



Draft Drought Plan 2021: SEA Scoping Report

Severn Trent Water Strategic Environmental Assessment (SEA) Scoping Report

Report for Severn Trent Water Ltd

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ED148241

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1 Introduction

1.1 Background and Purpose of Report

Severn Trent Water is preparing its draft statutory Drought Plan 2021 for public consultation in April 2021 subject to approval of the Secretary of State. A Strategic Environmental Assessment (SEA) is being prepared to support and inform development of the plan. Habitat Regulations Assessment (HRA) and Water Framework Directive (WFD) assessments are also being undertaken in parallel.

This Scoping Report marks the key initial stage of the SEA process, setting out the baseline environmental conditions in the area affected by the draft Drought Plan and the proposed approach to the assessment of options to be considered for inclusion in the plan.

The SEA scoping process is important in setting the context for the SEA and allows for engagement with stakeholders. This Scoping Report describes the current and future environmental baseline within the area that could be affected by the implementation of Severn Trent Water's Drought Plan and identifies the key policy objectives of plans and programmes that are potentially relevant to the development of the plan. The environmental baseline and the key relevant policy objectives inform the development of the SEA objectives that will form the basis of the subsequent assessment of options for drought management.

Under Regulation 12(5) of the Environmental Assessment of Plans and Programmes Regulations 2004 (the "SEA Regulations"), when deciding upon the scope and level of detail of the information to be included in an Environmental Report, the authority responsible for the report is required to undertake consultation. This Scoping Report is therefore being issued to the statutory consultation bodies in England and Wales: Environment Agency (EA), Historic England (HE), Natural England (NE), Natural Resources Wales and Cadw. It is also being published on the Severn Trent Water website for wider consultation so that stakeholders have the opportunity to comment on the SEA and provides the initial basis for ongoing stakeholder dialogue as the Drought Plan is developed.

1.2 Severn Trent Supply Area and Drought Planning

1.2.1 Introduction

In the event of severe drought, Severn Trent Water will need to implement a range of management measures to ensure the continued provision of essential water supplies to all of its customers. The Severn Trent Water Drought Plan will set out the measures that the company will consider implementing in dealing with drought conditions, taking account of statutory legislation and regulatory requirements. A number of changes to drought planning legislation have been introduced in the last decade.

The Drought Plan (England) Direction 2020 requires water companies in England to submit an updated draft Drought Plan before 1st April 2021 to the Secretary of State. The SEA is being prepared for submission alongside the draft Drought Plan.

1.2.2 Severn Trent Water's Water Supply System

Severn Trent Water is one of the largest water and wastewater companies in England, providing high quality water and wastewater services to over 3.7 million households and businesses over an area of 21,000km² covering much of the Midlands, stretching from the Bristol Channel to the Humber, as well as the Chester area. Severn Trent Water supplies around 1800 million litres per day (Ml/d) through nearly 47,000km of water mains fed from multiple sources including impounding reservoirs, river sources and 181 groundwater sites. Overall, groundwater sources, river sources and impounding reservoirs provide 35%, 35% and 30% respectively of the total volume of water put into supply. For water resource planning purposes, Severn Trent Water's supply area is divided into 15 independent Water Resources Zones (WRZs) reflecting the different characteristics of the supply areas and associated risks to meeting demand within the supply area. The 15 WRZs are shown in **Figure 1.1** and summarised below:

1. Strategic Grid

By far the largest WRZ, the Strategic Grid extends from the Peak District in the north, encompassing most of Derbyshire and Leicestershire. The WRZ then extends south-west

through Warwickshire to Gloucester, and then north-west covering most of Worcestershire and some of Shropshire. The strategic grid is made up of 14 major water treatment works (WTW), five reservoir complexes, three major grid booster pumping stations and a number of strategic pipeline network connections and aqueducts. The WRZ serves a population of 5.08 million (64.9% of the total population supplied by STW).

2. Nottinghamshire

The Nottinghamshire WRZ is supported by inter-linked groundwater sources and can also receive transfers from the Strategic Grid. The zone is largely supplied from a sandstone aquifer, which is a large unit that responds slowly to abstraction and drought pressures. The WRZ serves 1.04 million people (13.3% of the total).

3. Newark

The Newark WRZ is supplied from local boreholes and imports from Nottinghamshire WRZ. The WRZ serves a population of 45,530 (0.6% of the total).

4. North Staffordshire

This WRZ extends from Tittesworth reservoir in the Peak District south-west towards Market Drayton. The WRZ is well connected with a flexible, conjunctive use supply system with integrated operation of groundwater and surface water sources. The WRZ serves a population of 534,890 (6.8% of the total).

5. Stafford

There are four borehole groups which supply the distribution reservoirs in the zone, allowing an even distribution of water throughout the zone. The zone has no defined connections to the surrounding WRZs under normal operation. The WRZ serves a population of 95,330 (1.2% of the total).

6. Whitchurch and Wem

This WRZ lies on the English side of England-Wales border and extends from Whitchurch southwards to Wem. The WRZ is supplied from local boreholes. There are no connections with surrounding WRZs under normal operation. The WRZ serves a population of 29,190 (0.4% of the total).

7. Kinsall

This WRZ lies to the west of the Whitchurch and Wem WRZ. The WRZ is supplied from local boreholes. There are no connections with surrounding WRZs under normal operation. The WRZ serves a population of 12,370 (0.2% of the total).

8. Mardy

This WRZ runs along the Welsh border encompassing Oswestry. The zone is supplied from a local borehole. There are no connections to the surrounding WRZs under normal operation. The WRZ serves a population of 8,200 (0.1% of the total).

9. Ruyton

The zone is supplied from a local borehole and a limited connection from the Shelton WRZ. The WRZ serves a population of 12,830 (0.2%).

10. Shelton

This WRZ spans the England-Wales border extending from Gwynedd towards Wolverhampton. The zone is connected by a strategic link from Shelton to Telford that allows water resources to be effectively utilised throughout the zone from Shropshire to west Staffordshire. The WRZ serves a population of 460,920 5.9% of the total).

11. Wolverhampton

The zone is mainly supplied from surface water supported by a number of local groundwater sources. The WRZ serves a population of 238,700 (3.1% of the total).

12. Bishops Castle

The zone is supplied from local boreholes. There are no connections to the surrounding WRZs under normal operation. The WRZ serves a population of 6,170 (0.1% of the total).

13. Chester

This zone is supplied predominantly by the River Dee (85%), with 10% from impounding reservoirs and 5% from a local spring source and groundwater source. The WRZ serves a population of 99,760 (1.3% of the total).

14. Rutland

This zone on the eastern edge of the supply area receives all of its water from bulk supply transfers from Anglian Water. The WRZ serves a population of 31,240 (0.4% of the total).

15. Forest and Stroud

This zone is supplied with water from the River Wye plus local groundwater and spring sources. The WRZ serves a population of 134,070 (1.7% of the total).

Further details about the Severn Trent Water supply system are provided on the Severn Trent Water website (www.stwater.co.uk).

1.2.3 Habitat Regulations Assessment (HRA)

An HRA is being carried out to inform the development of the Drought Plan, providing an understanding of the impact of potential drought management measures on designated European Sites and any associated compensatory habitat. Findings from the HRA will be used in carrying out the SEA of alternative drought management measures being considered for inclusion in the Drought Plan.

1.2.4 Water Framework Directive (WFD) Regulations

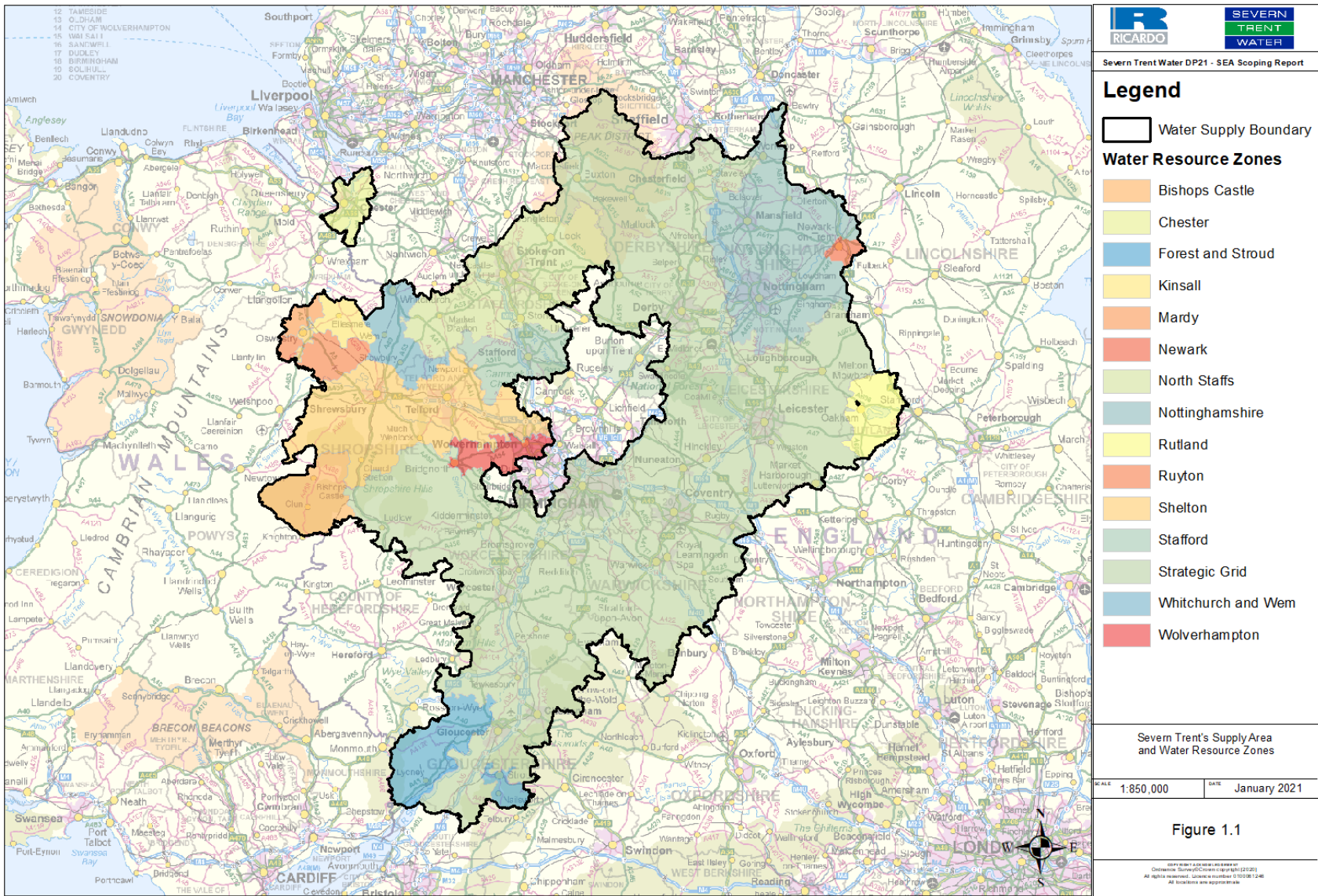
As well as HRA, a WFD Regulations compliance assessment is being carried out to determine the potential risks that the Drought Plan poses to WFD water bodies. The findings of the assessment will be included in the Drought Plan, demonstrating the extent to which the plan is compliant with WFD Regulations.

1.2.5 Drought Plan Timetable

In accordance with the Drought Direction (England) 2020, the draft plan will be issued for public consultation along with the SEA Environmental Report, a Habitats Regulations Assessment (HRA) report and a WFD compliance assessment summary. Following feedback from the public consultation process, a Statement of Response will be published by Severn Trent Water setting out its responses to consultation feedback and any changes it proposes to make to the draft Drought Plan. The Drought Plan (and associated SEA, HRA and WFD compliance assessment) will be updated as appropriate and submitted to the Secretary of State for approval to publish it as a final plan. The Final Drought Plan is expected to be published during 2022, subject to approval by the Secretary of State. The updated plan will guide Severn Trent Water's response to any drought events that may arise in the period between 2022 and 2027.

Only those drought management measures which are relevant to the five-year period encompassed by the Drought Plan (2022 to 2027) are considered within the SEA. In this regard, environmental effects of the potential drought plan measures are considered within the context of the company's existing abstraction licence conditions and operating arrangements. Additionally, only those plans, projects and programmes that are likely to be effective in the period from 2022 to 2027 will be considered in the SEA. The closely allied, but separate statutory process, of developing a long-term Water Resources Management Plan (WRMP) identifies new, permanent measures to address water supply resilience, including during drought conditions. The latest Severn Trent Water WRMP was published in 2019 and will be updated in 2024.

Figure 1.1 Seven Trent's Supply Area and Water Resource Zones



1.2.6 Requirement for SEA of Severn Trent's Drought Plan

Water companies need to demonstrate that they have investigated whether SEA is required for their Drought Plans. As responsible authorities under the SEA Regulations, water companies must themselves determine if SEA is required of their Drought Plan.

The flow diagram in the Office of the Deputy Prime Minister (ODPM) SEA Practical Guide¹ has been applied to Severn Trent Water's Drought Plan and is presented in **Figure 1.2** with the boxes and arrows highlighted in red describing the provisions and route through the flow chart that is applicable to the Drought Plan. This demonstrates that SEA is required of the Drought Plan. Severn Trent Water has taken a precautionary approach in relation to the SEA screening of the Drought Plan by considering that there could be possible effects on European (or Natura 2000) sites due to implementing some of the measures included in the plan. This will be confirmed by the parallel HRA process currently being undertaken.

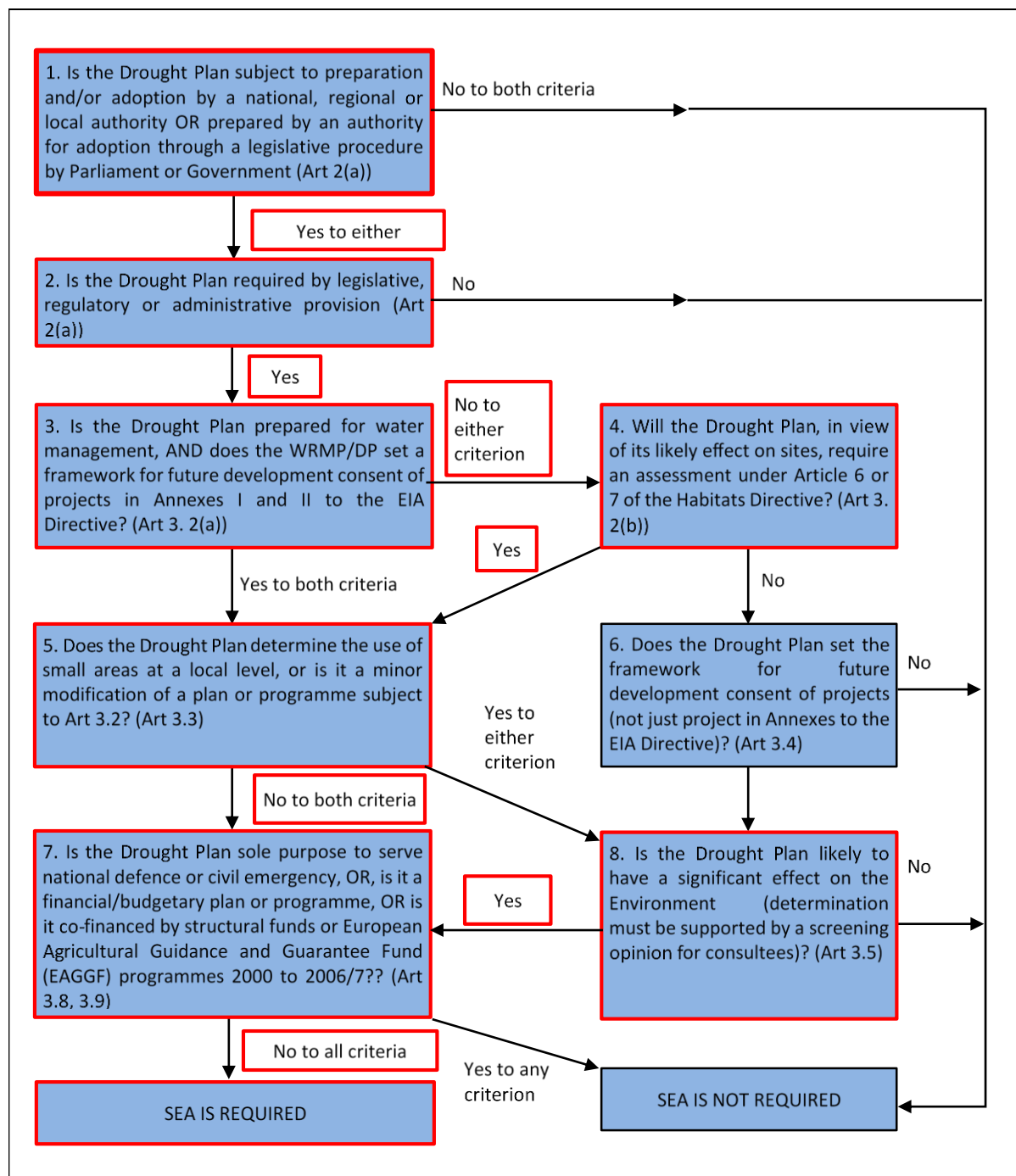
The route through the flow diagram has been highlighted in red in **Figure 1.2**, and is described below:

1. Is the Plan subject to preparation and/or adoption by a national, regional or local authority OR prepared by an authority for adoption through a legislative procedure by Parliament or Government?
 - **Yes, prepared by an authority for adoption through a legislative procedure by Parliament or Government.**
2. Is the Plan required by legislative, regulatory or administrative provisions?
 - **Yes, required by legislative provisions.**
3. Is the Plan prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use, AND does it set a framework for future development consent of projects in Annexes I and II to the EIA Directive?
 - **Yes, the plan is prepared for water management. However, it does not set a framework for future development consent of projects in Annexes I and II of the EIA Directive.**
4. Will the Plan, in view of its likely effect on sites, require an assessment under Article 6 or 7 of the Habitats Directive²?
 - **HRA screening is being undertaken and Appropriate Assessment of at least one of the measures contained in the plan might be required (precautionary approach adopted to the screening).**
5. Does the Plan determine the use of small areas at local level, OR is it a minor modification of a plan or programme subject to Art. 3.2?
 - **No to all criteria.**
8. Is it likely to have a significant effect on the environment?
 - **Possibility that it may have significant effects (precautionary approach adopted).**
7. Is the PP's sole purpose to serve national defence or civil emergency, OR is it a financial or budget PP, OR is it co-financed by structural funds or EAGGF programmes?
 - **No to all criteria.**

RESULT: THE SCREENING INDICATES THAT SEA IS REQUIRED TO BE CARRIED OUT ON THE DROUGHT PLAN, ADOPTING A PRECAUTIONARY APPROACH

¹ Office of the Deputy Prime Minister (2005) A Practical Guide to the Strategic Environmental Assessment Directive.

² Superseded by the Conservation of Habitats and Species Regulations (2010), Section 61 to 67.

Figure 1.2 SEA Requirement of Severn Trent Water's Drought Plan

1.2.7 Drought Plan Development

Under sections 39B and 39C of the Water Industry Act 1991 (as amended by the Water Act 2003 and subsequently the Water Act 2014), water companies are required to prepare and maintain statutory Drought Plans. The Drought Plan sets out the operational steps a water company will take before, during and after a drought to maintain essential water supplies to customers. A Drought Plan is defined by the Water Industry Act 1991 (as amended) as 'a plan for how the water undertaker will continue, during a period of drought, to discharge its duties to supply adequate quantities of wholesome water,

with as little recourse as reasonably possible to drought orders³ or drought permits⁴. The Drought Plan identifies a range of drought management actions that Severn Trent Water will consider taking account of the prevailing drought conditions.

There are two broad categories of drought management actions: demand-side measures and supply-side measures. These are described in the tables below.

Table 1.1 Supply-Side Measures

Supply-Side Measures	Description
Drought/Emergency Sources	Measures relating to existing licensed abstraction sources. Severn Trent Water is considering a number of sources that are currently non-commissioned or which do not operate as 'business as usual' that may provide a supply side benefit in a drought to help maintain essential supplies to customers.
Drought Orders and Drought Permits	<p>Severn Trent Water may require recourse to Drought Permits and/or Drought Orders, allowing temporary modifications to existing abstraction licence conditions or to enable water to be taken from alternative sources.</p> <p>Drought Orders and Drought Permits are subject to statutory procedures, and may only be granted for specific periods and, subject to limited further renewal. Drought Orders and Drought Permits require environmental monitoring and may require mitigation measures to be in place to address any potential adverse effects.</p>

Table 1.2 Demand Management Measures

Demand-Side Measures	Description
Drought publicity to promote water conservation measures by customers	Increased water efficiency messages via increased customer communications.
Increased water leakage control activities	Enhance existing water leakage control activities which seek to reduce the volume of water lost through any leaks, increase the number of leaks found each day and speed up the rate at which leaks are and repaired.
Temporary Water Use Restrictions	<p>Temporary Use Ban</p> <p>A temporary ban on certain prescribed non-essential water uses, including watering of gardens and car washing. This can be implemented by Severn Trent Water using its statutory powers following a period of consultation with customers and advertising of the proposals to customers and stakeholders.</p> <p>Drought Order for Non-Essential Use Ban</p> <p>A Drought Order application must be made to the Secretary of State if Severn Trent Water needs to temporarily restrict a further range of prescribed non-essential water uses by non-household customers. The Drought Order application must be advertised in advance and the Secretary of State may direct that a local public hearing is held to consider any objections raised to the proposed restrictions before reaching a decision on the application.</p>

³ An authorisation granted by the Secretary of State under Section 73 of the Water Resources Act (199) when there are drought conditions, which impose restrictions upon the use of water, and/or allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis. A drought order can be applied for by the EA for environmental reasons and by a Water Undertaker for Public Supply reasons. A drought order lasts for 6 months but can be extended for a total of one year.

⁴ An authorisation granted by the EA (or NRW in Wales) under drought conditions which allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis (generally for 6 months, but can be extended up to a total of one year) under Schedule 8 of the Water Resources Act (1991) (as amended).

1.3 Strategic Environmental Assessment

SEA is a statutory requirement under national regulations requiring the assessment of effects of certain plans and programmes on the environment. The objective of SEA is to:

'provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans with a view to promoting sustainable development.'

The SEA Regulations require assessment of the likely significant effects on the environment of implementing plans or programmes, and any reasonable alternatives, taking into account the objectives and geographical scope of the plan or programme. It should be noted, however, that as stated in the ODPM SEA Guidelines⁵

"It is not the purpose of the SEA to decide the alternative to be chosen for the plan or programme. This is the role of the decision-makers who have to make choices on the plan or programme to be adopted. The SEA simply provides information on the relative environmental performance of alternatives, and can make the decision-making process more transparent."

The SEA can, therefore, be used to support the consideration of alternative drought management measures and the timing and implementation of the selected management measures within the plan, although this needs to be set in the context of applying SEA to drought planning.

The range of issues to be included in an SEA is set out in the Regulations, and includes biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage, and landscape. As such, the full range of environmental and social effects which are likely to arise from implementation of the Drought Plan will be considered.

As identified above, the UK Government has produced generic SEA best practice guidance - the "Practical Guide" which sets out the stages of the SEA process. This, together with guidance for undertaking SEA of drought plans, which has been produced on behalf of United Kingdom Water Industry Research (UKWIR)⁶, has been used to inform the methodology for the SEA set out in this Scoping Report. The UKWIR guidance is in the final stages of being updated⁷, and the final draft of the updated guidance has been used to support the development of this Scoping Report.

Preparation of this SEA Scoping Report also takes into consideration the Environment Agency's 2020 Drought Plan Guideline (DPG)⁸ which includes guidance on the preparation of EARs, environmental monitoring and mitigation, as well as SEA, HRA and WFD compliance assessment of Drought Plans. The SEA Scoping Report also takes account of the Natural Resources Wales (NRW) Water Company Drought Plan Technical Guideline⁹ (2017) which includes guidance to be followed by companies wholly or mainly in England but which have proposed drought management actions that affect Wales – this is therefore relevant to the Severn Trent Water drought planning process. NRW's guidance includes a requirement to consider all obligations in relation to the Environment (Wales) Act 2016 and the Well-being of Future Generations (Wales) Act 2015 for these drought management actions.

The SEA process is integrated into the consideration of drought measures to be included in the Drought Plan from the outset, with a range of alternative measures evaluated. The SEA considerations may result in some measures being excluded from the plan, or measures may need to be modified (or mitigation measures developed) to reduce any adverse effects. Once the range of measures to be included in the Drought Plan has been determined, the SEA (and parallel HRA and WFD assessments) will be used to help identify the priority order (phasing) of the measures in relation to the different drought plan triggers, such that those measures with the greatest beneficial effects and/or least adverse effects

⁵ Office of the Deputy Prime Minister (2005) A Practical Guide to the Strategic Environmental Assessment Directive.

⁶ UKWIR (2012) Strategic Environmental Assessment and Habitats Regulation Assessment – Guidance for Water Resources Management Plans & Drought Plans (12/WR/02/A). Prepared by Cascade Consulting.

⁷ UKWIR (2021) Environmental Assessment Guidance for Water Resources Management Plans and Drought Plans (in preparation: prepared by Ricardo Energy & Environment and awaiting final UKWIR approval for publication)

⁸ Environment Agency (2020) Water Company Drought Plan Guideline, December 2020 (Version 1.1)

⁹ Natural Resources Wales (2017) Water Company Drought Plan Technical Guideline, August 2017.

would be introduced at an earlier stage than measures that lead to more significant adverse effects. Any required mitigation measures identified through the SEA process will be incorporated in the Drought Plan. The interactions of the SEA, HRA and WFD assessments are described in further detail in the following sections.

Applying SEA into Drought Planning

Drought Plans encompass a basket of measures that will only be implemented if and when required due to drought conditions. As drought is an unpredictable occurrence, the actual impact of implementation of the Drought Plan over its life is subject to very significant uncertainties. There may or may not be a drought during the period of the plan, and each drought is different in terms of its severity, season, location, duration and influence of other abstractors within the catchment. Each combination of these factors may require a bespoke reaction in terms of measures.

It is impossible to predict in advance which and how many of the measures will be required, as this will depend on the specific drought event. Consequently, the SEA cannot provide a certain prediction of an overall environmental effect of adopting the plan, as its implementation will vary for each drought event. However, scenarios will be discussed in the Drought Plan to show which measures would be required under different drought events (e.g. different severity and duration), and the effects of these scenarios will be discussed in the SEA. The SEA will focus on the effects resulting from the implementation of drought management actions rather than the 'natural' impacts of drought (which provides the baseline environment conditions against the effects will be assessed).

The SEA will include cumulative effect assessments of implementing multiple Drought Plan measures that may affect the same environmental and/or social receptors, as well as considering potential cumulative assessments with other programmes, plans and projects (e.g. other water company Drought Plans).

1.3.1 Stages of Strategic Environmental Assessment

SEA incorporates the following generic stages:

- Stage A: Setting the context, identifying objectives, problems and opportunities, and establishing the baseline (scoping) – this report
- Stage B: Developing and refining options and assessing effects (impact assessment)
- Stage C: Preparing the Environmental Report (recording results)
- Stage D: Consulting on the Draft Plan and the Environmental Report (seeking consensus)
- Stage E: Monitoring the significant effects of the plan or programme on the environment (verification).

Table 1.3 is an extract from the ODPM Practical Guide¹⁰ that sets out the main stages of the SEA process and the purpose of each task within the process. This Scoping Report represents Stage A: Tasks A1 to A4 of the SEA process.

Table 1.3 SEA Stages and Tasks

Stages in the SEA Process	
SEA Stages and Tasks	Purpose
Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope	
Task 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 identify SEA objectives.
Task 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.

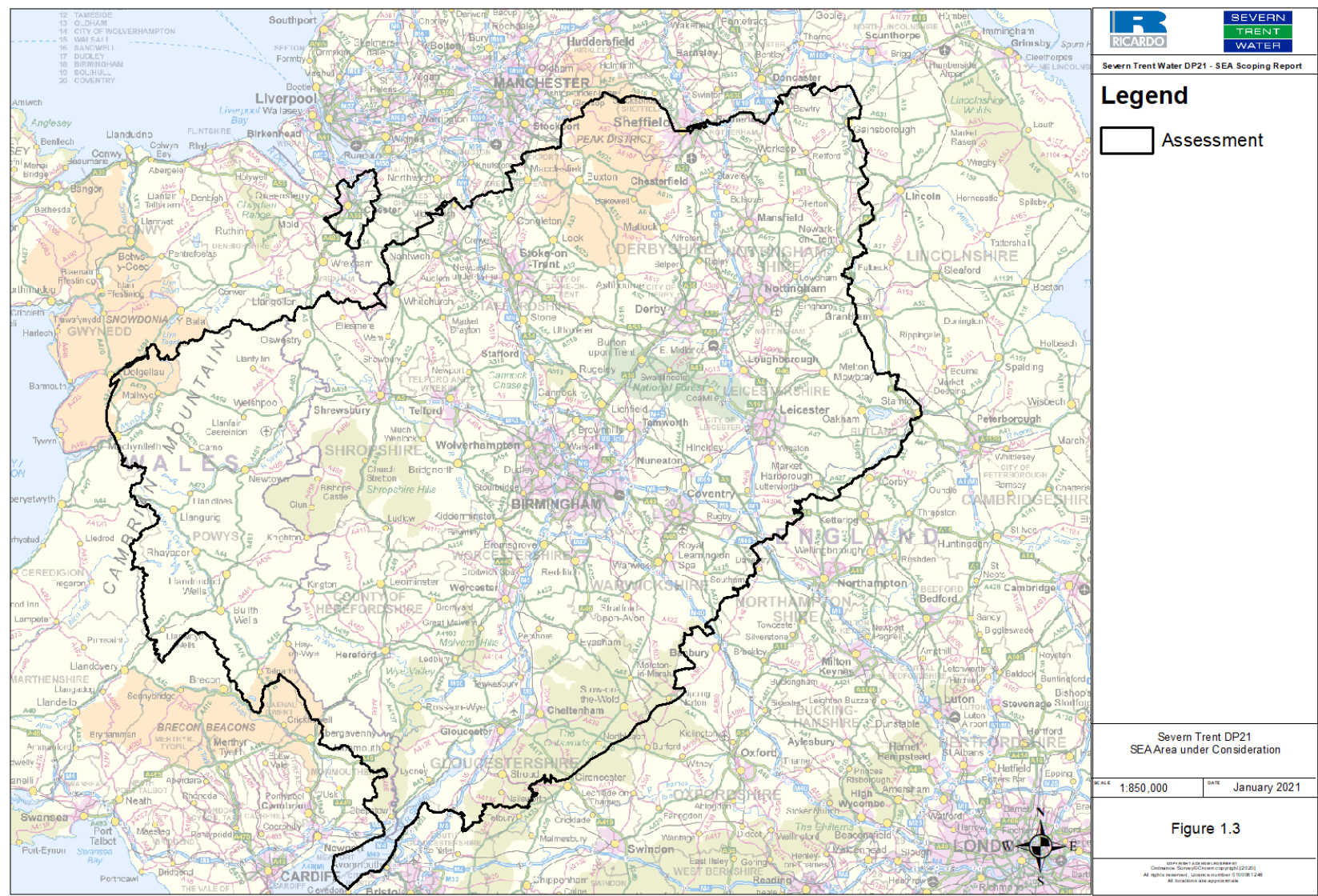
¹⁰ Office of the Deputy Prime Minister (2005). A Practical Guide to the Strategic Environmental Assessment Directive.

Stages in the SEA Process	
SEA Stages and Tasks	Purpose
Task 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.
Task A4. Developing SEA Objectives	To provide a means by which the environmental performance of the plan or programme and alternatives can be assessed.
Task A5. Consulting on the scope of the SEA	To ensure the SEA covers the likely significant environmental effects of the plan or programme.
Stage B: Developing and refining alternatives and assessing effects	
Task B1. Testing the plan or programme objectives against 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.
Task B2. Developing strategic alternatives	To develop and refine strategic alternatives.
Task B3. Predicting the effects of the plan or programme, including alternatives	To predict the significant environmental effects of the plan or programme and its alternatives.
Task B4. Evaluating the effects of the 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.
Task B5. Mitigating adverse effects	To ensure that adverse effects are identified and potential mitigation measures are considered.
Task B6. Proposing measures to monitor the environmental effects of plan or programme implementation	To detail the means by which the environmental performance of the plan or programme can be assessed.
Stage C: Preparing the Environmental Report	
Task 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	
Task D1. Consulting the public and consultation bodies on the draft plan or programme and the 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. To gather more information through the opinions and concerns of the public.
Task 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.
Task D3. Making decisions 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 the significant effects of the plan or programme on the environment	
Task 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.
Task E2. Responding to adverse effects	To prepare for appropriate responses where adverse effects are identified.

