress by the company so far regarding reduction of carbon emissions from 303,000 tonnes in 2008 to 56,000 tonnes in 2020 as well as the plan to hit the target of zero emissions by 2027. This plan recognizes the urgency and priorities for interventions needed to reach net zero emissions and provides information on possible solutions for the same: Fossil fuel reductions, Natural Gas Reductions, fuel change in operational vehicles, using renewables, managing offsets and implementing innovation strategies throughout the company.
Essex and Suffolk Drainage and Wastewater Management Plan (in draft, expected publication 2022)	Water	This plan will cover the period between 2020-2050 and is to be framed by the Strategic Direction Statement. The plan will place emphasis on strong co-creation to ensure the plan joins up the approach and considers all risks from growth, climate change and customer behaviours.
Leakage Target (2020)	Water	This report identifies the use of space satellites, drones and the public support (through the Leakage Portal) to reduce water leakage throughout the network with an aim to reduce water leakage by 17.5% by 2025.
Water Environment Improvements / Blue spaces Scheme (2021)	Water	This scheme identifies, develops and includes water environment improvement projects throughout the network worth a £1 million for the period of 2020-25. It includes an anticipated overall 250km water environment improvement in areas that can be accessed and enjoyed for their water and wildlife, and the associated health and wellbeing benefits.

D. Baseline Review and Baseline Maps

D.1 Introduction

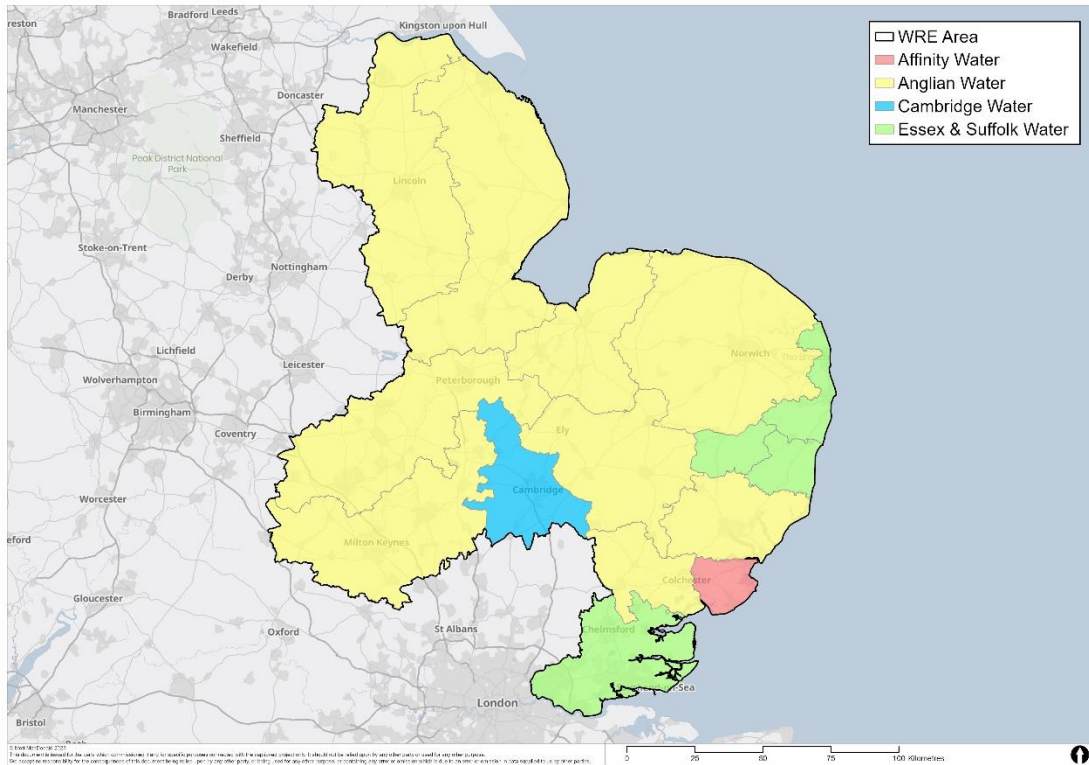
D.1.1 Current baseline information for the environment and socio-economics was reviewed for the Essex & Suffolk Water (ESW) WRMP24 area. The baseline was collected from published sources as referenced in the text and is summarised in the sections below. The baseline information forms an evidence base against which environmental issues or opportunities resulting from the WRMP24 can be predicted and assessed. The baseline information is presented under the SEA Regulations topics:

- Biodiversity, flora, and fauna
- Water
- Soil
- Air
- Climatic factors
- Population and human health
- Historic environment
- Landscape
- Material assets

D.1.2 It should be noted the ESW WRMP24 covers a substantial geographical area and water is transported into the supply area from throughout the WRE Region. Therefore, the baseline is currently a high-level review of conditions within the ESW region and, where relevant, the WRE region (Map D.1) and therefore extending to a wider area rather than being solely location specific. For example, there are potential effects both from the transfer of water outside the supply area or from options close to the plan boundary with potential pathways affecting receptors outside the supply area. The baseline GIS developed to facilitate undertaking the assessments and reporting will include a buffer so that additional receptors (such as designated sites) and potential pathways are captured and can be included in the assessments. For specific options assessments an approach more accurate than using a buffer has been applied. For example, for WFD and HRA assessments, hydrological links have been considered. Appendix D.19 contains maps, one of which shows surface water catchments that could potentially be affected and that fall either partially, or wholly outside the WRE region and the Essex and Suffolk Water supply area. These include the:

- Bure
- Chelmer
- Ely Ouse
- King George
- Stour
- Waveney

Map D.1: WRE Region Map



Source: Mott MacDonald, 2023

D.2 Biodiversity, Flora, and Fauna

Designated Sites

D.2.1 The ESW region contains numerous Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Local Nature Reserves (LNR), Marine Protected Areas (MPA) and Marine Conservation Zones (MCZ). The number and type of terrestrial ecological sites across the ESW region is presented in Table D.5 and Table D.6. Should plan options be proposed that have the potential to impact Marine Sites or freshwater dependent terrestrial ecosystems the baseline will be extended will be assessed within the SEA.

Table D.5: Ecological sites in the ESW Region

Designated Site	Total Number
SAC	20
SPA	37
Ramsar	30
SSSI	150
NNR	67
LNR	69
MPA	
MCZ	2

D.2.2 Under the Natural Environment and Rural Communities (NERC) Act 2006, ESW has a duty to have regard to the conservation of biodiversity in exercising its function. The duties relate to habitats and species of principal importance, some which may be designed Local Wildlife Sites (LWS).

D.2.3 Priority habitats make up 11.6% of the ESW region equating to a total of 33,347ha . Deciduous woodland accounts for the highest percentage of priority habitat in the region. The split of priority habitats by type across the region is shown in Table D.6.

Table D.6: Priority habitats in the ESW region

Priority Habitat Type	Hectares (ha)	Percentage
Coastal and floodplain grazing marsh	11,800	4.06%
Coastal saltmarsh	1,972	0.68%
Coastal sand dunes	136.8	0.05%
Coastal vegetated shingle	48	0.02%
Deciduous woodland	12,570	4.33%
Good quality semi-improved grassland	945	0.33%
Lowland calcareous grassland	42	0.01%
Lowland dry acid grassland	342	0.12%
Lowland fens	3.38	0.12%
Lowland heathland	869	0.30%
Lowland meadows	167	0.06%
Maritime cliff and slope	66	0.02%
Mudflats	660	0.23%
No main habitat but additional habitats present	2,956	1.02%
Purple moor grass and rush pastures	150	0.05%
Reedbeds	550	0.19%
Saline lagoons	68	0.02%
Traditional orchard	1.8	0.06%

D.2.4 There are approximately 2,000 invasive non-native species (INNS) in the UK, and approximately 10-15% of these cause significant social, environmental, or economic impacts, costing the UK an estimated £1.7 Billion a year.²

D.2.5 Species of particular concern for ESW highlighted in their biodiversity programme include:

- Killer shrimp (*Dikerogammarus villosus*)
- Demon shrimp (*Dikerogammarus haemobaphes*)
- Quagga mussel (*Dreissena rostriformis*)
- North American signal crayfish (*Pacifastacus leniusculus*)
- Japanese knotweed (*Fallopia japonica*)
- Himalayan balsam (*Impatiens glandulifera*)
- Giant hogweed (*Heracleum mantegazzianum*)
- Floating pennywort (*Hydrocotyle ranunculoides*)

² DEFRA (2015). The Great Britain Invasive Non-native Species Strategy Available at: [The Great Britain Invasive Non-native Species Strategy August 2015 \(gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/474222/gb_invasive_species_strategy_2015.pdf)

- New Zealand pigmy weed (*Crassula helmsii*)

D.3 Water

- D.3.1 The ESW supply region is one of the driest areas in the UK and is classed as an area with serious water stress. The anticipated population and economic growth alongside the projected changes in climate will likely continue to place additional stress on water availability and the natural environment within the ESW supply region. The ESW supply region also has a number of nationally and internationally important wetlands and other water-dependent habitats. Therefore, the management of water resources is particularly important.
- D.3.2 The main rivers in ESW supply region are shown in Appendix D.19. There are two river basin districts (RBD) within the ESW supply region; Thames and Anglian. Most of the ESW supply area falls within the Anglian RBD, with a small area in the extreme west, predominantly the river Lea catchment, falling within the Thames RBD.
- D.3.3 There are sections of the Stour and Ely Ouse surface water catchments that fall outside of the ESW supply area - as does the King George surface water catchment. It is not yet known if there are options that could impact areas not in the current baseline. If any proposed plan options emerge that could potentially have impacts in these catchments the baseline will be extended and assessment of these options will be assessed within the SEA.
- D.3.4 The Anglian RBD covers an area of 27,900km² and extends from Lincolnshire in the north to Essex in the south and from Northamptonshire in the west to the east Anglian coast as shown in **Map D.1**. The Essex and Suffolk supply area intersects six of the management catchments in the Anglian RBD and four in the Thames RBD.
- D.3.5 The Thames RBD covers an area of 16,200km² and includes 17 management catchments which range from chalk streams and aquifers to tidal and coastal marshes.
- D.3.6 The number of water bodies in the ESW supply region within Thames River RBD and Anglian RBD is presented in Table D.7.

Table D.7: Number of water bodies in the ESW supply region

Water body categories	Thames RBD	Anglian RBD	Total
Rivers and surface water	11	71	82
Lake	0	7	7
Coastal	1	7	8
Transitional	3	5	8
Groundwater	3	4	7
Canal	0	0	0
Total	18	94	112

- D.3.7 The WFD indicator of the health of the water environment is whether a water body is at good status or potential. This is an assessment of a range of quality elements relating to the biology and chemical quality of surface waters and quantitative and chemical quality of groundwater. To achieve good ecological status or potential, good chemical status or good groundwater status, every single element assessed must be at good status or better. If one element is marginally below its threshold for good status, then the whole water body's status is classed as less than good. Table D.8 and Table D.9 summarise the current status of surface and groundwater water bodies in the ESW supply region within the two RBDs.

Table D.8: 2019 classification for surface water bodies in the ESW supply region

River basin district	Ecological status or potential					Chemical status	
	Bad	Poor	Moderate	Good	High	Fail	Good
Thames RBD	0	0	14	1	0	0	1
Anglian RBD	2	16	66	6	0	0	6

Table D.9: WFD quantitative and chemical 2019 classification for groundwater water bodies in the ESW supply region

River basin district	Quantitative status		Chemical status	
	Poor	Good	Poor	Good
Thames RBD	2	1	2	1
Anglian RBD	3	1	4	0

D.3.8 The RBMPs for the Thames and Anglian RBDs highlight significant water management issues which prevent the sustainable management of water within the entirety of each river basin, as presented in Table D.10. Within the Anglian RBD, pollution from rural areas, pollution from wastewater and pollution from towns, cities, and transport, as well as physical modifications, affect the highest proportions of water bodies. Within the Thames RBD, physical modifications, pollution from towns, cities and transport and pollution from wastewater affect the highest proportions of water bodies.

Table D.10: Water management issues

Water Management Issue	Percentage of water bodies affected	
	Thames RBD	Anglian RBD
Pollution from rural areas	28%	74%
Pollution from towns, cities, and transport	61%	41%
Pollution from wastewater	39%	59%
Physical modifications	72%	41%
Pollution from abandoned mines	6%	0%
Non-native invasive species	6%	3%
Changes to the natural flow and levels of water	11%	16%

D.4 Flood risk

D.4.1 Within the ESW region, the risk of flooding comes from a variety of sources which include coastal waters, watercourses, surface water, groundwater, and reservoirs. The projected changes in climate presented in Section D.8. Climatic factors are likely to increase the frequency of extreme weather events, which combined with projected increases in sea level will further impact flood risk across the region, with nearly 30% of the land mass already below sea level.

D.4.2 The Anglian river basin district has over 55,000 residents who are at high risk of flooding from rivers and the sea, with over 65,000 also at risk from surface water flooding. There is one primary flood risk area within the river basin district, South Essex flood risk area, which has been assessed as having a significant local flood risk.

D.4.3 The whole Thames river basin district has over 227,000 people at high risk of surface water flooding and over 107,000 people are at high risk of flooding from rivers and the sea . There is one flood risk area, South Essex, which is partially within the WRE region.

D.5 Covid-19 Impacts on Water Demand

D.5.1 The research and data that has been collated for this report all indicate that demand and per capita consumption (PCC) have been impacted by the effect of the Covid-19 pandemic. Namely that household demand has increased, and non-household demand has decreased, with overall total demand increasing. It is encouraging that figures from multiple sources are similar and by combining all the data that have investigated the effect of Covid-19 alone on demand (excluding weather) the impact can be summarised as:

- Total Demand: A 2-5% increase of total demand (excluding weather) with times of peak demands increasing by 20-40% (this includes weather).
- PCC: A 3-15% increase in average PCC (excluding weather); with times of peak demand increasing by around 20-40% (this includes weather).
- Non household demand: A decrease of 25-50%.
- Using more water at home: This ranges between a 15-55% increases in water use in the home as perceived by customers. This tallies up to what was actually seen from the demand data.
- Working from home: Pre-Covid 5-15% of customers were working from home and during 2020 this has increased to 20-45%.

D.5.2 The impact of the Covid-19 pandemic will continue to affect PCC and Demand in the next few years and could potentially cause permanent changes to demand and PCC henceforward. From modelled data the PCC increase is estimated to reduce to between 2-3% by 2025 compared to an estimated 4-5% for 2021/22. These estimates give an idea of how consumption will vary for the remainder of the AMP regarding the effect of Covid-19.

D.5.3 ESW's long-term goal is to reach a PCC of 118 litres per person per day by 2040. Pre-covid, we reported a NWG PCC for 2019/20 of 148.86. Current reported NWG PCC (2020/21) is 165.66.

D.6 Soil

D.6.1 The WRE region is a hub for agriculture with cereal and livestock grazing being the predominant type of farming . Agricultural land is classified on a scale of 1 to 5 where 1 is the highest quality and 5 is the lowest. The agricultural land classification of the region is predominately of Grade 2 and Grade 3 with pockets of urban and non-agricultural land as shown in Appendix D.19. There are significant areas with Grade 1, particularly around north Cambridgeshire and South Lincolnshire.

D.6.2 The east of England has a significant number of landfill sites. Currently, there are approximately 51 authorised landfill sites across the ESW region.

D.7 Air

D.7.1 Air quality in the ESW supply region is varied and there are certain areas with higher concentrations of air pollutants likely to be associated with urbanisation, transport or business activities. Air Quality Management Areas (AQMA) are declared where the national air quality objectives are not being met³. A high proportion of the local authorities which fall within the ESW supply region contain at least one AQMA and are predominately designated for Nitrogen dioxide

³ Defra National Air Quality Objectives. Available at: https://uk-air.defra.gov.uk/assets/documents/National_air_quality_objectives.pdf

(NO₂) and Particulate Matter (PM₁₀)⁴. There is a total of 31 AQMAs in the Essex & Suffolk supply area.

D.8 Climatic Factors

D.8.1

Current observations indicate that the UK is continuing to warm. In 2019, four new temperature records were set, including a high of 38.7°C and a new winter record of 21.2°C⁵. The decade between 2010 and 2019 has been on average 0.3°C warmer than the 1981-2010 average and 0.9°C warmer than 1961-1990. Annual precipitation has increased across the UK in the last few decades with 2019 seeing 107% more rainfall than the 1981-2010 average⁶. Chart D.1 and Chart D.2 below provide rainfall information for the Essex & Suffolk region in 2020 and 2021. Summers have been 11% wetter on average than 1981-2010 and 13% wetter than 1961-1990. Winters have been 4% and 12% wetter than 1981-2010 and 1961-1990 respectively.

Chart D.1: Barsham WTW Monthly Rainfall Totals (2020-2021)

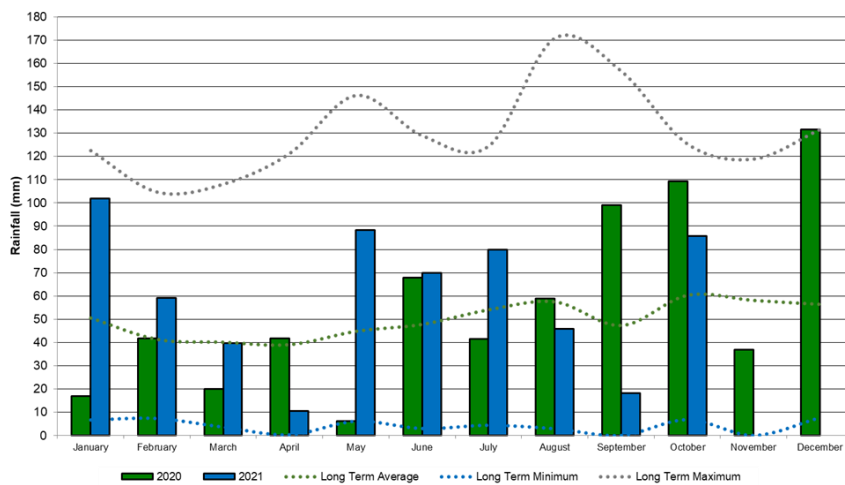
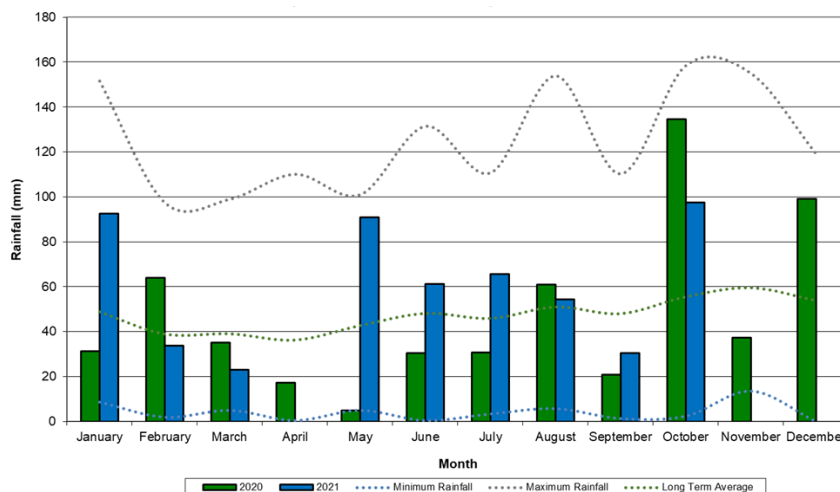