1.3.2 Spatial Scope of the SEA

Some of the options to be considered lie outside of the Severn Trent Water supply area: consequently, the spatial scope of the SEA is larger than the company's water supply area to cover locations that may be affected by drought management measures being considered through the drought planning process, including parts of Wales. The area under consideration for the SEA is shown in **Figure 1.3**.

Figure 1.3 SEA Area Under Consideration



1.4 Structure of the Scoping Report

This SEA Scoping Report presents the findings of SEA Tasks A1 to A4 set out in **Table 1.1** and provides the consultation bodies and other interested stakeholders with an opportunity to express their opinions on the scope and level of the detail to be included in the SEA Environmental Report. The Scoping Report is structured as follows:

- **Section 1** (this section) – describes the requirement for, purpose and process of the SEA, and its context in relation to the Draft Drought Plan 2021.
- **Section 2** - Policy Context; identifies key messages and environmental protection objectives from other relevant plans and programmes.
- **Section 3** - Environmental Baseline Review; draws out the key environmental issues Severn Trent Water intends to consider in the SEA. Identifies the current and future baseline conditions within the area of potential influence of the Draft Drought Plan 2021.
- **Section 4** – Proposed SEA Objectives and Assessment Framework; develops the objectives to form the basis of the assessment, and introduces the assessment approach and framework to consider the environmental effects of the schemes and programmes to be included in the Draft Drought Plan 2021.
- **Section 5** – Next Steps; sets out the next stages and tasks in undertaking the SEA, and presents a proposed structure for the Environmental Report.

1.5 Consultation

1.5.1 Consultation throughout the SEA process

The statutory consultation bodies and other interested stakeholders will be invited to express their views on this Scoping Report and the scope of the SEA proposed in accordance with SEA Regulation 12(5).

The subsequent Environmental Report will take into consideration the responses received to the SEA Scoping consultation. The Environmental Report will provide assessments of the adverse and beneficial effects of the various drought management measures and the overall Drought Plan, and this will be issued for public consultation alongside the consultation on the draft Drought Plan.

Feedback from the consultation on the Environmental Report will be considered by Severn Trent Water and incorporated in a formal Statement of Response, setting out how the feedback may influence the finalisation of the Drought Plan.

The company will prepare an SEA Statement once the Final Drought Plan has been approved by the Secretary of State. This Statement will set out how the SEA and any views expressed by the consultation bodies or the public have influenced the Final Drought Plan.

1.5.2 Consultation on the Scoping Report

The consultation period for this Scoping Report will run from 1st February 2021 for 5 weeks. Comments should be sent before 8 March 2021 with “Drought Plan SEA consultation” in the subject via email to futureconsultation@severntrent.co.uk

or in writing to the following address:

FAO Thomas Barden
Severn Trent Centre (5th Floor)
2 St. John's Street
Coventry
CV1 2LZ

2 Policy Context

2.1 Introduction

In accordance with the SEA Regulations, a review of relevant plans, policies and programmes is presented in **Appendix A**. A summary of key policy objectives derived from the review is presented in **Table 2.1** of this section.

2.2 Review of Policies, Plans and Programmes

Identifying other relevant plans, policies and programmes, as well as environmental protection and social objectives, is one of the first steps in undertaking SEA, forming part of Stage A of the SEA process. The review identified how Severn Trent Water's Drought Plan might be influenced by other plans, policies, programmes and other objectives which the Drought Plan should take into account. This information helped to set the objectives for the SEA process.

Relevant plans, policies and programmes were identified from the wide range that has been produced at an international, national and regional level. The emphasis is on '*relevant*': plans and programmes that have no likely interaction with the Drought Plan (i.e. they are unlikely to influence the plan, or be influenced by it), have been excluded from the review. Important relevant plans, policies and programmes and strategic level plans that fall within the area under consideration have been considered, including relevant plans, policies and programmes in Wales as some key water sources used by Severn Trent Water are located within Wales.

The key policy objectives derived from the review of policies, plans and programmes are documented below in **Table 2.1**. **Appendix A** provides details of all the policies, plans and programmes identified through the review.

Table 2.1 Key Policy Objectives derived from the Review of Policies, Plans and Programmes

SEA Topic	Key Objectives
Biodiversity, flora and fauna	<ul style="list-style-type: none"> • Conservation and enhancement of the natural environment and of biodiversity, particularly internationally and nationally designated sites and priority habitats and species (NERC act S41 for England and Section 7 of the Environment Act (Wales) for Wales), whilst taking into account future climate change. • Promote a catchment-wide approach to water use to ensure better protection of biodiversity. • To achieve favourable condition for priority habitats and species in particular designated sites. • Avoidance of activities likely to cause irreversible damage to natural heritage. • Support well-functioning ecosystems, respect environmental limits and capacities, and maintain/enhance coherent ecological networks, including provision for fish passage and connectivity for migratory/mobile species. • Strengthen the connections between people and nature and realise the value of biodiversity. • Protection, conservation and enhancement of natural capital. Ecosystem services from natural capital contributes to the economy and therefore should be protected and, where possible, enhanced. • Avoidance of activities likely to cause the spread of invasive non-native species (INNS). • A need to protect the green infrastructure network.

SEA Topic	Key Objectives
Population and human health	<ul style="list-style-type: none"> Water resources play an important role in supporting the health and recreational needs of local communities. To ensure all communities have a clean, safe and attractive environment in which people can take pride. To ensure secure, safe, reliable, sustainable and affordable supplies of water are provided. Access to high quality open spaces and opportunities for sport and recreation can make an important contribution to the health and well-being of communities. Promotion of healthy communities and protection from risks to health and wellbeing (including where relevant in Wales, supporting the objectives of the Well Being of Future Generations (Wales) Act 2015). Promotion of a sustainable economy supported by universal access to essential utility and infrastructure services.
Material assets and resource use	<ul style="list-style-type: none"> Promote sustainable management of natural resources, sustainable production and consumption whilst seeking to reduce the amount of waste generated by using materials, energy and water more efficiently. Consider issues of water demand, water supply and water quality in the natural environment and ensure a sustainable use of water resources. Contribute to a resource efficient, green and competitive low carbon economy. Maintain a reliable public water supply and ensure there is enough water for human uses, as well as providing an improved water environment. Minimise the production of waste, ensure waste management is in line with the 'waste hierarchy', and eliminate waste sent to landfill. Promote the sustainable management of natural resources (including where relevant in Wales, supporting the objectives of the Well Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016).
Water	<ul style="list-style-type: none"> Maintain and improve water quality (surface waters and groundwater). Improve the quality of the water environment and the ecology which it supports, and continue to provide high levels of drinking water quality. Expand the scope of water protection to all waters, surface waters and groundwater. Ensure appropriate management of abstraction and protect flow and level variability across the full range of regimes from low to high conditions. Develop a resilient and flexible water management approach to cope with changing climate, population and economic conditions. Balance the abstraction of water for supply with the other functions and services the water environment performs or provides. Encourage more efficient use of water and promote awareness of water sustainability. Steer new development to areas with the lowest probability of flooding and manage any residual flood risk, taking account of the impacts of climate change. Promote a catchment based approach to the management and work with local stakeholders to deliver catchment-based solutions to water quantity and quality. Develop a resilient and flexible water management approach to cope with changing climate, population and economic conditions. Reduce flood risk to people, residential and non-residential properties, community facilities and key transport links, as well as designated nature conservation sites and heritage assets and landscapes of value. Reduce risk of flooding from reservoirs.
Soil, geology and land use	<ul style="list-style-type: none"> Protect and enhance the quality and diversity of geology (including geological SSSIs) and soils, including geomorphology and geomorphological processes which can be lost or damaged by insensitive development.

SEA Topic	Key Objectives
	<ul style="list-style-type: none"> • Ensure that soils will be protected and managed to optimise the varied functions that soils perform for society (e.g. supporting agriculture and forestry, protecting cultural heritage, supporting biodiversity, as a platform for construction), in keeping with the principles of sustainable development. • Promote catchment-wide approach to land management by relevant stakeholders, in order to benefit natural resources, reduce pollution and develop resilience to climate change. • Promote mixed use developments, and encourage multiple benefits from the use of land in urban and rural areas, recognising that some open land can perform many functions. • Encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value.
Air and climate	<ul style="list-style-type: none"> • Reduce greenhouse gas emissions. Targets include: reduce the UK's greenhouse gas emissions by at least 80% (relative to 1990 levels) by 2050. • Reduce the effects of air pollution on ecosystems. • Improve overall air quality. • Minimise energy consumption, support the use of sustainable/renewable energy and improve resilience to climate change. • Build in adaption to climate change to future planning and consider the level of urgency of associated risks of climate change impacts accordingly. • Need for adaptive measures to respond to likely climate change impacts on water supply and demand. • Sustain compliance with and contribute towards national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. • Minimise energy consumption, support the use of sustainable/renewable energy and improve resilience to climate change.
Archaeology and cultural heritage	<ul style="list-style-type: none"> • Built development in the vicinity of historic buildings could have implications for the setting and/or built fabric and cause damage to any archaeological deposits present on the site. • Ensure active management of the Region's environmental and cultural assets. • Ensure effects resulting from changes to water level (surface or sub-surface) on all water dependent historical and cultural assets are avoided. Consider effects on important wetland areas with potential for paleo-environmental deposits. • Promote the conservation and enhancement of the historic environment, including the promotion of heritage and landscape as central to the culture of the region and conserve and enhance distinctive characteristics of landscape and settlements. • Conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations.
Landscape and visual amenity	<ul style="list-style-type: none"> • Protection and enhancement of landscape (including designated landscapes, landscape character, distinctiveness and the countryside). • Abstraction and low river flows could negatively affect landscape and visual amenity. • Enhance the value of the countryside by protecting the natural environment for this and future generations. • Improve access to valued areas of landscape character in sustainable ways to enhance its enjoyment and value by visitors and stakeholders.

3 Environmental Baseline Review

3.1 Introduction

An essential part of the SEA process is to identify the current baseline conditions and their likely evolution in the absence of the draft Drought Plan 2021. It is only with knowledge of baseline conditions that potential impacts of the draft Drought Plan can be identified, monitored, and if necessary mitigated. However, it is important to note that the future baseline is not a 'do nothing' option with respect to water resources planning. There will be elements of Severn Trent Water's current Water Resources Management Plan (published in 2019) that will continue in the absence of the new Drought Plan 2021 (e.g. actions to augment water supply reliability, further increase water metering of households and continuing measures to reduce water leakage and promote water efficiency). These measures will act to alter the future baseline.

Baseline data have been drawn from a variety of sources, including a number of the plans, policies and programmes reviewed and summarised earlier in Section 2 (**Table 2.1**). The sections below also summarise the likely future trends in the environmental and social issues considered (where information is available to do so). The key issues arising from the review of baseline conditions are summarised at the end of each sub-section.

3.1.1 Limitations of the data and assumptions made

The area under consideration for this SEA is substantial presenting some challenges around extrapolating information from data collated at differing spatial resolutions. Relevant spatial data have been obtained for each of the SEA topics and presented as mapped information as much as possible to summarise the extensive datasets involved.

In some instances, reporting cycles mean that the available information is dated (as indicated for each dataset) but if information is updated before the Environmental Report is produced, the more recent data will be used in the assessment.

The principal limitations surround the future social and environmental baseline where there is substantial differences in the availability and temporal resolution of robust projections across the various SEA topic areas.

3.2 Biodiversity, fauna and flora

3.2.1 Baseline

Biodiversity comprises the variety of plants (flora) and animals (fauna) in an area, and their associated habitats. The importance of preserving biodiversity is recognised from an international to a local level. Biodiversity has importance in its own right, and has value in terms of quality of life and amenity¹¹.

The assessment area includes a variety of sites that are designated at international, national or local level as important for biodiversity, flora and fauna (see **Figures 3.1 and 3.2**), including:

- 5 Ramsar ¹² Sites
- 4 SPA ¹³
- 25 SACs ¹⁴

¹¹ Well-being of Future Generations (Wales) Act 2015

¹² Ramsar sites are wetlands of international importance designated under the Ramsar Convention.

¹³ Special Protection Areas (SPAs) are strictly protected sites classified in accordance with Article 4 of the EC Directive on the conservation of wild birds (79/409/EEC), also known as the Birds Directive, which came into force in April 1979. They are classified for rare and vulnerable birds, listed in Annex I to the Birds Directive, and for regularly occurring migratory species. www.jncc.org.uk

¹⁴ SACs are strictly protected sites designated under the EC Habitats Directive. Article 3 of the Habitats Directive requires the establishment of a European network of important high-quality conservation sites that will make a significant contribution to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive (as amended). www.jncc.org.uk

- Some 658 SSSIs¹⁵
- 24 National Nature Reserves (NNR)¹⁶
- Some 287 Local Nature Reserves (LNR)¹⁷.

Information on all international, nation and local designated sites is held on GIS layers and will be used to inform the SEA of the draft Drought Plan.

Ancient woodlands in England and Wales are important habitats that should be protected. An ancient woodland is any wooded area that has contained woodland continuously since at least 1600 AD. They tend to be more ecologically diverse and of a higher nature conservation value than those developed recently, or where cover on the site has been intermittent. They often also have cultural importance. Areas of ancient woodland are shown in **Figure 3.2**. The total ancient woodland area covers 3.2% of the SEA area under consideration (920 km²).

A series of National Character Areas (NCAs) have been identified in England and Wales of areas of countryside identified by the unique combination of physical attributes, wildlife, land use and culture. Key issues regarding habitat type are presented in **Table 3.2** and National Character Areas (NCAs) that cover the assessment area are shown in **Figure 3.8** together with Areas of Outstanding Natural Beauty (AONB) (note: **Figure 3.8** is presented later in this Section under the Landscape and Visual Amenity topic).

The WFD ecological status classification considers the condition of biological quality elements (e.g. aquatic invertebrates, plants and fish), the morphology of the habitat available in each water body (e.g. a defined stretch of river), and concentrations of supporting physico-chemical elements (e.g. oxygen or ammonia and concentrations of specific pollutants). See the 'Water' topic (later in this section) for details on water quality and the ecological condition of surface water bodies.

Water abstraction and associated infrastructure can sometimes result in adverse effects on water-related sites. Impacts on biodiversity may include the drying out of wetland habitats, lower water levels and slower flows in watercourse, deterioration in water quality, change in water temperature, or the transfer or proliferation of invasive species. **Table 3.1** presents details of water dependent/related internationally designated sites within the assessment area, including SPAs, SACs and Ramsar sites indicating the relevant WRZ each site is found within.

The River Severn River Basin District and Humber River Basin District WFD River Basin Management Plans (RBMPs) for the assessment area identify pollution from rural areas (including sediment bound phosphorous and nitrates) as one of the major issues affecting the ecology of rivers. Other major pressures affecting the rivers in the assessment area include treated effluent discharges from wastewater treatment works, untreated discharges from intermittent sewer overflows and physical modifications to natural waterbodies¹⁸.

¹⁵ Natural England now has responsibility for identifying and protecting the SSSIs in England under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000).

¹⁶ NNRs are protected under Sections 16 to 29 of the National Parks and Access to the Countryside Act, 1949 and the Wildlife and Countryside Act, 1981.

¹⁷ LNRs – places with wildlife or geological features that are of special interest locally.

¹⁸ Natural Resource Wales (2016) The State of Natural Resources Report (SoNaRR): Assessment of the Sustainable Management of Natural Resources. Technical Report. Chapter 3. Summary of extent, condition and trends of natural resources and ecosystems in Wales - <https://naturalresources.wales/media/679693/chapter-3-state-and-trends-final-for-publication.pdf>

Figure 3.1 International Ecological Designated Sites

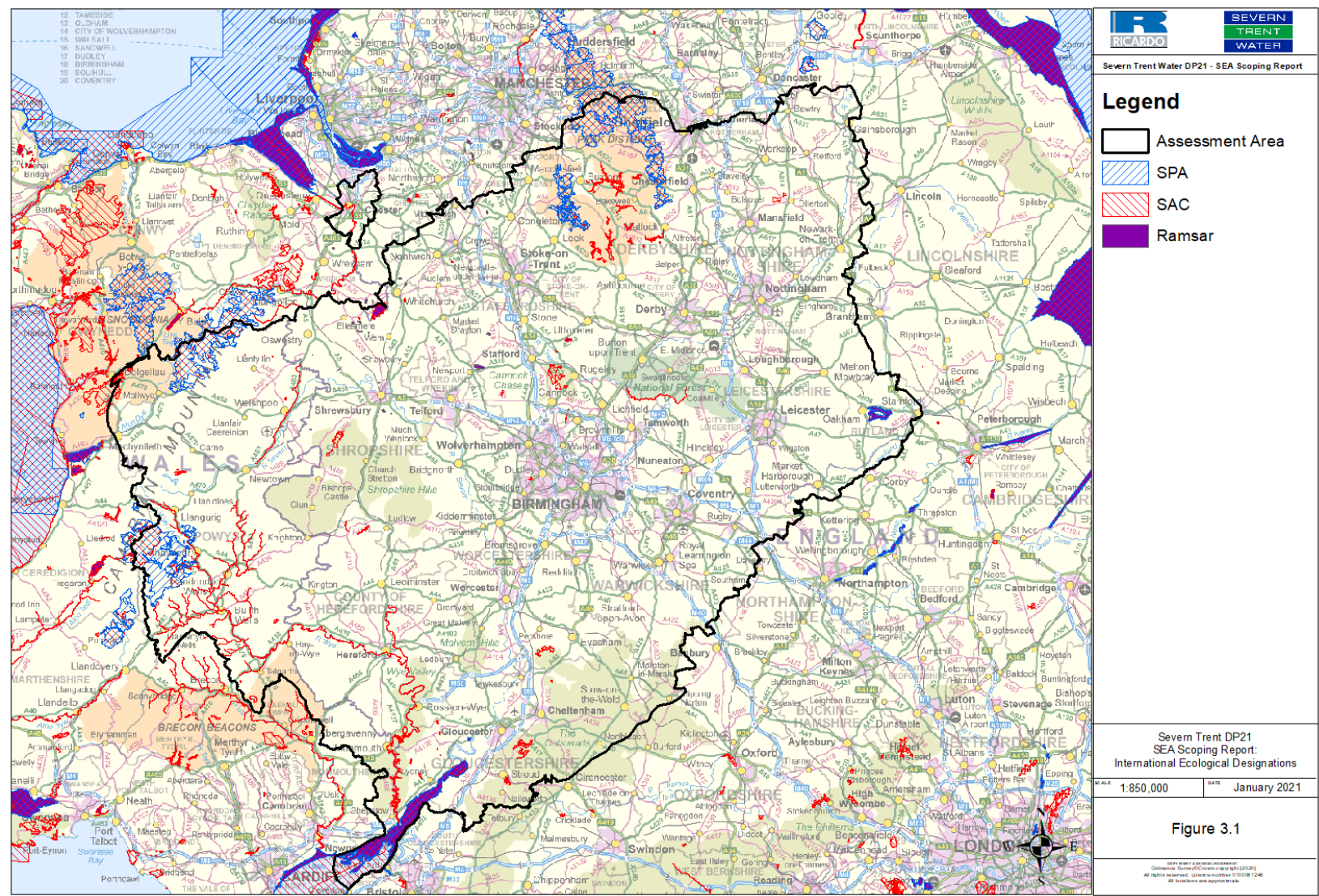


Figure 3.2 National Ecological Designated Sites

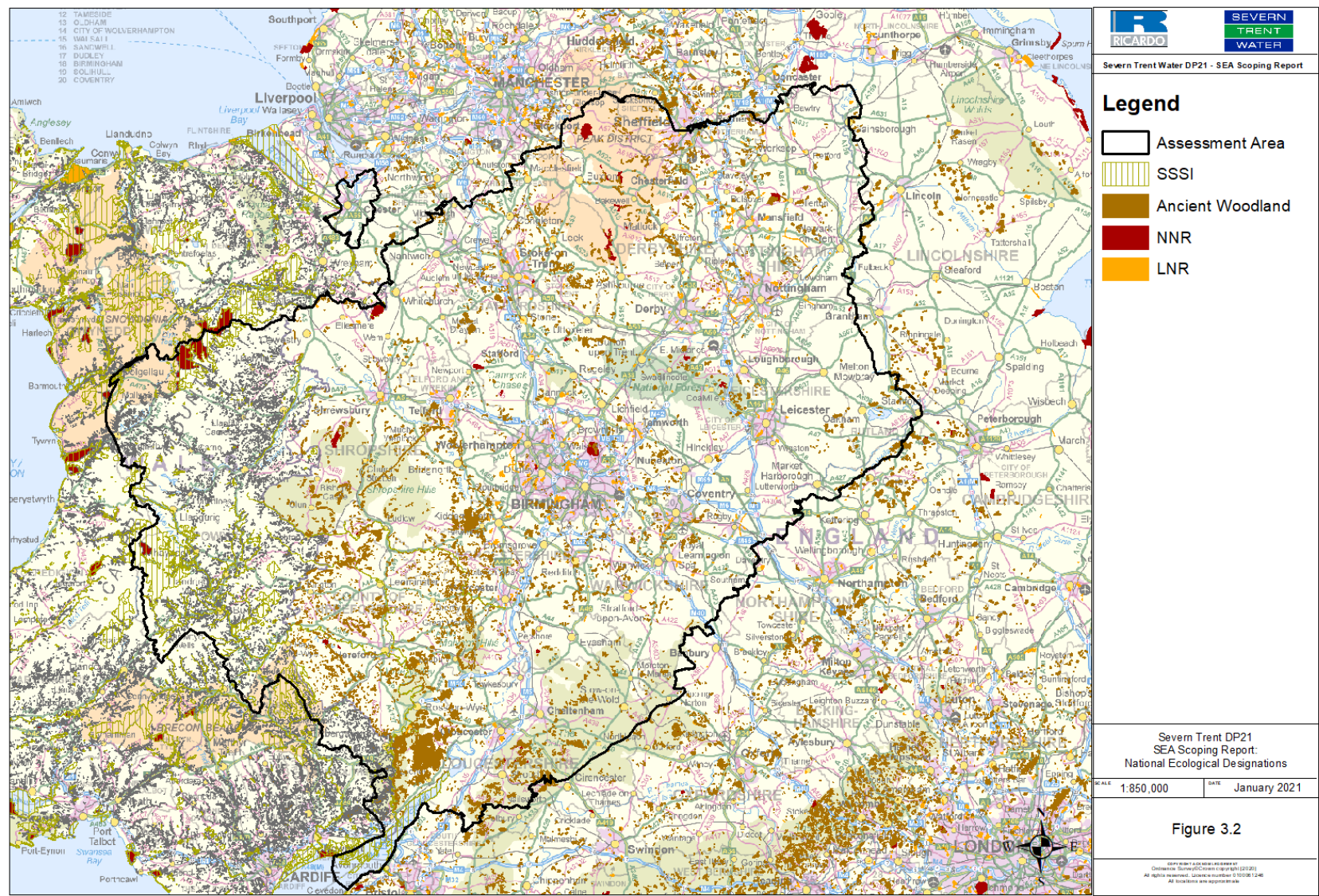


Table 3.1 Designated Sites within/potentially connected to the Severn Trent Drought Plan 2021 SEA Assessment Area

Site Name and Designation Type	Water Resource Zone
Bees Nest & Green Clay Pits SAC, SSSI Peak District Dales SAC South Pennines Moors Phase 2 SPA Peak District Moors (South Pennines Moors Phase1) SPA, SAC	Strategic Grid
River Mease SAC Ensor's Pool SAC	Strategic Grid, Wolverhampton
Fens Pool SAC Lypard Grange Ponds SAC	Strategic Grid, Wolverhampton
Cotswold Beechwoods SAC	Strategic Grid, Forest and Stroud
The Stipperstones and the Hollies SAC Clarepool Moss SAC Fenn's, Whixall and Bettisfield SAC Wem and Cadney Mosses SAC Brown Moss SAC Midland Meres and Mosses Phase 2 Ramsar Site No SPAs	North Staffs
Montgomery Canal SAC Granllyn SAC Midland Meres and Mosses Phase 2 Ramsar Site Fenn's, Whixall, Bettisfield, Wem SAC Cadney Mosses SAC	Shelton, Strategic Grid, North Staffs, Ruyton, Wolverhampton,
Breedon Hill SAC Dixton Wood SAC	Strategic Grid
Severn Estuary Ramsar Site, SPA, SAC Walmore Common Ramsar Site, SPA	Shelton, Forest and Stroud
Midland Meres and Mosses Phase 1 Ramsar / West Midlands Mosses SAC Chartley Moss SAC and Ramsar Cannock Chase SAC Pasturefields Saltmarsh SAC Motley Meadows SAC Cannock Extension Canal SAC Cope Mere Ramsar	North Staffs, Stafford, Shelton
Peak District Dales SAC South Pennines Moors Phase 2 SPA	North Staffs, Strategic Grid

Site Name and Designation Type	Water Resource Zone
Parts of the River Clun, which is a tributary of the Teme, are classed as a SAC due to the biodiversity of habitats and species in the river	Bishop Castle, Strategic Grid
Rutland Water SPA	Rutland
River Dee and Bala Lake SAC Dee Estuary Ramsar Site, SPA, SAC	Chester
River Wye SAC River Wye and River Lugg SSSIs Drostre Bank SAC Elenydd SAC Llangorse Lake SAC Mynydd Epynt SAC Rhôs Gôch SAC Elenydd - Mallaen SPA Mersey Estuary SAC, SPA, Ramsar Humber Estuary SAC, SPA, Ramsar The River Wye flows into the Wye Estuary, which subsequently discharges into the Severn Estuary. The Wye Estuary is designated as a SAC and the Severn Estuary as a SSSI, SAC, SPA and a Ramsar site. Migneint – Arenig – Dduallt SPA Thorne and Hatfield Moors SPA Lleyn Peninsula and the Sarnau SAC Rutland Water Ramsar Site, SPA Cors Fochno and Dyfi Ramsar Site, SPA, SAC Brown Moss SAC Cadair Idris SAC	Not located within a Severn Trent Water WRZ but site is located within the boundary of the SEA assessment area.

A large proportion of the designated sites within the assessment area are water dependent and therefore changes in the water regime (surface or groundwater) through water resources changes could potentially affect the integrity and condition of these designated sites. The main potential effects of the Drought Plan that the SEA needs to take into account with regard to the designated sites include:

- Groundwater level impacts on terrestrial habitats as a result of abstraction from surface water or groundwater.
- Flow/level impacts on aquatic habitats as a result of abstraction changes and/or changes to flow releases from reservoirs to downstream rivers
- Effects on species or habitats associated with the increased occurrence of eutrophication where freshwater flows are reduced and impact on dilution of point discharges and diffuse runoff.
- Increased turbidity and concentration of other pollutants due to reductions in freshwater dilution.
- Changes in channel morphology due to changes in flows, leading to the reduction, loss, fragmentation or disturbance of aquatic habitats.

European Protected Species (EPS) are those which are afforded protection under the Habitats Regulations. Under these Regulations it is a criminal offence to deliberately kill, capture, or disturb a EPS, or to damage or destroy the breeding site or resting place of such an animal. Thus, EPS are protected wherever they occur and not just within designated sites. The following is a list of aquatic EPS that are known to exist within the SEA area:

- Freshwater pearl mussel
- White clawed crayfish
- Brook lamprey
- River lamprey
- Sea lamprey
- Allis shad
- Twaite shad
- Bullhead
- Atlantic salmon
- Great crested newt
- Otter
- Floating water plants

Various species are also afforded protection under other pieces of national legislation, including the Wildlife and Countryside Act 1981 (as amended) and the Natural Environment and Rural Communities (NERC) Act 2006. As well as covering some species that are listed in the Habitats Regulations, this Act also includes other species that are of national conservation importance, for example the water vole. European eel receives protection under The Eel (England and Wales) Regulations 2009.

Although the Drought Plan is water focused, terrestrial habitats and species may also need to be considered, for example in relation to any potential construction works that might be required (e.g. temporary pipelines or work to bring water sources back into operational use).

There are a number of habitats that have been identified as being of conservation importance under NERC Act 2006 Section 41 and Section 7 of the Environment (Wales) Act 2016. Some of these Section 41/Section 7 habitats are present in the assessment area, including:

- Eutrophic standing waters
- Mesotrophic lakes
- Blanket bog
- Fens (e.g. alkaline fens in the Wye Valley)
- Lowland meadows
- Lowland fens
- Wet woodland
- Blanket, basin and valley mires
- Reedbeds
- Upland hay meadows
- Coastal and flood plain grazing marsh
- Lowland raised bog

3.2.2 Future Baseline

It is not expected that many additional sites will be designated under international or national legislation during the 5-year life of the Drought Plan, consequently the focus of the SEA will be on assessing the

potential effects on the conservation objectives of sites that may be affected by the Drought Plan. A range of measures are included in the management plans for each site to contribute to these objectives and, assuming sufficient resources are in place, but given the timescales involved in achieving these objectives it is unlikely there will be material changes to condition of the sites over the 5-year period covered by the Drought Plan. A similar trend is likely for achievement of objectives associated with the Section 41/Section 7 habitats.

The number of locally designated sites is also unlikely to materially change in the 5-year period of the Drought Plan. A modest but improving trend in condition of these sites is anticipated over the next 5 years subject to continued management interventions.

More broadly, government policy in both England and Wales encourages partnership working by a wide range of organisations (including water companies where applicable) to take a catchment and/or landscape-scale perspective to the management of biodiversity, flora and fauna. Catchment-based approaches are likely to be increasingly taken with respect to the delivery of biodiversity and ecological objectives for water-dependent sites and species, with partnership working a key component of the delivery of improvement activities. This includes recent 2020 “Green Recovery” funding from Defra in England in response to the Covid-19 pandemic and the increased recognition of the importance of nature for health and well-being.

The Environment (Wales) Act (2016) and the Well Being of Future Generations (Wales) Act 2015 are a catalyst for enhancing the sustainable management of natural resources in Wales – including preventing significant damage to ecosystems which need to be healthy to withstand increased pressures and demands.

3.2.3 Key Issues

The key sustainability issues arising from the baseline assessment for biodiversity are:

- The need to protect or enhance biodiversity, particularly protected sites designated for nature conservation.
- The need to avoid activities likely to cause irreversible damage to natural heritage.
- The need to take opportunities to improve connectivity between fragmented habitats.
- The need to control the spread of invasive non-native species (INNS).
- The need to engage more people in biodiversity issues so that they personally value biodiversity and know what they can do to help.

3.3 Population and Human Health

3.3.1 Baseline

Population

The East Midlands and West Midlands regions are projected to increase their population by 7% and 6.1% respectively by 2028, based on the 2018 baseline figures of 4.8 million and 5.9 million respectively. The West Midlands Region contains one of the largest conurbations in England, as well as some of the country's most rural and sparsely populated counties. Birmingham, the second largest local authority in the UK by population, had an estimated population of 1,141,816 million people according to the Office of National Statistics (ONS) mid-2019 estimates¹⁹. In the South West region of England, the population is projected to increase from 5.6 million to 5.9 million by 2028 whilst in Wales the population will grow by 2.7% to an estimate of 3.2 million. To provide context, the population in England as a whole is expected to increase by 5% by 2028. **Table 3.2** shows the population statistics and projections for the assessment area.

¹⁹ ONS Local Authority population projections for England: Mid-year estimates 2019-based
<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

The long-term issues relating to population growth and associated requirement for housing and water (and wastewater) infrastructure provision are not a key consideration in relation to the short-term horizon (5 years) covered by the Drought Plan.

Table 3.2 Population²² statistics and projections (millions)

Period	2018	2028	Population change (%)
Region			
West Midlands	5.9	6.2	6.1%
East Midlands	4.8	5.1	7%
Cheshire West and Chester	0.34 ²⁰	0.36 ^{21*}	5.8%
South West	5.6	5.9	6.8%
Wales	3.1	3.2	2.7%
England	55.9	58.7	5%

*This estimate is based on projected population change to 2030.