Chart D.2: Layer-de-la-Haye WTW Monthly Rainfall Totals (2020-2021)



⁴ Defra List of Local Authorities with AQMAs. Available at: <https://uk-air.defra.gov.uk/aqma/list>

⁵ RMetS (2020). State of the UK Climate. Available at: <https://rmets.onlinelibrary.wiley.com/doi/epdf/10.1002/joc.6726>

⁶ RMetS (2020). State of the UK Climate.

D.8.2 The Met Office UK Climate Projections (UKCP) were updated for the first time since 2009 in December 2018 (UKCP18), and again in July 2021⁷. The UKCP18 are largely the same as the previous projections where all areas of the UK are projected to be warmer, particularly during summer months. Rainfall is projected to vary seasonally and at a regional scale, however the UK is projected to have wetter winters and drier summers. The projected changes in temperature and precipitation for the south east of England by the 2050s (2040-2069), under the RCP8.5 scenario (high emissions scenario) are detailed in Table D.11. The 1981-2010 baseline period and the central estimate, representing ‘as likely as not’ probability of change (50th percentile), was used for the following projections. Climate change allowances for peak river flow were updated in 2019.

Table D.11: Climate projections by the 2050s under the RCP8.5 scenario

Climatic Factor	Climate Projections
Temperature	Annual mean temperatures are projected to increase by 2.0°C. Summer temperatures are projected to see the largest increase by 2.6°C and winter temperatures by 1.7°C. Mean maximum summer temperatures are projected to increase by 2.9°C.
Precipitation	Annual mean precipitation is projected to decrease by 1.1%. Seasonal variability is projected with a 22.9% decrease in precipitation during summer months and an increase of 11.5% during winter months.

Source: Met Office UKCP18 using the central probability estimate for a RCP8.5 scenario

Greenhouse gas emissions

D.8.3 Based on information from the local authorities which fall within the WRE region (as ESW specific information is unavailable at time of writing), the total carbon dioxide (CO₂) emissions for 2018 across all sectors is estimated at 32,660 kilotons (ktCO₂) (not including land use, land-use change, and forestry (LULUCF)).

1.1.1 The transport sector contributed the highest proportion of emissions to the total in 2018 at 44% followed by the domestic and industrial sector at 27% and 29% respectively. The LULUCF sector is estimated to be responsible for the removal of 214ktCO₂ equating to a 0.6% reduction in the total CO₂ emissions⁸

D.9 Population and Human Health

D.9.1 It should be noted that data is presented differently by each Authority.

Essex

D.9.2 The total population as determined by Essex County Council local authority is 1,477,764 (2018). The Office of National Statistics population projections (2016 based) predict that by 2034 the total population will increase by another 195,160 people to a total of 1,650,500, an increase of 13.41% from 2011 estimates as shown in Table D.12. Over the next 40 years an increase of 7,338 new homes occupied each year is predicted.

Table D.12: Population projections all ages 2020 – 2035 Essex

Total population (all ages)	2018	2034
Numbers	1,477,764	1,650,500

⁷ Met Office UKCP18. Available at: <https://ukclimateprojections-ui.metoffice.gov.uk/>

⁸ BEIS (2020). UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2018.

Source: ONS Data

- D.9.3 It is estimated that 18.9% of the population are aged 0-15 years (Children & Young People), 60.6% of the population are aged 16-64 (working age group) and 20.5% are aged 65 and over. Compared to the average for England, the Working Age group is 2% lower than the national average, whilst the 65+ age group is 2% higher.

Suffolk

- D.9.4 The total population of Suffolk is 761,246 (2020). Currently, about one in five people living in Suffolk are aged 65 or over. Over the next 20 years, this is forecast to change, with one in three Suffolk residents being aged 65 or over, compared to 1 in 4 for England as shown in Table D.12. There are around 340,000 homes in Suffolk. Nearly nine in 10 homes are a house or bungalow, and the rest are flats or apartments. An assessment of housing need suggests that more than 62,000 new Suffolk homes will need to be built over the next 20 years to meet demand.

Table D.13: Population by age 2020 – 2043 Suffolk

Age	2020	%	2043	%
0-15	136243	17.9	132697	16
16 - 64	443505	58.3	442260	53.4
65+	181498	23.8	253762	30.6

Source: Suffolk Observatory

- D.9.5 Life expectancy in Suffolk is 84.3 for females and 80.9 for males, this is slightly below the national average of 84.4 for females and above the national average of 79.8 for males. Winter deaths in the 85+ population are 6% higher than the national average. The general Suffolk populational health in comparison to the populational health of the East of England, and of England as a whole, is presented in Table D.14 below.

Table D.14: General Health (2011) Suffolk

Name	Suffolk	East of England	England
	%	%	%
Very bad health	1	1	1.2
Bad health	3.7	3.6	4.2
Fair health	13.6	12.9	13.1
Good health	35.7	35.2	34.2
Very good health	45.9	47.2	47.2

Source: Suffolk Observatory

Eastern England

- D.9.6 Settlements within the WRE region are diverse and range from large population centres such as Colchester, Peterborough, Cambridge and Norwich to small rural hamlets and seaside towns.
- D.9.7 The distribution of age amongst the population in the region is similar to the UK average where 20% are aged 15 and under, 66% are between 16 and 64, and 14% are over 65. Those aged 30 to 44 make up the largest proportion of the population at 23% followed by 45 to 59 at 18%.
- D.9.8 Ethnicity in the region is predominately White. There are larger proportions of Black, Asian and Mixed ethnicities in the urban areas of the region compared to rural areas.
- D.9.9 Life expectancy at birth for both males and females in Eastern England is better than the England average at around 81 years old and 84 years old respectively. Against the various indicators included within the Public Health Profiles, the region is generally better than the

national average. Where the region is performing worse than the national average is against the following indicators:

- Killed and seriously injured casualties on England's roads
- Suicide rate
- Hip fractures in people aged 65 and over
- Estimated diabetes diagnosis rate
- Smoking prevalence in adults (18+)
- Percentage of physically active adults,
- Smoking prevalence in adults in routine and manual occupations (18-64)
- Excess winter deaths.