Human Health and Deprivation

The Drought Plan has the potential to influence quality of life, including human health, well-being, amenity and community, through measures to secure essential water supplies such as alterations to the operation of existing infrastructure, temporary water use restrictions and drought orders. For example, additional leakage reduction activities in drought may lead to greater traffic congestion due to street works to repair leaks, with temporary effects relating to odour and noise nuisance.

Drought management and planning is of critical importance in maintaining reliable and safe water supplies for the health and wellbeing of the population supplied by Severn Trent Water. In times of drought, water levels in reservoirs used for recreation may be too low for the recreational activities to continue (e.g. sailing).

The SEA will assess the potential effects of each drought management option on the local environmental quality and the potential implications (adverse or beneficial) on human health.

In 2011, 45.1% of the population in West Midlands reported to be in 'very good health', with a further 34.8% reporting to be in 'good' health. For Cheshire West and Chester a slightly higher percentage of the population (48.5%) is reported to be in 'very good health' and a slightly low percentage (33.1%) are reported to be in 'good health'. In Wales, a slightly higher percentage of the population (46.6%) was reported as in 'very good health', although those who reported to be in 'good' health only amassed to 31.1%. These figures are generally aligned to the national averages across England²³. It has been shown that, in some cases, people in disadvantaged areas experience greater exposure to negative impacts on human health including air pollution, flooding and proximity to large industrial and waste management sites²⁴.

The Index of Multiple Deprivation combines a number of indicators, chosen to cover a range of economic, social and housing issues²⁵, into a single deprivation score for each Lower Super Output

²⁰ Cheshire West and Chester (2018) Population estimates 2018.

https://inside.cheshirewestandchester.gov.uk/find_out_more/datasets_and_statistics/statistics/population

²¹ Cheshire West and Chester (2017) Population Forecasts.

<http://inside.cheshirewestandchester.gov.uk/GetFile?fileUrl=/keystatistics/population%20forecast%20report%20lh%20june%202017-06-05.pdf&extension=pdf>

²² ONS (2021) Subnational population projections for England: 2018-based -

<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/subnationalpopulationprojectionsforengland/2018based>

²³ Office for National Statistics - General Health in England and Wales: 2011 and comparison with 2001. Available at:

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/articles/generalhealthinenglandandwales/2013-01-30>

²⁴ Defra (2006) Air Quality and Social Deprivation in the UK: an environmental inequalities analysis

²⁵ Income Deprivation, Employment Deprivation, Health Deprivation and Disability, Education Skills and Training Deprivation, Barriers to Housing and Services, Living Environment Deprivation, and Crime.

Area²⁶ in the UK. This allows each area to be ranked relative to one another according to their level of deprivation. The Indices are used widely to analyse patterns of deprivation, identify areas that would benefit from special initiatives or programmes and as a tool to determine eligibility for specific funding streams. The English Index of Multiple Deprivation (2019)²⁷ and the Welsh Index of Multiple Deprivation (2015)²⁸ have been developed slightly differently and cannot be compared directly. **Figure 3.3** shows the Index of Multiple Deprivation across the assessment area.

As is the case with the rest of the UK, most large urban centres in the assessment area contain areas with high levels of deprivation. These include Birmingham, Nottingham, Mansfield, Sheffield, Stoke-on-Trent and Leicester. However, there are also pockets of deprivation associated with smaller population centres, for example in Worcester, Coventry, Derby, Gloucester, Cheltenham and Kidderminster.

Data relating to drinking water quality, pollution incidents and air quality, which may have indirect effects on amenity and human health are covered in separate sections of this Scoping Report.

Measures that may be included in the Drought Plan could potentially affect communities in terms of nuisance and other adverse effects on well-being. It is not possible to collect baseline data against which to assess such effects. These effects will need to be assessed in the SEA based on the specific effects identified and taking account of any planned mitigation measures to be included.

Recreation and Tourism

Drought Plan options have the potential to affect areas with recreation value. Effects could arise as a result of scheme operation (for example on river water levels or reservoir levels), or due to scheme construction (for example due to restricted access) where relevant.

Figures 3.2 and 3.9 show some of the areas that may be used for recreation within the assessment area. This includes AONBs (see Landscape and Visual Amenity topic), NNRs and LNRs (see Biodiversity, Flora and Fauna topic).

There are a variety of opportunities for recreation and tourism within the assessment area. Many of the recreational and cultural offerings are represented in other topic areas in the baseline. For example, the WRZs include a number of water resources of recreation importance (see Section 4.5) including canals (e.g. the Shropshire Union Canal and the Grand Union Canal), reservoirs for sailing or fishing and river reaches of particular importance with respect to navigation (e.g. the large sections of the Warwickshire River Avon) and angling (coarse and salmonid).

Other, non-water based, recreational and cultural resources in the assessment area include a number of nature reserves, three internationally recognised World Heritage Sites and 314 Registered Parks and Gardens. The landscape section below presents the landscape baseline, which includes a number of AONBs and National Parks within the assessment area. Public areas of open space, National Parks (see Landscape and Visual Amenity topic), country parks²⁹, Public Rights of Way, walking routes and cycle routes are also important with respect to recreation and tourism. The National Planning Policy Framework (NPPF) for England states planning policies should protect and enhance public rights of way and access. All Local Authorities are required to prepare and publish Rights of Way Improvement Plans (ROWIPs). These plans explain how improvements made by local authorities to the public rights of way network will provide a better experience for a range of users, including pedestrians, cyclists, horse riders, horse and carriage drivers, people with mobility problems, and people using motorised vehicles (e.g. motorbikes).

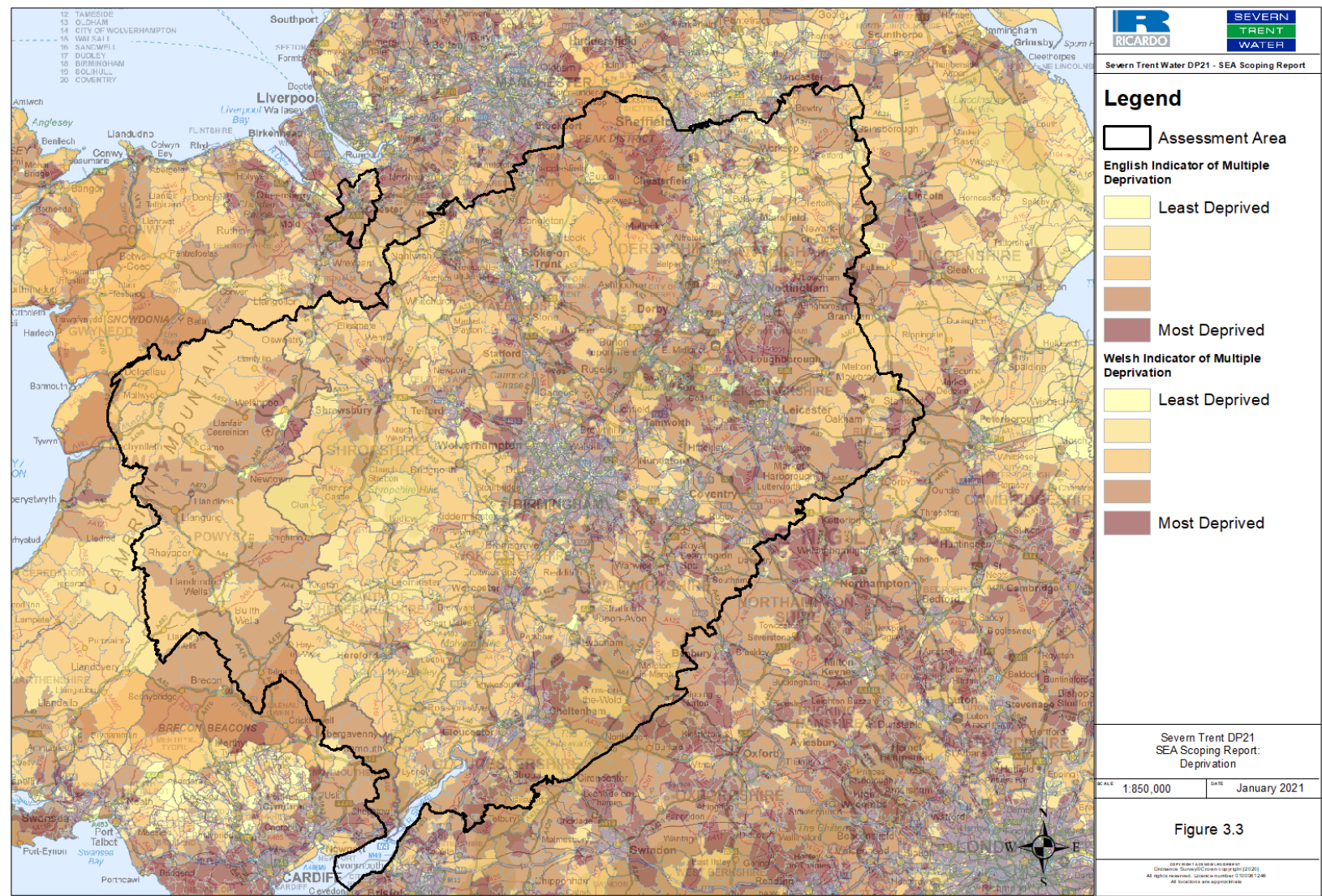
²⁶ Super Output Areas (SOAs) are a set of geographical areas developed following the 2001 census. The aim was to produce a set of areas of consistent size, whose boundaries would not change, suitable for the publication of data such as the Indices of Deprivation. They are an aggregation of adjacent Output Areas with similar social characteristics. Lower Layer Super Output Areas (LSOAs) typically contain 4 to 6 OAs with a population of around 1500

²⁷ <https://www.gov.uk/guidance/english-indices-of-deprivation-2019-mapping-resources>

²⁸ <https://www.gov.uk/government/statistics/welsh-index-of-multiple-deprivation-annual-indicator-data-2015>

²⁹ Area designated for people to visit and enjoy recreation in a countryside environment

Figure 3.3 Index of Multiple Deprivation



The NPPF defines green infrastructure as 'a network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities' (including rivers and ponds). Local planning authorities are required to plan positively for strategic networks of green infrastructure, and take account of the benefits of green infrastructure in reducing the risks posed by climate change. The majority of Local Authorities have therefore developed Green Infrastructure strategies or studies addressing these issues. Green infrastructure will often play a large part in local recreational resources.

Tourism is important in the assessment area and supports a substantial number of jobs. The West Midlands area, in particular, is the 3rd most visited region of the UK, with 1.4 million visits undertaken by overseas visitors in 2015.

3.3.2 Future Baseline

The population in the assessment area is expected to grow at a rate between 5.8% and 7% (see **Table 3.2**), with an increasing proportion of people at or above state pension age. Household projections show potential increases of between 21% and 45% across the assessment area, with an increasing proportion of one person households and average household size decreasing³⁰.

In response to recent studies, access to the recreational resources, green spaces and the historic environment will have greater importance in future planning³¹. For example, the National Ecosystem Assessment and the Marmot Review, *Fair Society, Healthy Lives*, demonstrate the positive impact that nature has on mental and physical health and, as a result, the Government intends to establish a Green Infrastructure³² Partnership with civil society to support the development of green infrastructure in England. The 'Sustaining a Living Wales' consultation document has the aim to ensure that Wales has increasingly resilient and diverse ecosystems that deliver economic, environmental and social benefits. Improvements to the quality of the water environment and certain potential climate change impacts will present opportunities for an expanding tourist industry in the region³³.

3.3.3 Key Issues

The key issues relevant to the Drought Plan arising from the baseline assessment for population and human health are:

- The need to ensure continued improvements in levels of health across the region, particularly in urban areas and deprived areas.
- The need to ensure public awareness of drought conditions and importance of maintaining security of supply without the need for emergency drought measures.
- The need to ensure water quantity and quality is maintained for other users including tourists, recreational users and other users such as farmers.
- The need to ensure a balance between different aspects of the built and natural environment that will help to provide opportunities local residents and tourists, including opportunities for access to recreation resources and the natural and historic environment.
- Sites of nature conservation importance, heritage assets, water resources, important landscapes and public rights of way contribute to recreation and tourism opportunities and subsequently health and well-being and the economy.

3.4 Material Assets and Resource Use

3.4.1 Baseline

Water Use

³⁰ ONS (2011) Housing Statistical Release - Household Projections 2008 to 2033, England

³¹ Defra (2011) *The Natural Choice: securing the value of nature*, *The Natural Environment White Paper*

³² Green infrastructure is a term used to refer to the living network of green spaces, water and other environmental features in both urban and rural areas.

³³ Defra (2016) The UK Climate Change Risk Assessment 2016 Evidence Report.

In 2019/20 Severn Trent Water delivered around 1,900 million litres of water per day (Ml/d) into its supply system. Severn Trent Water currently transfers around 60 Ml/d to other water companies (mainly Yorkshire Water) and imports approximately 350 Ml/d from other water companies (South Staffordshire Water, Anglian Water and from Welsh Water via the Elan Valley Reservoirs system). Severn Trent Water has ongoing programmes to reduce leakage from its network and to encourage more efficient use of water by customers. Water consumption per person is relatively low in the Severn Trent Water supply area compared to some other parts of the country, with an average use per person estimated at around 129 litres/day compared to a national average in England and Wales of around 142 litres/day³⁴.

Resource use and waste

There is an ongoing need for society to reduce the amount of waste it generates, by using materials more efficiently, and improving the management of waste that is produced.

Waste going to landfill has more than halved over the period 2014/5 to 2018/19 (6,361 thousand tonnes to 2,756 thousand tonnes) and a rate of 557%; household recycling rates have declined slightly to 43.5% (2018/19)³⁵; waste generated by businesses from 2015 increased by almost 17% in the three years to 2018³⁶. In line with the widely adopted 'waste hierarchy', best practice for waste management is to reduce, re-use, recycle and recover, and only then should disposal (or storage) in landfill be considered.

Data on waste arisings is collected in a range of categories. The activities of the water industry contribute to construction, demolition and excavation waste (CDEW), through construction of new infrastructure. The water industry also contributes to several waste streams through the operation of facilities. Waste streams include commercial and industrial waste (C&I) (statistics include waste arisings from the power and utilities sector, which includes water supply and sewage removal), and also hazardous wastes.

Drought Plan options that may require infrastructure development may result in the use of raw materials and the production of some waste. The operation of some Drought Plan options may result in additional chemical use and the production of waste products, notably for water treatment, and increased use of energy notably for water pumping operations.

3.4.2 Future Baseline

The Government's national aspiration is to reduce water usage to an average of 130 litres per person per day by 2030. Government, Ofwat and the Environment Agency expect that leakage will not rise in any water company area and leakage targets must be set that take account of customer priorities for reliable water supplies. Severn Trent Water's final Water Resources Plan 2019 proposes continued action to reduce leakage and encourage the efficient use of water.

There is the potential for increase in operational waste from the water sector as regional population increases and standards of water treatment are increased through regulatory requirements and/or customer expectations.

With the Waste Strategy for England, diminishing landfill capacity and a fast-growing waste recycling and recovery industry, the proportion of waste sent to recovery rather than landfill is set to continue to increase in the future. One of the Waste Framework Directive targets is for recycling 65% of municipal solid waste by 2035, recycling 75% of packaging waste by 2030 and a binding landfill target to reduce landfill to a maximum of 10% of municipal waste by 2035³⁷.

The Government's National Infrastructure Plan (NIP) (2020 update), includes a vision to manage natural capital sustainably, treat water and waste in ways that sustain the environment and enable the economy to prosper, ensure a supply of water that meets the needs of households, businesses and the

³⁴ <https://discoverwater.co.uk/amount-we-use>

³⁵ Defra (2020) Local authority collected waste statistics – local authority data. <https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables>

³⁶ Defra (2020) UK statistics on waste data – March 2020

<https://www.gov.uk/government/statistical-data-sets/env23-uk-waste-data-and-management>

³⁷ Defra (2018) Our Waste, our resources: A strategy for England.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf

environment now and in the future, as well as ensuring waste is managed in accordance with the waste hierarchy. The 2020 NIP update sets out progress made whilst including detailed delivery plans to 2022 in key economic sectors³⁸.