D.10 Economy

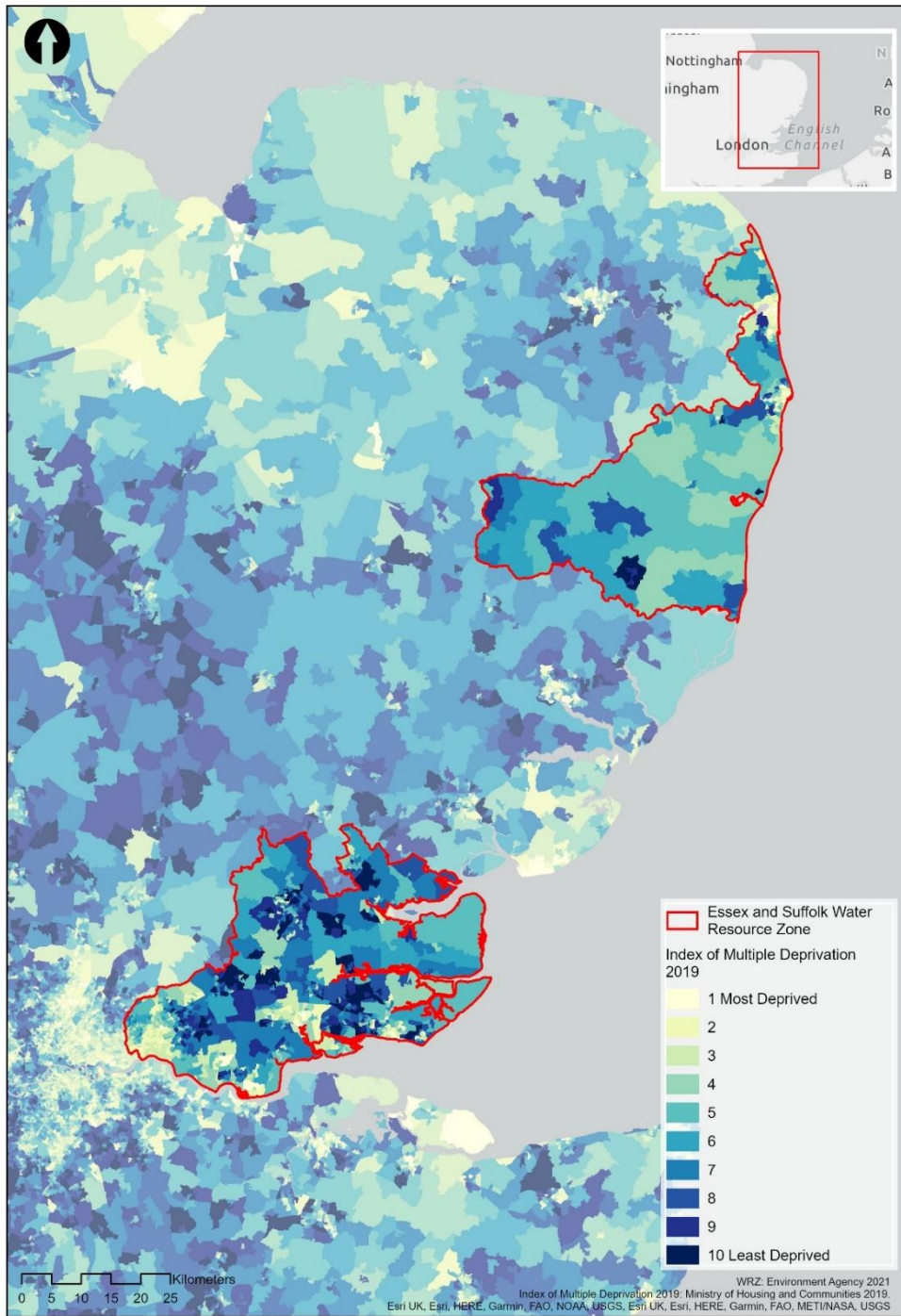
D.10.1 Eastern England contributes around 10% of the total UK economy. Gross Domestic Product (GDP) per head is £30,069 which is lower than the national UK average of £32,857. The service industry dominates the employment sector across the Eastern region, which is in line with the rest of the UK. For the three months ending June 2020 the unemployment rate was 3.8% which is slightly lower than the UK average of 3.9%.

D.10.2 In 2019, there were 9.7 million trips to Eastern England, which makes up around 10% of total trips to England. The total expenditure in Eastern England was £1,661 million.

D.11 Regional deprivation

D.11.1 The Index of Multiple Deprivation (IMD) 2019 is the official measure of relative deprivation for small areas (or neighbourhoods) in England. The IMD ranks every small area (Lower Super Output Area) in England from 1 (most deprived) to 32,844 (least deprived). For larger areas we can look at the proportion of LSOAs within the area that lie within each decile. Decile 1 represents the most deprived 10% of LSOAs in England while decile 10 shows the least deprived 10% of LSOAs as shown in Map D.2.

Map D.2: Distribution of the Index of Multiple Deprivation 2019 Eastern England and the E&S supply area



Source: The English Indices of Deprivation 2019 (DCLG, September 2019)

D.12 Historic Environment

D.12.1 The ESW supply areas are rich in heritage, with listed buildings, scheduled monuments, registered parks and gardens and registered battlefields. The total number of each of these assets within the ESW supply region is presented in Table D.15. Scheduled monuments,

registered parks and gardens, and registered battlefield are shown on the corresponding map in Appendix D.19.

Table D.15: Heritage assets within the ESW region

Asset	Description	Number	
Listed Buildings	The statutory responsibility for listed buildings control lies with the individual Local Authorities. The Department for Digital, Culture, Media and Sport is responsible for compiling the statutory list of buildings of special architectural or historic interest and each building or structure of interest is classified under one of three Grades; I, II* and II depending on their significance (Grade I assessed as highest significance).	Grade I	214
		Grade II*	486
		Grade II	7,420
Registered Parks and Gardens	Historic England maintains a register of historic parks and gardens of special interest in England, these parks and gardens are as equally important as buildings and settlements and form part of an area's cultural heritage. However, unlike listed buildings and conservation areas, historical parks and gardens are not afforded legal protection within the UK. The registration of these historic parks and gardens is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the landscapes' special character.	Grade I	0
		Grade II*	5
		Grade II	15
Scheduled Monuments	Scheduled monuments are protected under the Ancient Monuments and Archaeological Areas Act 1979. The monuments are scheduled and recorded through Historic England, based on national importance and covering a diverse range of archaeological sites. Scheduled monuments are often in a ruinous or semi-ruinous condition or take on the form of earthworks. More complete structures of national significance are usually protected as listed buildings.	198	
Conservation Areas	Conservation areas are designated by local planning authorities under their powers. The areas are protected to preserve special areas of historical and architectural importance and can range from small villages, town centres and residential areas. Each conservation area will have its own conservation area appraisal, which sets out how it should be protected.	144	
Registered Battlefields	Historic England holds a Register of Historic Battlefields. Its purpose is to offer battlefields protection through the planning system, and to promote a better understanding of their significance and public enjoyment.	1	

D.12.2 It is likely that most of the Local Authorities in the ESW region will hold a Historic Environment Record (HER), which is a database of archaeological sites, listed buildings and other historic buildings, and finds of historic objects. There are hundreds of entries on the HERs from churches and houses to roman coin finds and medieval finds. There is also potential for unidentified heritage assets and archaeological remains to be present within the region.

D.13 Landscape

D.13.1 The landscape across the ESW region is diverse and is made up of a mixture of lowlands and small hills. The ESW region also has a striking stretch of coastline, including the Norfolk and Suffolk coasts, and picturesque seaside villages. Agriculture plays an important role in the landscape, however the ESW region also has densely populated areas, such as Chelmsford, Colchester and Ipswich.

- D.13.2 National Character Areas (NCAs) divide England’s landscape into 159 distinct areas and are defined by a unique combination of aspects such as landscape, biodiversity, geodiversity and economic activity⁹. There are 8 NCAs within the ESW boundary.
- D.13.3 National Parks are designated to protect their outstanding landscape and countryside, wildlife and cultural heritage. There is one National Park located within the Eastern region, which was designated in 1976. The Broads National Park is 303 square kilometres, most of which is in Norfolk, with over 200 kilometres of navigable waterways. There are seven rivers and 63 broads, mostly less than four metres deep. Thirteen broads are generally open to navigation, with a further three having navigable channels¹⁰.
- D.13.4 Areas of Outstanding Natural Beauty (AONB) are protected to conserve and enhance their natural beauty and distinctiveness¹¹. There are two AONB within the ESW region which are detailed in Table D.16 and are mapped in D.19.

Table D.16: AONB within the ESW region

AONB	Description
Norfolk Coast	This long coastal strip incorporates the finest, remotest and wildest of Norfolk’s renowned marsh coastlands. The coast is backed by gently rolling chalkland and glacial moraine including the distinctive 90-m high Cromer Ridge. Together the coastal habitats form an ecosystem of outstanding importance and National Nature Reserves within the area include the world-famous bird reserves, Titchwell and Cley Marshes, and Winterton Dunes, one of the country’s finest dune systems. The Heritage Coast stretch is a Ramsar site, a Biosphere Reserve, a SSSI, a SPA and candidate SAC and Marine SAC.
Suffolk Coast and Heath	The Suffolk Coast and Heaths AONB is a low-lying coastal landscape of astonishing variety, stretching from the Stour estuary in the South to Kessingland in the North, covering a total of 403 square kilometres. It has a unique mixture of shingle beaches, crumbling cliffs, marshes, estuaries, heathland, forests and farmland. The AONB is also one of the most important wildlife areas in Britain, encompassing three National Nature Reserves, many Sites of Special Scientific Interest and the RSPB’s Minsmere Reserve. The mudflats and creeks of the AONB’s estuaries contain wildlife wetland sites of national and international importance, whilst the wild, sandy stretches of ancient open heathland such as the Sandlings are a refuge for nightjar, woodlark, and rare heath butterflies.

D.14 Tranquillity

- D.14.1 Tranquillity is recognised as a natural resource and one which is beneficial to health and wellbeing, however infrastructure and development is putting more pressure on this special quality. The Campaign for Rural England (CPRE) has developed a tranquillity map for England to show the range of undisturbed or disturbed tranquillity areas across the country. There are areas of high tranquillity (undisturbed areas) distributed throughout Eastern England, as well as pockets of urban areas.

Material assets

- D.14.2 The ESW supply region has an extensive transport network which connects people, places and services both within the region and beyond to support the regional and national economy. It supports gateways for international trade with the UK’s London Stansted Airport, and the UK’s

⁹ Natural England (2014). NCAs. Available at: <https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making>

¹⁰ The Broads, England. Living Lakes Partnership 1998-2005, 2006: <https://web.archive.org/web/20051023224442/http://www.livinglakes.org/broads/>

¹¹ Natural England (AONBs): designation and management. Available at: <https://www.gov.uk/guidance/areas-of-outstanding-natural-beauty-aonbs-designation-and-management>

busiest container port, Felixstowe and the Ports of Ipswich and Harwich. The Port of Felixstowe is Britain's biggest and busiest container port, and one of the largest in Europe. Around 17 shipping lines operate from Felixstowe, offering 33 services to and from over 700 ports around the world.

- D.14.3 In the wider WRE region the M1 passes through the west, starting just north of London and proceeding north toward Leicester. Two other small stretches of motorway run through East Anglia, with the end of the M11 south of Cambridge and sections of the A1 in Cambridgeshire and around Peterborough being classed as motorway. Main trunk routes maintained by Highways England in the region include the A1, A11, A12, A14 and A47. A variety of other major roads run through the region, maintained by county councils.

Resource Use and Waste

- D.14.4 In 2018/19 the total amount of local authority managed waste was 25.6 million tonnes. Eastern England managed 2.9 million tonnes of waste in 2018/2019, with nearly half (47.8%) of this collected waste sent for recycling, 33% sent to incineration, 14% sent to landfill and the remaining 2.4% fell within the 'other' category. The recycling rate for Eastern England was the second highest in England, with only the South West (49.9%) performing better.

D.15 Natural Capital

- D.15.1 The ESW region contains a diverse range of Natural Capital stocks that provide a range of ecosystem services at the national, regional and local levels. The landscape is a mixture of coastal area, lowlands and small hills that contain all eight broad habitat types included within the United Kingdom's National Ecosystem Assessment (UK NEA). The UK NEA reports, first published in 2011 with follow-on reports published in 2014, set out the direct relationships between healthy, functioning ecosystems and human well-being and economic prosperity. The findings, which included extensive research from hundreds of natural scientists, economists, social scientists and other stakeholders, explained that many of the UK's ecosystems are in a state of decline, and that it is critically important for decision-making processes to recognise the benefits that society receives from those ecosystems. Anthropogenic pressures, such as agricultural intensification and population growth, threaten the functioning of those ecosystems, with the report citing a significant decline in the UK's semi-natural grasslands in the last 60 years due to agriculture, as well as a similar decline in coastal margin habitats due to development and coastal squeeze. It is an imperative for the ESW assessment process to recognise the current state and benefits derived from its ecosystems. It is also important to recognise that the ESA region contains several key abiotic stocks including fertile soils and coastal shelves, which also directly benefit society.
- D.15.2 The land cover percentages for Natural Capital stocks are given for the WRE region as the information is not available for the ESW region at the time of writing, however Natural Capital stocks for ESW is believed to be broadly reflective of the wider WRE region. They have been estimated using open source data and are provided below. Estimates for coastal and marine land cover were not available, however these habitats will be included in the Natural Capital baseline for the options assessments and wider IEA process.

Soils and geology

- D.15.3 Information on soils stocks within the ESW region is provided in Appendix D.6. The ESW region contains nationally important stocks of soils.

Freshwater

- D.15.4 Freshwater natural capital stocks cover approximately 1.7% of the WRE regions. This encompasses all waterbodies and wetlands such as rivers, ponds, fens, marshes and bogs.

Within the ESW region artificial freshwater habitats, such as canals and reservoirs are also an important natural capital stock. These natural capital stocks are vital to support the region's biodiversity and provide other ecosystem services such as water supply, climate regulation and cultural services

Farmland

- D.15.5 Farmland natural capital stocks cover approximately 73.3% of the WRE regions, agriculture with cereal and livestock grazing being the most predominant type of farming. Examples of types of Farmland stocks include Arable and rotational leys, Horticulture, Improved grassland, Orchards and top fruit and Permanent pasture. In addition to the primary production of agricultural products, farmland provides many other services such as supporting biodiversity and providing cultural and heritage services.

Grasslands

- D.15.6 Grassland natural capital stocks cover approximately 0.46% of the WRE region and include predominately semi natural grasslands. These habitats provide key services supporting biodiversity, sequestering carbon and mitigating climate change and livestock production. In addition, this stock is associated with recreation and physical benefits.

Urban

- D.15.7 Urban natural capital stocks cover approximately 13.5% of the WRE region and include greenspace, blue space and mosaic habitats within urban areas. These natural capital stocks provide a wide range of ecosystem services supporting a diverse array of plants and animals and can be particularly important for pollination services. Amenity greenspaces (parks, outdoor sports facilities) are vital for community cohesion, and the mental and physical health of urban residents.

Woodland

- D.15.8 Woodland natural capital stocks cover approximately 6.2% of the WRE region and consist of several sub habitat types including Broadleaved, mixed and yew woodland, Coniferous woodland, Individual trees/veteran trees and Woodland priority habitats. The quality of woodland stocks vary within the region as the majority is under management however several high-quality stocks include ancient woodland. These stocks provide services such as carbon sequestration, air purification and flood prevention.

Coastal and marine

- D.15.9 Coastal and marine habitats cover a small proportion of the land cover within the ESW region however include several key habitats and natural capital stocks such as:

- Beach
- Salt marsh
- Sand dunes
- Intertidal rock
- Intertidal sediment
- Reefs
- Sea grass beds
- Shallow subtidal sediment.

- D.15.10 These stocks support a range of services including reaction, cultural service, hazard prevention and climate regulation.

D.16 Future baseline

- D.16.1 The SEA Regulations requires that "the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the Plan or Programme" is identified. Prediction of future trends is difficult because they depend on a wide range of global, national and regional factors and decision making. Key trends have been identified and from an initial review it is likely that the following trends of aspects influencing change will continue:
- D.16.2 Climatic factors - the climate is expected to continue to change with annual average temperatures projected to increase, particularly in summer. Winters are projected to be wetter and summers drier. Carbon and other GHG emissions will continue to be emitted, however regulations and legislation will likely continue to promote the reduction in emissions through commitments to net zero. The water industry in the UK is aiming to become net zero by 2030.
- D.16.3 Material assets - regeneration and future investment and demand are likely to increase the number and quality of material assets such as housing, transport infrastructure, waste facilities, and community facilities.

D.17 Key issues for the ESW Plan:

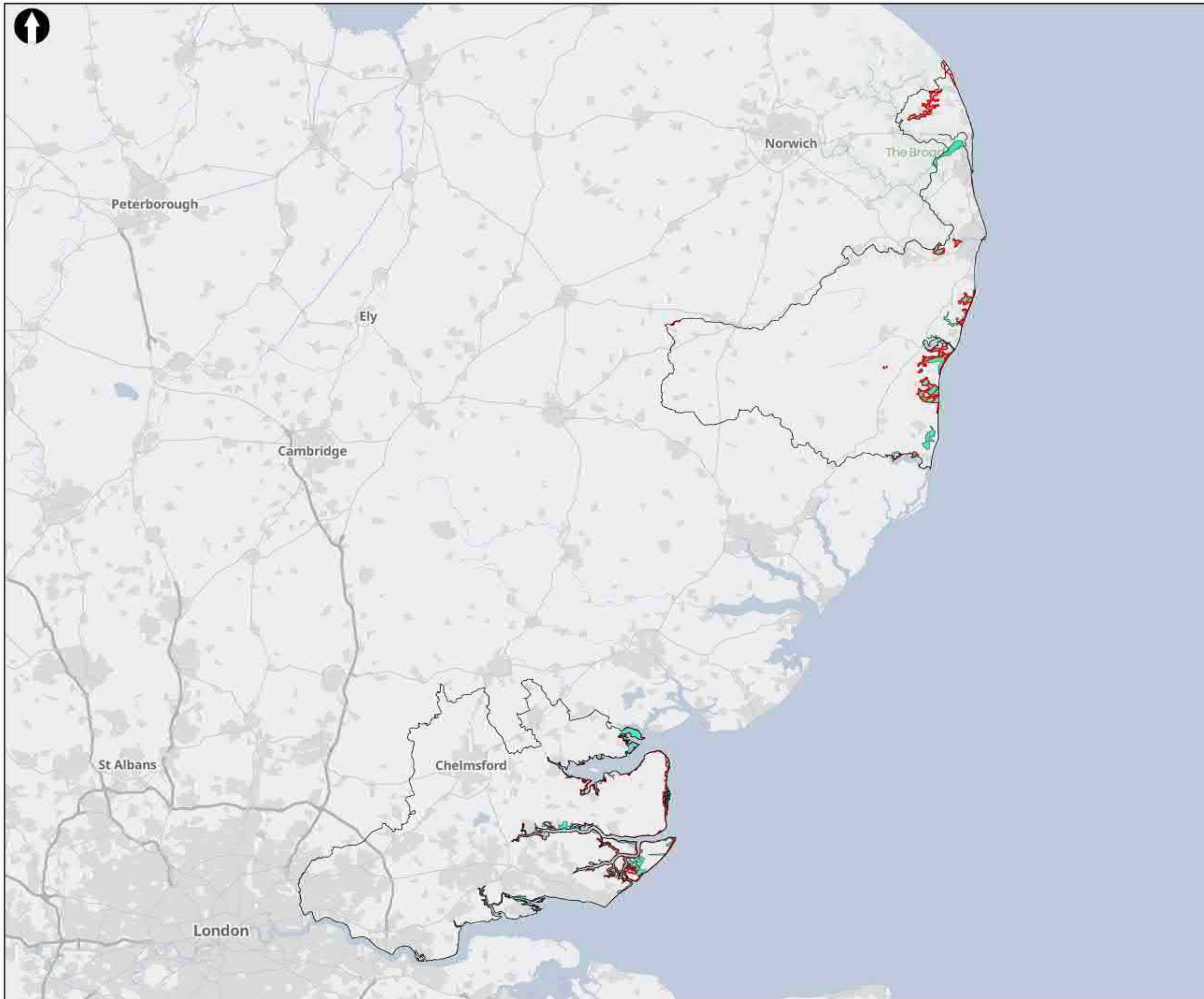
- Biodiversity, flora, and fauna - habitats and species are likely to continue to be protected through UK legislation. England's wildlife habitats have become increasingly fragmented and isolated, leading to declines in the provision of some ecosystem services, and losses to species populations. Lawton (2010) recognises that future climate change, demographic change, economic growth, new technologies, societal preferences and changes in policy and regulatory environments may all have profound consequences. However, new legislation such as the Environment Bill is likely to continue protection of biodiversity by providing a framework for a legally binding target of net gain within the planning system.
- Population and human health - water available for consumptive use may be affected by climate change whereby access to water is limited through more frequent droughts or floods. Population is projected to increase in the region and life expectancy is also higher than the nation average meaning that the numbers of elderly residents are likely to increase. As such, water demand will increase, and further pressure will be placed on water resources within the region.
- Soil - as the population increases it is likely that more brownfield land will be remediated and developed. There is potential for a loss of agricultural land through development pressures.
- Water - the region is already water-stressed and in a negatively affected state. Projected economic and population growth will likely place further pressure on the region's water resources and water dependent environments. Water quality is likely to continue to be maintained and improved through legislation such as the WFD. There is potential for an increased need for wastewater treatments as a result of WFD water quality standards combined with population increase. Given the energy intensity of wastewater treatment, the water industry CO₂ emissions may increase and further contribute to climate change however this may be lessened or reversed through efforts made to achieve net-zero by 2030. Climate change is projected to result in more extreme weather events, potentially causing or exacerbating periods of drought which alongside population and economic growth will impact water availability.