3.4.3 Key Issues

The key issues for the Drought Plan arising from the baseline assessment for Material Assets and Resource Use are:

- The need to minimise the consumption of resources, including water and energy
- The need to reduce the total amount of waste produced in the region, from all sources, and to reduce the proportion of this waste sent to landfill.
- Need to continue to reduce leakage from the water supply system.
- The need to encourage more efficient use of water and reduce per capita consumption, especially in drought conditions.

3.5 Water

3.5.1 Baseline

The water environment in the assessment area includes rivers, reservoirs, lakes, groundwater and estuaries. The aquatic environment has been previously characterised as part of the UK Government's reporting obligations to the EU under the Water Framework Directive (WFD) which provides the most appropriate baseline reference. **Figure 3.4** shows the most recent (2019) WFD overall status classification in the assessment area.

Surface Waters: Rivers and Canals

The part of the assessment area that falls within the Severn River Basin District (RBD) includes the River Severn and its major tributaries the Teme and Warwickshire Avon, as well as the River Wye (cross-England/Wales) catchment. The part of the assessment area that falls within the Humber RBD includes the River Trent, Derbyshire Derwent, River Soar, River Tame, River Anker and River Mease. **Figure 3.4** shows the distribution of rivers in the assessment area.

Surface Waters: Lakes and Reservoirs

In total, there are 68 lakes/reservoirs in the assessment area, including Carsington Water, Draycote Water, Llyn Clywedog Reservoir and Ladybower Reservoir. **Figure 3.4** shows the distribution of lakes and reservoirs in the assessment area.

Groundwater

The majority of groundwater that Severn Trent Water abstracts is sourced from the Sherwood Sandstone (Permo-Triassic Sandstone) aquifers. The Environment Agency considers that licensed groundwater abstraction is fully utilised over much of the assessment area. Both the quantity and quality of groundwater is extremely important in maintaining these resources. Groundwater is vulnerable to pollution from surface activities since aquifers underlie up to two-thirds of the land surface in this densely populated area. Groundwater quality issues include high nitrate levels in some aquifers.

Source Protection Zones (SPZ) provide additional protection to safeguard drinking water quality. This is achieved through constraining the proximity of an activity that may impact upon drinking water abstraction. They are defined around large and public potable groundwater abstraction sites, and the groundwater travel time to an abstraction.

In the assessment area, the main reasons for poor groundwater quality status are high or rising nitrate concentrations, with some failures for pesticides and other chemicals. The main reason for poor

³⁸ HM Treasury (2020) National Infrastructure Strategy 2020:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938539/NIS_Report_Web_Accessible.pdf

quantitative status in groundwater is that abstraction levels exceed the rate at which aquifers recharge. **Figure 3.5** shows groundwater quantitative status in the assessment area.

Estuaries

The Severn Estuary (including the Wye Estuary) and the Humber Estuary European Marine Sites³⁹ (and which form part of the Marine Protected Area (MPA) network) are considered within the SEA due to the direct hydrological connectivity with river systems within the assessment area. Both are internationally recognised for nature conservation with Ramsar, SAC and SPA designations.

Abstraction Licensing Strategies

A national review of abstraction licences was undertaken by the Environment Agency through the CAMS (Catchment Abstraction Management Strategies) process in 2004. This has been updated in subsequent years (and now renamed as Abstraction Licensing Strategies (ALS)) and aligned to the WFD assessment processes, including use of Environmental Flow Indicators (EFIs).

The ALS areas are based on river catchment boundaries and overlap with assessment area. The ALS identify where additional abstractions can be made from rivers, where no additional abstractions can be made and where over-abstraction is possible through existing licensed abstractions. This has been achieved by identifying the 'resource availability status' for specific Water Resource Management Units (WRMUs) and Groundwater Management Units (GWMUs) within individual catchments. There are five categories of water availability:

- High hydrological regime: There is more water than required to meet the needs of the environment. However, due to the need to maintain the near pristine nature of the water body, further abstraction is severely restricted.
- Water Available: There is more water than required to meet the needs of the environment. New licences can be considered depending on local and downstream impacts.
- Restricted Water Available: Fully Licensed flows fall below the Environmental Flow Indicators (EFIs). If all licensed water is abstracted there will not be enough water left for the needs of the environment. No new consumptive licences would be granted. It may also be appropriate to investigate the possibilities for reducing fully licensed risks. Water may be available if you can 'buy' (known as licence trading) the entitlement to abstract water from an existing licence holder
- No Water Available: Recent Actual flows are below the EFI. This scenario highlights water bodies where flows are below the indicative flow requirement to help support Good Ecological Status (as required by the Water Framework Directive). No further consumptive licences will be granted. Water may be available if you can buy (known as licence trading) the amount equivalent to recently abstracted from an existing licence holder
- HMWBs (and /or discharge rich water bodies): These water bodies have a modified flow that is influenced by reservoir compensation releases or they have flows that are augmented. These are often known as 'regulated rivers'. They may be managed through an operating agreement, often held by a water company. The availability of water is dependent on these operating agreements.

Water Quality

- Since 2007 water quality has been classified according to several quality elements in line with the requirements of the WFD. For surface waters, there are two separate WFD status classifications for water bodies: ecological and chemical. For a water body to be in overall 'good' status/potential both ecological and chemical status must be at least 'good'. Biological status classification considers the condition of biological quality elements, e.g. aquatic invertebrates, plants and fish, the morphology of the habitat available, concentrations of supporting physico-chemical elements e.g. oxygen or ammonia and concentrations of specific pollutants.

³⁹ 'European marine sites' is the collective term for SACs and SPAs that are covered by tidal water.

Figure 3.4 WFD Surface Water Bodies

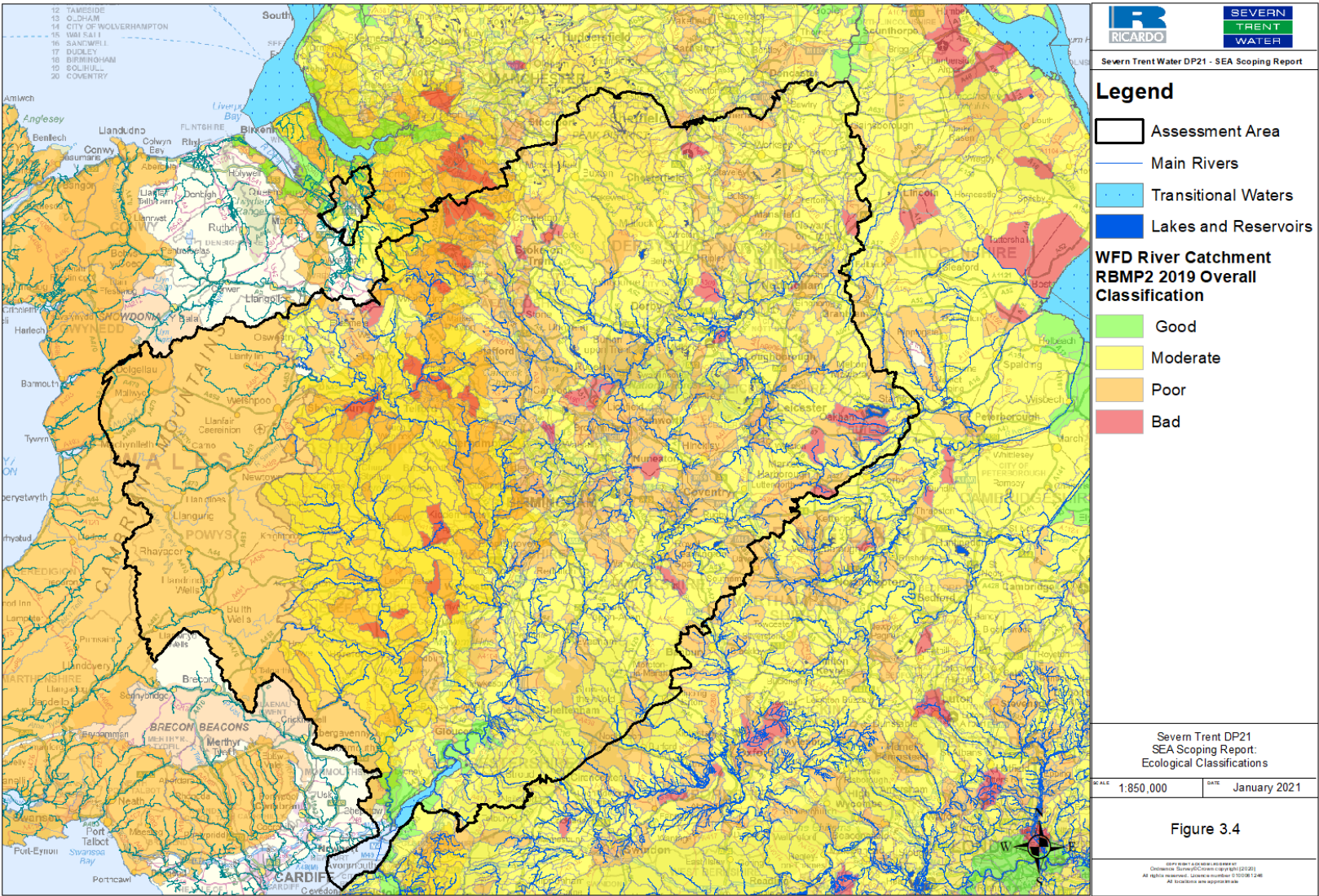
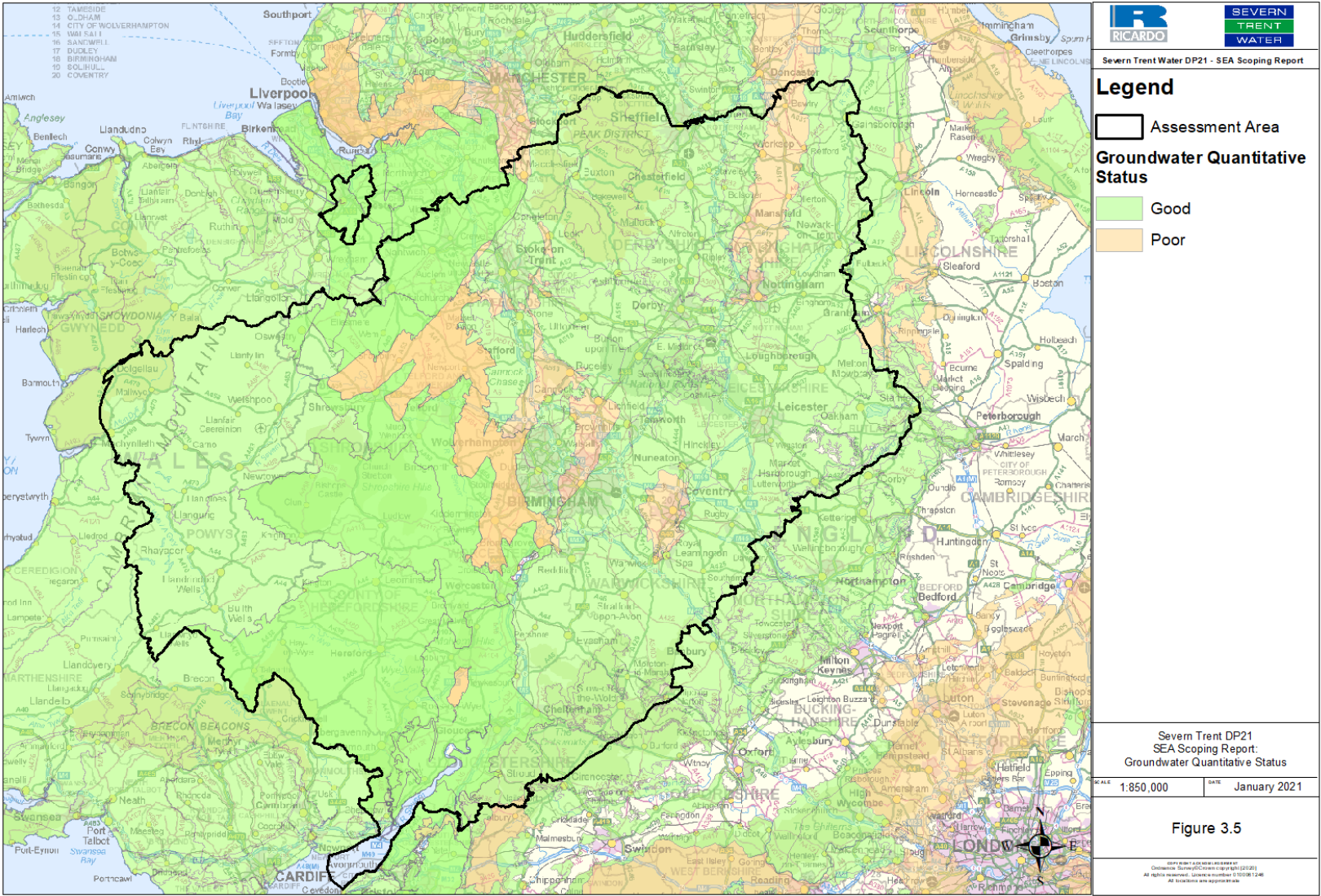


Figure 3.5 Groundwater Quantitative Status



Under the WFD there are two separate classifications for groundwater bodies: chemical status and quantitative status. A groundwater body will be classified as having poor quantitative status in the following circumstances: where low groundwater levels are responsible for an adverse impact on rivers and wetlands normally reliant on groundwater; where abstraction of groundwater has led to saline intrusion; where it is possible that the amount of groundwater abstracted will not be replaced each year by rainfall. For a groundwater body to be at good status overall, both chemical status and quantitative status must be good. In addition to assessing status, there is also a requirement to identify and report where the quality of groundwater is deteriorating as a result of pollution and which may lead to a future deterioration in status. The main reasons for poor status were identified as high or rising nitrate concentrations, with some failures for pesticides and other chemicals. The main reason for poor quantitative status is that abstraction levels, mainly for public water supply, exceed the rate at which aquifers recharge⁴⁰.

Bathing Waters

There are no bathing waters within the assessment area. However, a number of bathing waters are located on or in proximity to estuaries that are in hydrological connectivity to the Severn Trent Water supply area (Humber Estuary and Severn Estuary). The bathing waters located in proximity to these estuaries have all passed standards for bathing water quality since 2007 and in many cases met the even higher standards associated with the Revised Bathing Water Directive.

Flood Risk

Flooding can result from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers and drainage systems, and from reservoirs, canals and lakes and other artificial sources. The Environment Agency's Flooding in England report⁴¹ and the Flooding in Wales report⁴² highlight the baseline with regard to flood risk in the assessment area.

In 2007, some of Severn Trent Water's customers were affected by the severe flooding that occurred in the River Severn catchment. The extreme floods of 2007 prompted the Pitt Review (2008) and the subsequent Flood and Water Management Act 2010. Subsequent flooding events which have impacted all RBDs, included⁴³: in April 2012 a prolonged period of intense rainfall caused widespread flooding in the South West, Yorkshire and Northumbria RBD's. This was followed by a further series of storms (Desmond, Eva and Frank) which culminated in December 2015 with the flooding of 17,000 properties in the north of England (affecting the North West, Northumbria and Humber RBDs), making December 2015 the wettest month ever recorded.

The Environment Agency and Natural Resource Wales have spent over £800 million in the last decade on building, improving and keeping flood defences such as managed river channels, walls and raised embankments, flood barriers and pumps in good condition, which reduced the risk of flooding to well over 200,000 households across England and Wales. The government recognises the importance of investing in flood risk and coastal management and will invest £5.2 billion between 2021 and 2027 into a programme across England that will result in flood risk and coastal erosion reduction⁴⁴. Climate change may have a significant effect upon future flood risk in the region as discussed further below and in the Air and Climate Change topic.

3.5.2 Future Baseline

Originally, the WFD set a target of aiming to achieve at least 'good status' in all water bodies by 2015. However, provided that certain conditions are satisfied, it was acknowledged that in some cases the achievement of good status may be delayed until 2021 or 2027. The primary objective in the short-term is to ensure no deterioration in status between status classes: the 2019 water body classification is the baseline from which deterioration between classes is to be assessed; no deterioration between status classes is permitted unless certain and specific conditions apply.

⁴⁰ Environment Agency (2015), Severn River Basin District River Basin Management Plan

⁴¹ Environment Agency (2009) Flooding in England: A National Assessment of Flood Risk

⁴² Environment Agency (2009) Flooding in Wales: A National Assessment of Flood Risk

⁴³ Environment Agency (2018) Preliminary Flood Risk Assessment for England.