D.18 Wider issues:

- D.18.1 Air quality - new development, economic growth and tourism may lead to increased car journeys and congestion within the area leading to localised air quality effects. Public transport improvements, national air quality targets and European emissions standards for new vehicles should contribute to reducing future air quality impacts from motor vehicles.

D.18.2 Historic environment - Historic England recently reported that heritage assets at risk are decreasing. There are now 87 fewer heritage assets at risks than in 2018 with successes in buildings and structures and archaeology. Historic assets will likely continue to be protected through European and UK legislation. Development could put pressure on heritage assets and their setting.

D.19 Baseline Maps



Key to Symbols

- Essex and Suffolk Region
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)

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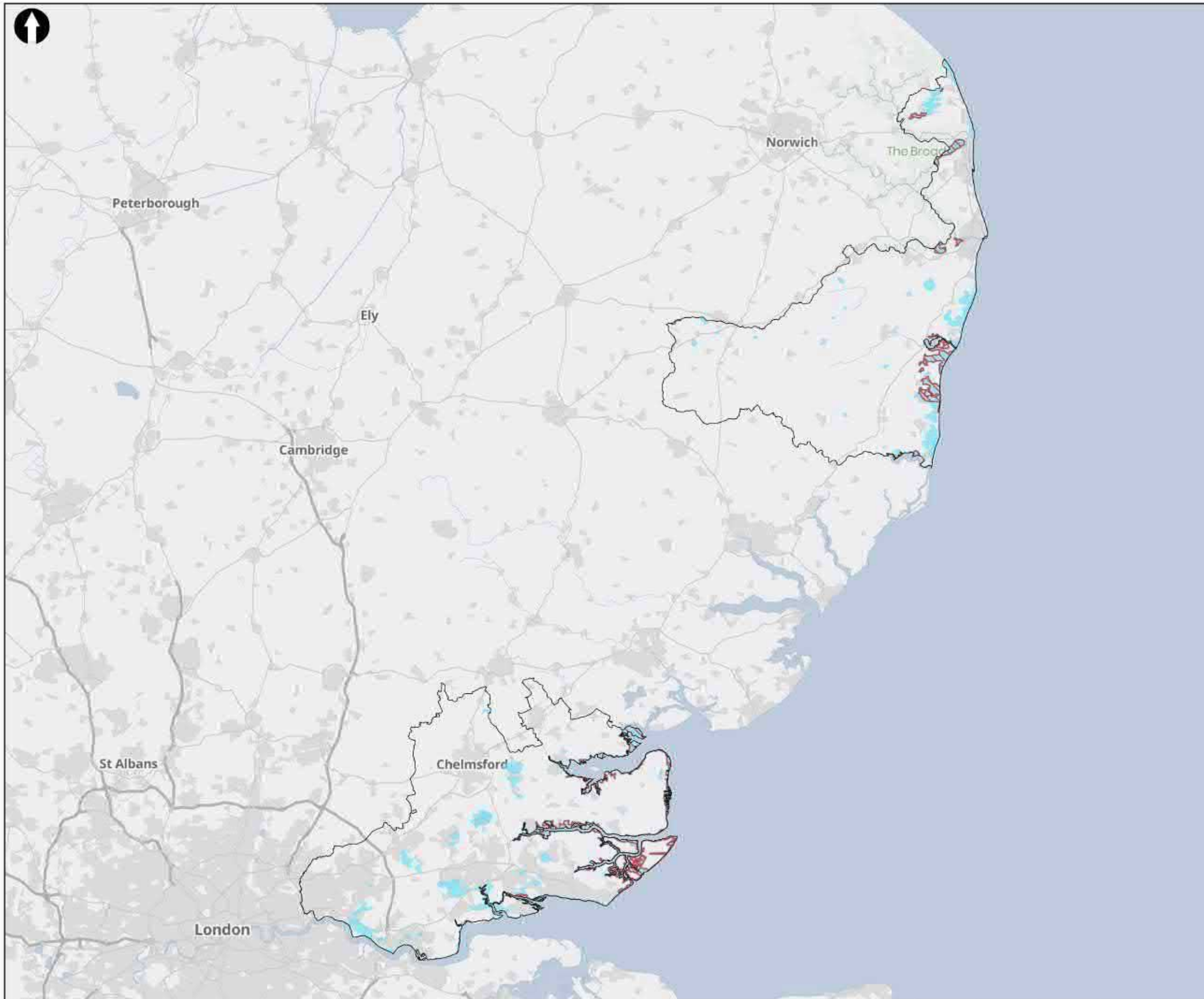
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WRMP24 SEA
 Environmental Report
 Habitat Sites (SPA and SAC)



Key to Symbols

- Essex and Suffolk Region
- Ramsar
- Site of Special Scientific Interest (SSSI)

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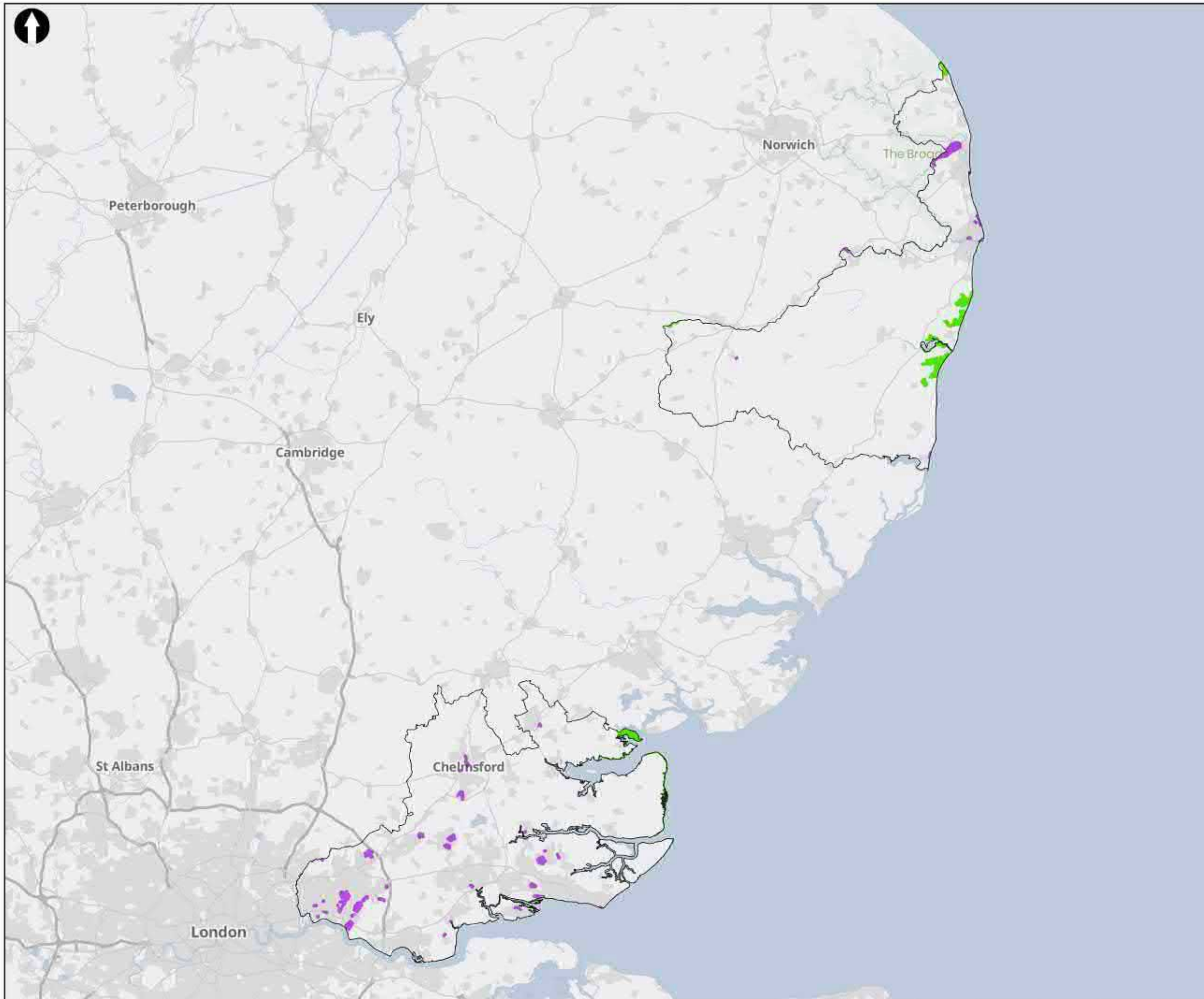
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Key to Symbols