⁴⁴ HM Government © (2020) The ten point plan for a green industrial revolution

The NPPF⁴⁵ states that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk. The NPPF requires that where development is necessary, it should be made safe without increasing flood risk elsewhere, as defined in the Technical Guidance to the NPPF⁴⁶.

3.5.3 Key Issues

The key issues arising from the baseline assessment for water are:

- The need to further improve the quality of rivers and estuaries taking into account WFD status targets.
- The need to maintain the quantity and quality of groundwater resources taking into account WFD status targets.
- The need to improve the resilience, flexibility and sustainability of water resources particularly in light of potential climate change impacts.
- The need to ensure sustainable abstraction.
- The need to ensure that people understand the value of water.
- The need to reduce and manage flood risk.

3.6 Soil, Geology and Land Use

3.6.1 Baseline

Geology

The assessment area is geologically diverse and, from a water resources perspective, includes a number of major aquifers, for example, sandstone aquifers in the West Midlands and Nottinghamshire (e.g. Nottinghamshire Sherwood Sandstone) and smaller limestone aquifers in the Derbyshire and Cotswolds areas (Oolitic limestone of the Cotswolds).

England has been divided into areas with similar landscape character known as National Character Areas (NCAs), previously known as Joint Character Areas (JCAs). Character descriptions for each of the NCAs were produced and published in regional volumes to highlight the influences determining the character of the landscape, including surface geology. Landscape Character Maps for Wales include 48 regional scale landscape character areas. Each area has a distinctive sense of place that enables it to be recognised as a single area. This is described for each area, according to its geological, habitats, historic, cultural and perceptual characteristics. Relevant NCA and Welsh landscape character area boundaries are shown in **Figure 3.8**.

Soils and Land Use

The Soil Map of England and Wales⁴⁷ identifies dominant soil subgroups. In terms of agricultural land quality, planning policy seeks to protect best and most versatile agricultural land (defined as land in Grades 1, 2 and 3a of the Agricultural Land Classification). In terms of agricultural land quality, planning policy seeks to protect the best and most versatile agricultural land (defined as land in Grades 1, 2 and 3a of the Agricultural Land Classification).

The majority of land in the assessment area is farmed and agricultural practices have a major influence on soil quality. Good soil structure is beneficial to water retention and crop yield. It can be seen from **Figure 3.6** that the majority of agricultural land in the assessment area is classified as Grade 3, with pockets of higher grade soils interspersed (for example, in Shropshire and in the north east of Nottinghamshire). The large area mainly classified as Grade 4 in the north of the assessment area is associated with the uplands of the Peak District. The large urban areas such as the West Midlands conurbation can also be identified. Soil quality and structure is affected by changes in land use,

⁴⁵ Communities and Local Government (2019) National Planning Policy Framework

⁴⁶ Communities and Local Government (2014) Technical guidance to the National Policy Planning Framework: Flood risk and coastal change

⁴⁷ Produced by the Soil Survey of England and Wales

groundwater levels and farming practices. Soil quality can influence run-off rates and therefore flooding and water quality.

Catchment Sensitive Farming (CSF) is a joint project between the Environment Agency and Natural England that began in 2006. It delivers practical solutions and targeted support to enable farmers and land managers to take voluntary action to reduce diffuse water pollution from agriculture to protect waterbodies and the environment. Similar catchment management activities are also being implemented across Wales. Severn Trent Water is working with farmers to implement catchment management solutions to water quality issues and deliver raw water quality protection improvements.

Contaminated land is defined as land where substances could cause significant harm to people or protected species; or significant pollution of surface waters or groundwaters. Some types of contaminated land can be designated as special sites for a variety of reasons, including land that seriously affects drinking water, surface waters (e.g. lakes and rivers) and important groundwater sites. Data on contaminated land are compiled for the government by the British Geological Survey⁴⁸.

Minerals Safeguarding Areas (MSAs) are designated by Mineral Planning Authorities for areas that include known deposits of minerals which are desired to be kept safeguarded from unnecessary sterilisation by non-mineral development.

3.6.2 Future Baseline

The vision of Defra's Soils Strategy for England⁴⁹ is for all England's soils to be managed sustainably and with degradation threats tackled successfully by 2030. This will improve the quality of England's soils and safeguard their ability to provide essential services for future generations.

One of the core planning principles of the NPPF is to encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value. The NPPF also places great importance on Green Belt policy, the aim of which is to prevent urban sprawl by keeping land permanently undeveloped. Green Belt serves five purposes: to check the unrestricted sprawl of large built-up areas; to prevent neighbouring towns merging into one another; to assist in safeguarding the countryside from encroachment; to preserve the setting and special character of historic towns; and to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.

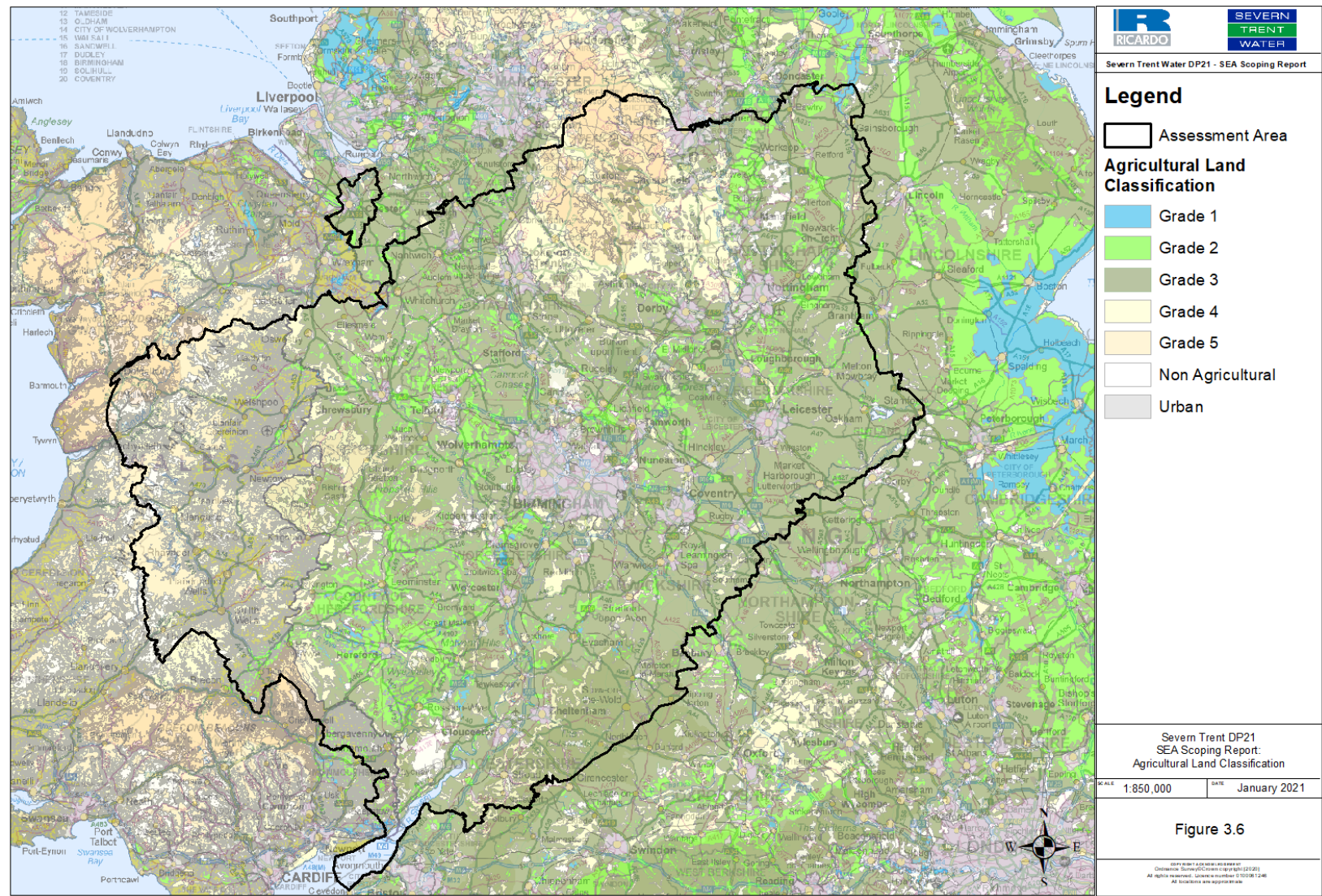
Government strategic policy in England and Wales supports the promotion and support for catchment-based approaches to prevent and manage future risks to drinking water quality from agricultural activities, working in partnership with farming communities. These policy objectives are reflected in regulatory guidance (including water industry planning guidance) from government and the regulators. The catchment-based approach is implemented across England and Wales through catchment partnerships across most of the assessment area to continue taking forward catchment solutions over the coming years.

Soil quality and structure is affected by changes in land use, groundwater levels and farming practices. Soil quality can influence run-off rates and therefore flooding and water quality. Severn Trent Water has been undertaking catchment management investigation work and these have highlighted where there are opportunities for catchment solutions as viable alternatives to future treatment investment.

⁴⁸ <https://data.gov.uk/dataset/contaminated-land>

⁴⁹ Defra (2009) Safeguarding our soils – A Strategy for England

Figure 3.6 Agricultural Land Classification



As a result of this work, Severn Trent Water has introduced:

- Severn Trent Water Environmental Protection Scheme (STEPS) – farmer grants of up to £5000 per farm for infrastructure investments and land management changes to protect / improve drinking water quality. Examples of such land management changes include fencing watercourses, installing riparian buffers along watercourses, pesticide biofilters, loosening compacted soil layers and constructed farm wetlands.
- Farm to Tap schemes - support to help manage levels of metaldehyde and other herbicides in drinking water. Metaldehyde is the active ingredient found in most slug pellets and is difficult to remove from drinking water.

3.6.3 Key Issues

The key issues arising from the baseline assessment for soil, geology and land use are:

- The need to protect geological features of importance and maintain and enhance soil function and health.
- The need to manage the land more holistically at the catchment level, benefitting landowners, other stakeholders, the environment and sustainability of natural resources (including water resources).
- The need to make use of previously developed land (brownfield land) and to reduce the prevalence of derelict land in the region.

3.7 Air and Climate

3.7.1 Baseline

Local Air Quality

Options in the Drought Plan may require construction and temporary changes to the operation of water sources, water treatment facilities and the water supply system. These activities have the potential to lead to temporary adverse effects on air quality through emissions associated with use of energy and chemicals.

The local air quality baseline situation can be described through reference to the number of designated Air Quality Management Areas (AQMA). A local authority declares an AQMA when UK National air quality objectives are unlikely to be met. The AQMAs within the assessment area are illustrated in **Figure 3.7**. The majority of the AQMAs in the UK have been declared because of emissions from road transport.

The Government published an updated air quality plan in 2017 along with individual zone plans for the 37 zones identified as having air quality issues with NO₂⁵⁰. This plan identified 68 local authorities (in addition to London and the five cities included in the 2015 plan with NO₂ breaches forecast to remain above legal limits unless additional measures were taken⁵¹. Of these, 29 local authorities with persistent exceedances were required to undertake local action to consider the best option to achieve statutory NO₂ limit values within the shortest possible time⁵². The national nitrogen dioxide (NO₂) air quality action plan however suffered legal challenges and was declared by the High Court as “unlawful”⁵³. In response, the Government issued a more comprehensive Clean Air Strategy in January 2019 to deal with all sources of air pollution, which importantly supported the creation of additional Clean Air Zones⁵⁴.

The Air Pollution Information System (www.apis.ac.uk) will be consulted during the assessment process to help understand the risks of air pollution on habitats/sensitive and or designated sites.

⁵⁰ https://uk-air.defra.gov.uk/assets/documents/no2ten/2017-zone-plans/AQplans_UK0030.pdf (Accessed 9 June 2020)

⁵¹ Defra (2017) UK plan for tackling roadside nitrogen dioxide concentrations: Detailed Plan https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/633270/air-quality-plan-detail.pdf

⁵² Defra (2017) UK plan for tackling roadside nitrogen dioxide concentrations.

⁵³ <https://publications.parliament.uk/pa/cm201719/cmselect/cmenvfru/433/43310.htm>

⁵⁴ Defra (2019) Clean Air Strategy 2019: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

Greenhouse Gases and Climate Change

The predominant greenhouse gas of interest is carbon dioxide (CO₂). Severn Trent Water is a large user of energy due to the energy needed to treat and pump water. In 2019/20, Severn Trent Water generated 156,014tCO₂e direct emissions from its operations, with 65% from its water (213KtCO₂e) and waste treatment (211KtCO₂e) services, and the remaining split between on-site energy generation (30%) and transport fleet (5%) water and wastewater services⁵⁵. This represents a 2.7% year on year reduction and 3.4% increase in emissions from water and waste treatment services⁵⁶. Drought Plan measures could temporarily influence CO₂ emissions through additional pumping and treatment requirements.

Climate and Climate Change

Climate monitoring and risk assessments have improved significantly over the last two decades but there are still limits to the understanding of future climate risks. A certain amount of global warming will occur due to inertia in the global climate system, irrespective of future greenhouse gas emissions. Mitigation through reduction in greenhouse gas emissions will contribute to risk reduction over the long term (100 years). Adaptation is needed to reduce the costs and damages of inevitable related impacts and to take advantage of opportunities that result from a changing climate.

The UK Climate Change Risk Assessment (CCRA) Evidence Report⁵⁷ draws together and interprets the evidence gathered by CCRA regarding current and future threats and opportunities for the UK posed by the impacts of climate change up until 2100. Overall, the findings of the CCRA indicate that the greatest need for early adaptation action (i.e. within the next 5 years) is in the following areas:

- Flood and coastal erosion risk management
- Specific aspects of natural ecosystems, including managing productivity and biodiversity (the management of forest pests and diseases, low summer river flows and the movement of plants and animal species are all highlighted as high priorities for action)
- Managing water resources, particularly in areas with increasing water scarcity
- Overheating of buildings and infrastructure in the urban environment
- Health risks associated with heatwaves and other risks that may affect the NHS
- Opportunities for the UK economy, particularly to develop climate adaptation products and services.

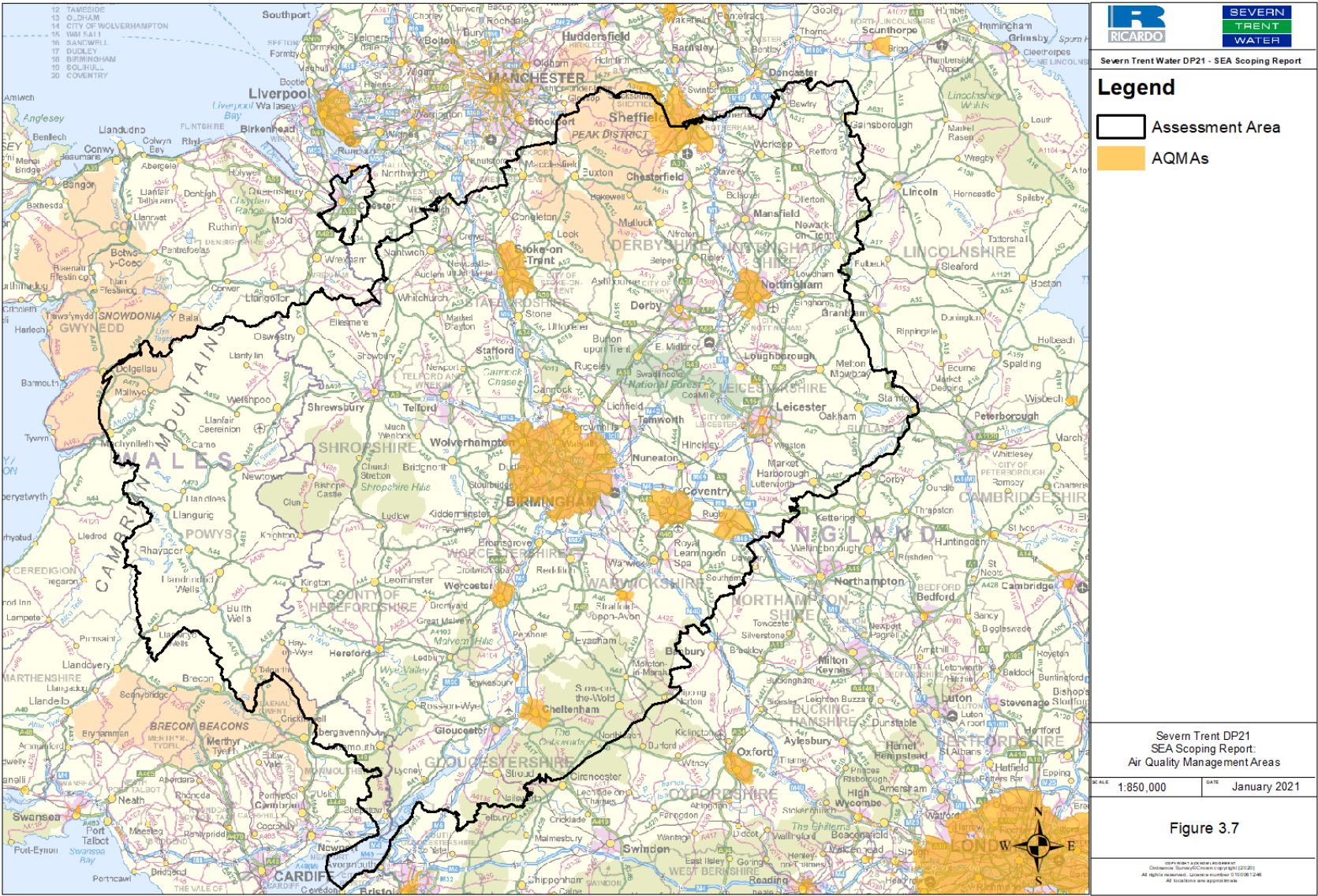
The Drought Plan is a tactical response plan that sets out to ensure the maintenance of essential water supplies during times of drought, which may become more prevalent and intense due to the effects of climate change. The Drought Plan itself functions as a form of adaptation to some of the effects of climate change.