- Essex and Suffolk Region
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)

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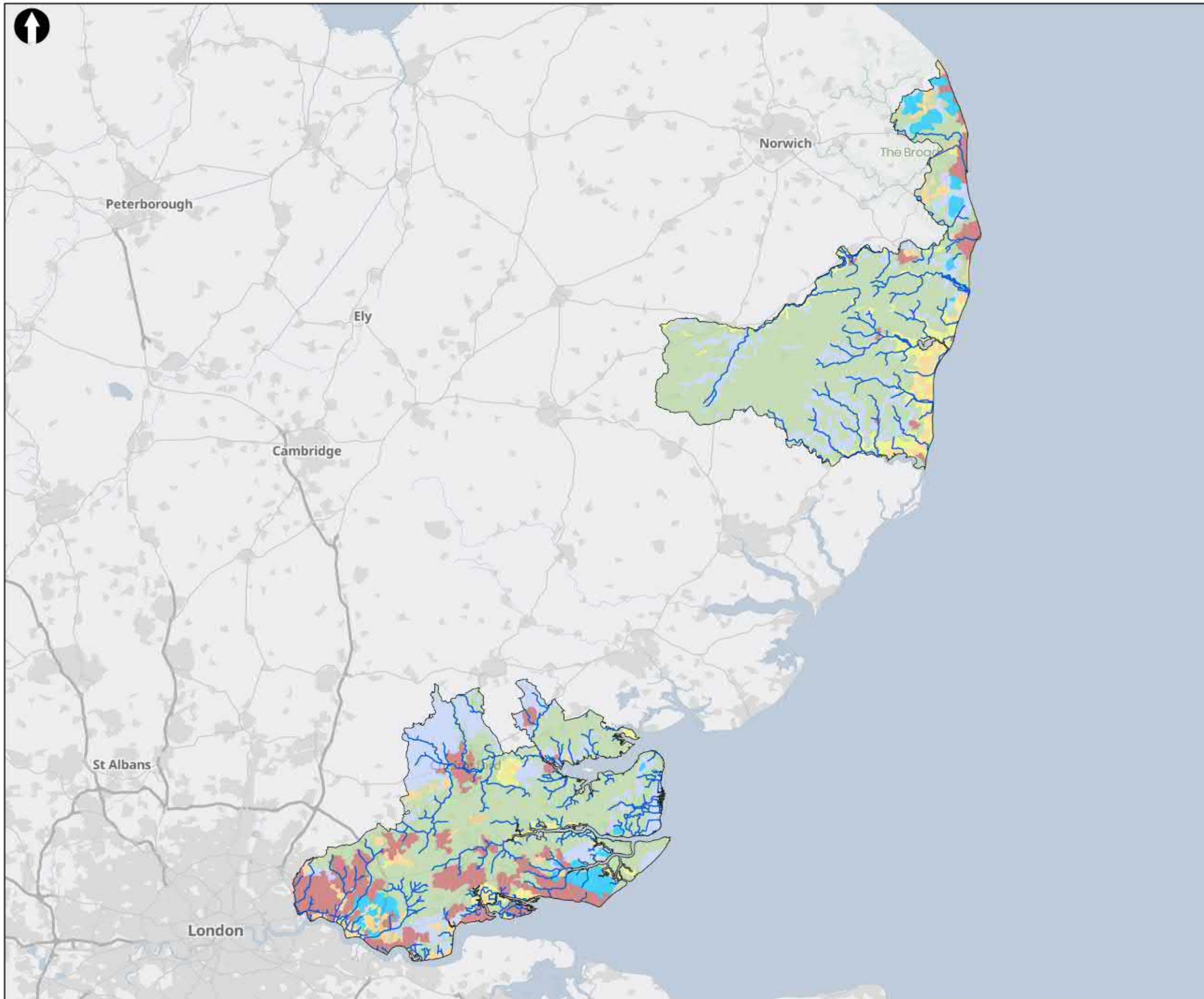
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WRMP24 SEA
 Environmental Report
 National Nature Reserves and Local
 Nature Reserves



Key to Symbols

- Essex and Suffolk Region
- Main river

Provisional Agricultural Land Classification (ALC)

- Grade 1
- Grade 2
- Grade 3
- Grade 4
- Grade 5
- Non agricultural
- Urban
- Exclusion

Notes

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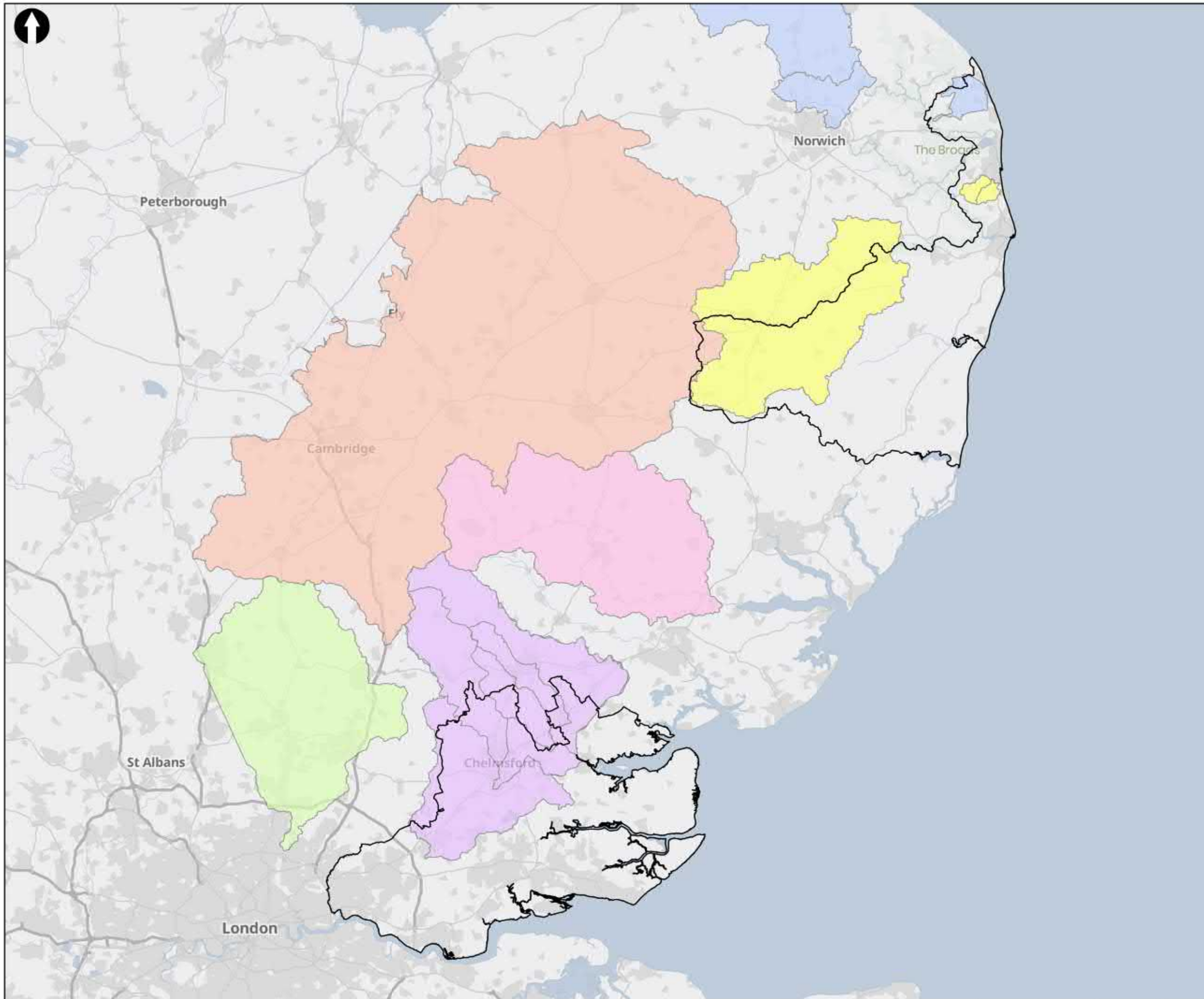
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WRMP24 SEA
 Environmental Report
 Main Rivers and Agricultural Land
 Classification



Key to Symbols

- Essex and Suffolk Region

Surface water catchment

- Bure
- Chelmer
- Ely Ouse
- King George
- Stour
- Waveny

Notes

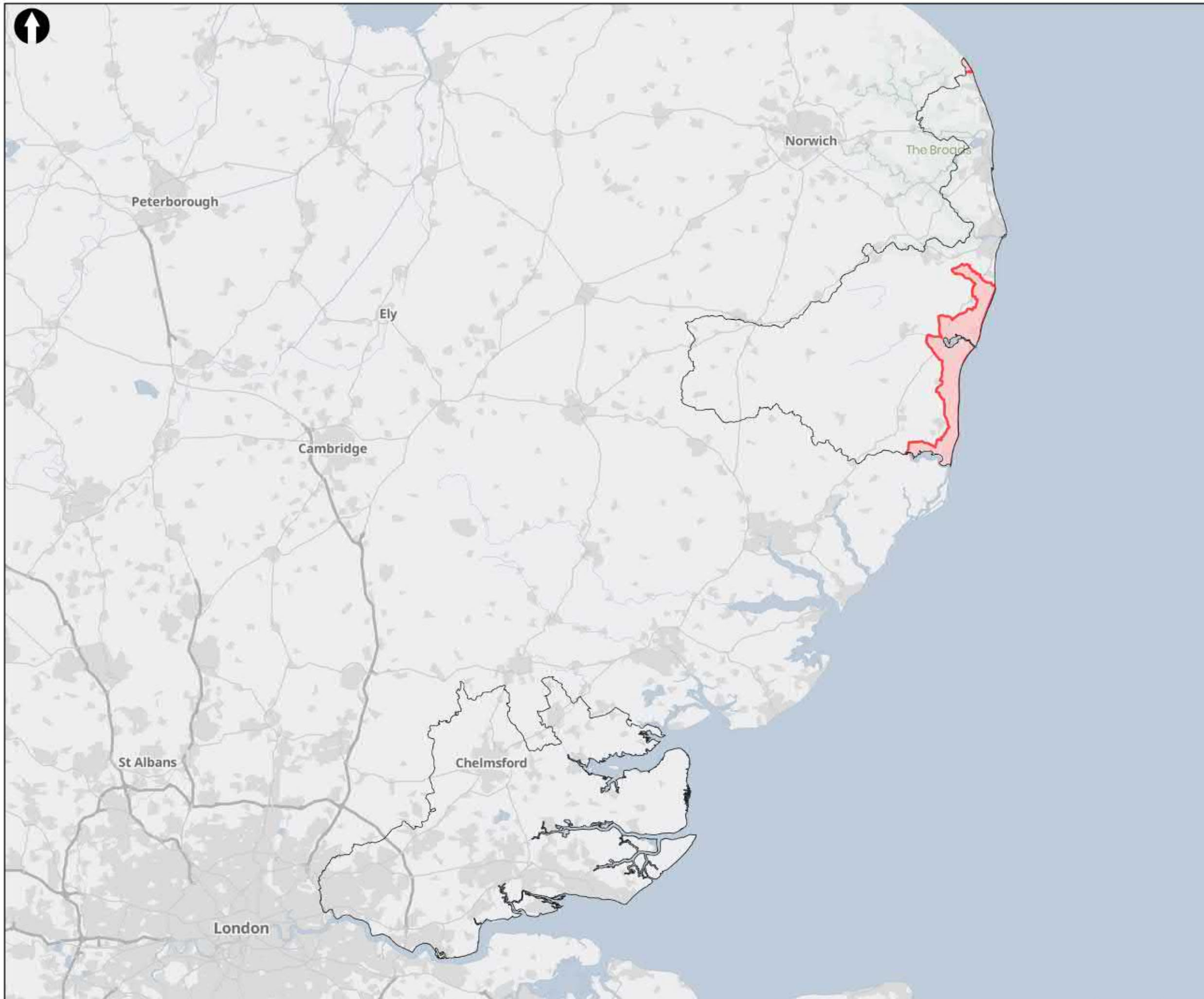
Water resources area surface water catchment: Essex and Suffolk Water, 2021-2022.
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Key to Symbols

- Essex and Suffolk Region
- Area of Outstanding Natural Beauty

Notes

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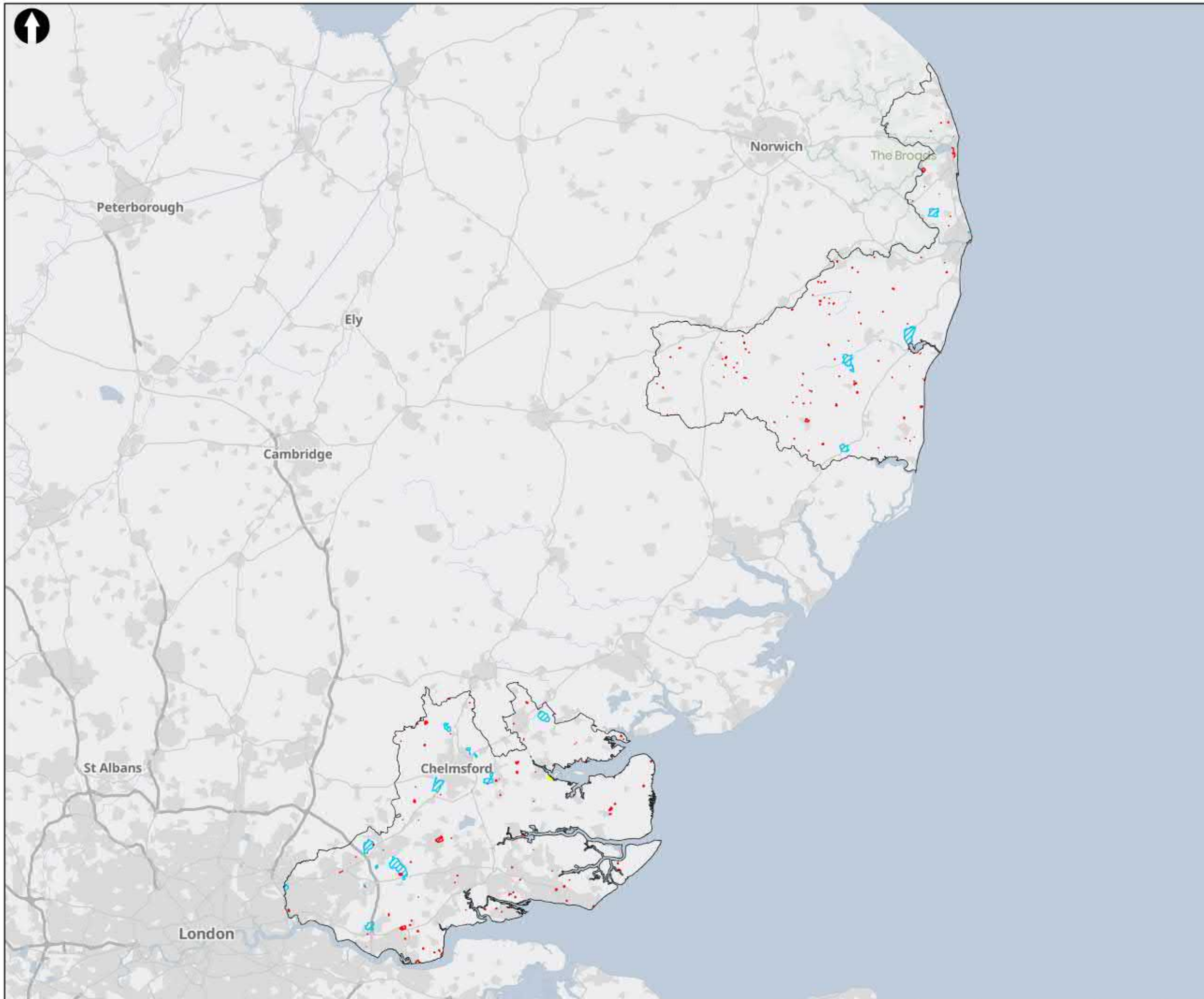
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 AONBs



Key to Symbols

- Essex and Suffolk Region
- Registered battlefield
- Scheduled monument
- Registered park and garden

Notes

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E. Integrated Environmental Assessment Summary Sheets

F. Habitat Regulations Assessment Appendix

F.1.1 *Appendix provided separately*

G. Water Framework Directive Appendix

G.1.1 *Appendix provided separately*

H. Biodiversity Net Gain and Natural Capital Approach Appendix

H.1.1 *Appendix provided separately*

I. Invasive Non-Native Species Appendix

I.1.1 *Appendix provided separately*

J. High Level Screening Appendix

J.1.1 *Appendix provided separately*

K. SEA Assessment Matrices

Essex and Suffolk Water SEA Assessment Matrices are available on request