⁵⁵ Severn Trent Water Plc (2020). Sustainability Report 2020.

⁵⁶ Severn Trent Water Annual Performance Report 2020: <https://www.stwater.co.uk/about-us/responsibility/our-responsibilities-to-you/regulatory-performance/>

⁵⁷ Defra (2016) The UK Climate Change Risk Assessment 2017 Evidence Report

Figure 3.7 Air Quality Management Areas



3.7.2 Future Baseline

Government and international targets, revised by the Paris Agreement (2016), indicate significant cuts in greenhouse gas emissions will take place by certain years (2017, 2022, 2027 and 2032). The UK met its carbon budget targets to 2017 and is currently projected to meet its first three legislated carbon budget targets (until 2022), but not to meet the targets for 2027⁵⁸.

The 2018 UK Climate Projections (UKCP18) estimate that summers in central England are likely, to be 0°C to 5.8°C warmer and 57% drier to 9% wetter⁵⁹. These changes could affect the frequency and severity of drought events.

The CCRA considered more than 700 risks associated with climate change and selected 100 risks for detailed review. These included public water demand-supply deficit, lower summer river flows, number of unsustainable water abstractions (total), the northward spread of invasive non-native species, increased soil erosion due to heavy rainfall and an increase in water demand for irrigation of crops.

3.7.3 Key Issues

The key issues arising from the baseline assessment for air and climate are:

- The need to reduce air pollutant and greenhouse emissions and limit air emissions to comply with air quality standards.
- The need to reduce greenhouse gas emissions.
- The need to adapt to the impacts of climate change for example through, sustainable water resource management, water use efficiencies, specific aspects of natural ecosystems (e.g. connectivity) as well as accommodating potential opportunities afforded by climate change.

3.8 Archaeology and Cultural Heritage

3.8.1 Baseline

Options in the Drought Plan could affect historic landscape character, heritage asset setting and historic structures associated with the water environment. Archaeological remains are sensitive to changes in water quality, water levels (for example, waterlogged deposits), pollution and land use practices.

The NPPF defines the historic environment as:

All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.

Nationally important archaeological sites are statutorily protected as designated heritage assets. **Table 3.3** lists the number of designated heritage asset count nationally, regionally and for the assessment area. The NCAs and the Welsh regional landscape character areas⁶⁰ include consideration of historic and cultural influences on the landscape. Relevant NCA regional landscape character area boundaries are shown in **Figure 3.8**.

Historic England has been collecting data on heritage assets at risk in England for more than a decade. The National Heritage at Risk Register systematically checks the condition of problem buildings, initially focused on buildings at risk, but now adapted to serve other types of heritage asset. The percentage of Grade I and II* listed buildings, and structural scheduled monuments that are capable of beneficial

⁵⁸ DECC (2019) Updated energy and emissions projections 2018
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/501292/eeepReport2015_160205.pdf

⁵⁹ Defra, BEIS, the Met Office and the Environment Agency (2018) – UKCP18 Climate Change Over Land:
<https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-infographic-headline-findings-land.pdf>

⁶⁰ Countryside Council for Wales (2012) Draft Regional Landscape Character Map for Wales

use has reached an all-time high (45.7%). In 2020, the Risk Register counted 5,097 entries, compared to the 5,341 entries in the 2016 register⁶¹, highlighting an important decline in sites at risk. Heritage assets such as Scheduled Monuments can be at risk from water abstraction or dewatering (previously 1.71% nationally). However, other assets such as those composed of organic material and preserved in waterlogged or anaerobic conditions are proportionately more at risk (e.g. palaeo-environmental deposits).

Table 3.3 Designated Heritage Assets

Asset	England	Wales	West Midlands	East Midlands	South West	SEA Assessment Area
World Heritage Sites	18	5	2	1	4	3
Scheduled Monuments	19,855	4, 198	1,423	1,512	6,984	3,655
Listed Buildings	376,830	60,034	31,481	29,631	89, 457	54,559
Registered Historic Parks and Gardens	1,774	385	150	138	294	314
Registered Historic Battlefields	46	-	6	5	8	31*
Protected Historic Wrecks	49	11	0	0	23	0

Sources: English Heritage: Heritage counts 2011 (*designated assets were identified from GIS datasets available from English Heritage at <http://services.english-heritage.org.uk/NMRDataDownload/>).

Welsh Heritage: Cadw (2021) Archwilio: Historic Environment Record of Wales. At <https://archwilio.org.uk/arch/index.html>.

Conservation Areas are usually designated by the local planning authority. They are designated for their special architectural and historic interest. Conservation Areas can include historic town and city centres, fishing and mining villages, 18th and 19th century suburbs, model housing estates, country houses set in historic parks and/or historic transport links and their environment. There are over 8,000 conservation areas in England. Where relevant to Drought Plan measures, the SEA will consider data prepared by local authorities on Conservation Areas.

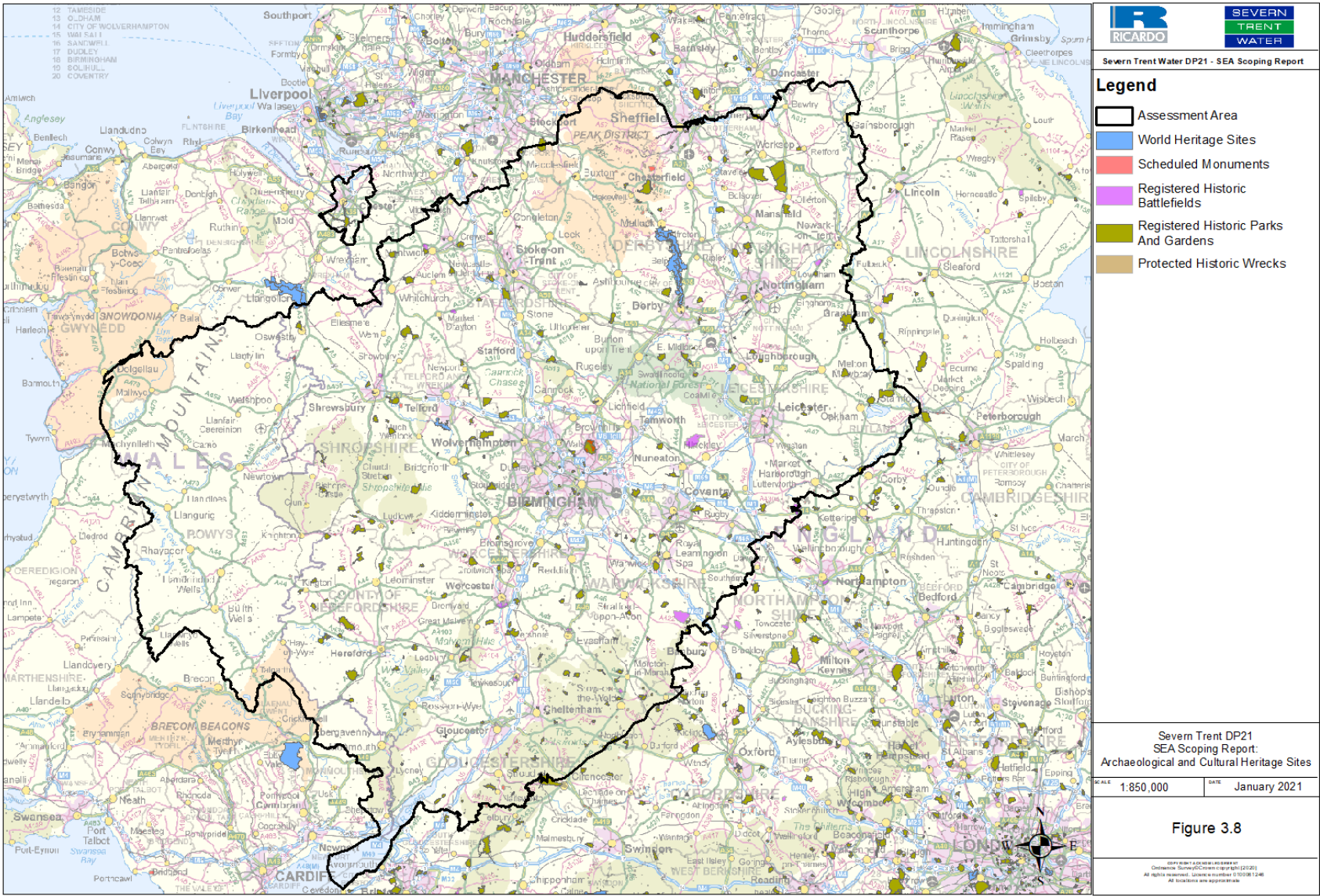
In relation to unknown heritage assets, waterlogged conditions preserve waterlogged archaeology, such as wooden artefacts and structures such as trackways. Remains may be rain-fed or groundwater fed. If the latter, then clearly abstraction levels can be a critical factor in maintaining conditions in which preservation of the remains is viable. In addition, there are waterlogged deposits that are specifically associated with chalk, such as springs and their intimately associated wetlands which again can contain important archaeological information, especially palaeo-environmental evidence. Such water-dependent heritage assets will be considered when assessing potential Drought Plan measures.

Approximate locations of areas important for palaeo-environmental deposits were identified according to a publicly available dataset provided by Historic England. This identified that there are a number sites within the assessment area which are either known or suspected to be of high importance for water level dependent archaeology. For example, a number of sites have been identified in north Shropshire. The dataset supplied by Historic England, or if available an updated version, will be used to support further assessment of schemes. For sites in Wales that may be affected by the Drought Plan, reference will be made to similar data on the Cadw website⁶². The designated heritage assets within the assessment area are shown on **Figure 3.8**.

⁶¹ Historic England (2020) Heritage at Risk: Latest Findings: <https://historicengland.org.uk/advice/heritage-at-risk/findings/>

⁶² Cadw (2021) Archwilio: Historic Environment Record of Wales. <https://archwilio.org.uk/arch/index.html>. Accessed 19th January 2021.

Figure 3.8 Archaeological and Cultural Heritage Sites



3.8.2 Future Baseline

The NPPF aims to make the planning system less complex and more accessible with an emphasis on a presumption in favour of development. However, core planning principles include those aiming to protect heritage assets, including “*conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations*”⁶³.

Continuing national economic difficulties may have had a negative effect on removing heritage assets from the heritage at risk register. Climate change could have variable impacts on heritage assets in the future. Some types of assets and landscapes have already experienced and survived significant climatic changes in the past and may demonstrate considerable resilience in the face of future climate change. However, many more historic assets are potentially at risk from the direct impacts of future climate change⁶⁴.

3.8.3 Key Issues

The key issue arising from the baseline assessment for archaeology and cultural heritage is:

- The need to protect, conserve or enhance sites of archaeological importance and cultural heritage interest, and their settings, particularly those which are sensitive to the water environment.
- The need to protect water-dependent heritage sites during drought conditions.

3.9 Landscape and Visual Amenity

3.9.1 Baseline

The assessment area has a rich diversity of urban and rural landscapes ranging from the mountains and uplands of the Peak District and Mid Wales to the agricultural plains of Shropshire and the Vale of Evesham, and densely populated areas of the East and West Midlands conurbations. The landscape character network⁶⁵ defines landscape character as 'a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse'. Some landscapes are special because they have a particular amenity value, such as those designated as Areas of Outstanding Natural Beauty (AONB) or National Parks. Others may have an intrinsic value as good examples or be the only remaining examples of a particular landscape type. Some landscapes are more sensitive to development whereas others have a greater capacity to accommodate development. Assessments of landscape character and landscape sensitivity enable decisions to be made about the most suitable location of development to minimise impacts on landscapes.

Implementation of Drought Plan measures has the potential to influence landscape and visual amenity, for example, effects on water levels in rivers and reservoirs beyond those occurring naturally as a result of the drought alone. AONBs and Natural England National Character Areas (NCAs) are shown on **Figure 3.9** for the assessment area.

Nationally Designated Sites

AONBs are defined as ‘precious landscapes whose distinctive character and natural beauty are so outstanding that it is in the nation's interest to safeguard them’⁶⁶. They are designated under the National Parks and Access to the Countryside Act, 1949, strengthened by the Countryside and Rights

⁶³ CLG (2012) National Planning Policy Framework, Communities and Local Government.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

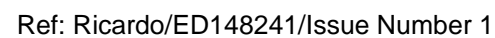
⁶⁴ English Heritage (2010) Climate Change and the Historic Environment

⁶⁵ www.landscapecharacter.org.uk, accessed 14th July 2006

⁶⁷ <http://www.landscapesforlife.org.uk/>

of Way Act, 2000. The primary purpose of an AONB is 'to conserve and enhance the natural beauty of the landscape.' There are five AONBs within, or partially within, the assessment area (**Figure 3.8**).

The Peak District National Park covers a small area of the assessment area in the Stafford and East Shropshire WRZ whilst the Shelton WRZ borders the Snowdonia (Eryri) National Park.



Landscape Character and Tranquillity

National Character Areas also take account of landscape (also referred to in the Biodiversity, Flora and Fauna topic) and relevant information on the characteristics of these Areas will be taken into account in the SEA of the Drought Plan.

Tranquillity is also considered to be a highly valued element with respect to the experience and enjoyment of the countryside. The Campaign for the Protection of Rural England (CPRE) has undertaken studies on tranquillity levels in England using a rigorous set of indicators predominantly falling into two categories; seeing (e.g. naturalness, openness and visibility at night) and hearing indicators (e.g. level and attenuation of constant noise/occasional noise and feature specific noise - lapping water, running water, high altitude aircraft) both with numerous positive and negative attributes. The studies and data sets were modelled using Geographical Information Systems (GIS) to produce a tranquillity map⁶⁷. The tranquillity map presents a national tranquillity score or a relative scale for each 500m x 500m grid square in England and Wales at a snapshot time in 2020. **Figure 3.9** shows tranquillity mapping for the relevant English and Welsh parts of the assessment area.

3.9.2 Future Baseline

One of the core planning principles of the NPPF is to take account of the different roles and character of areas, promoting the vitality of the nation's main urban areas, protecting the Green Belts around them, recognising the intrinsic character and beauty of the countryside and supporting thriving rural communities within it. The NPPF states that 'great weight' should be given to conserving landscape and scenic beauty in National Parks and AONBs, which have the highest status of protection in relation to landscape and scenic beauty. The NPPF identifies that planning permission should be refused for major developments in these designated areas except in exceptional circumstances and where it can be demonstrated they are in the public interest.

Climate change and land use change (e.g. due to agricultural reform associated with the UK's exit from the EU Common Agricultural Policy) may also lead to changes to landscape character.

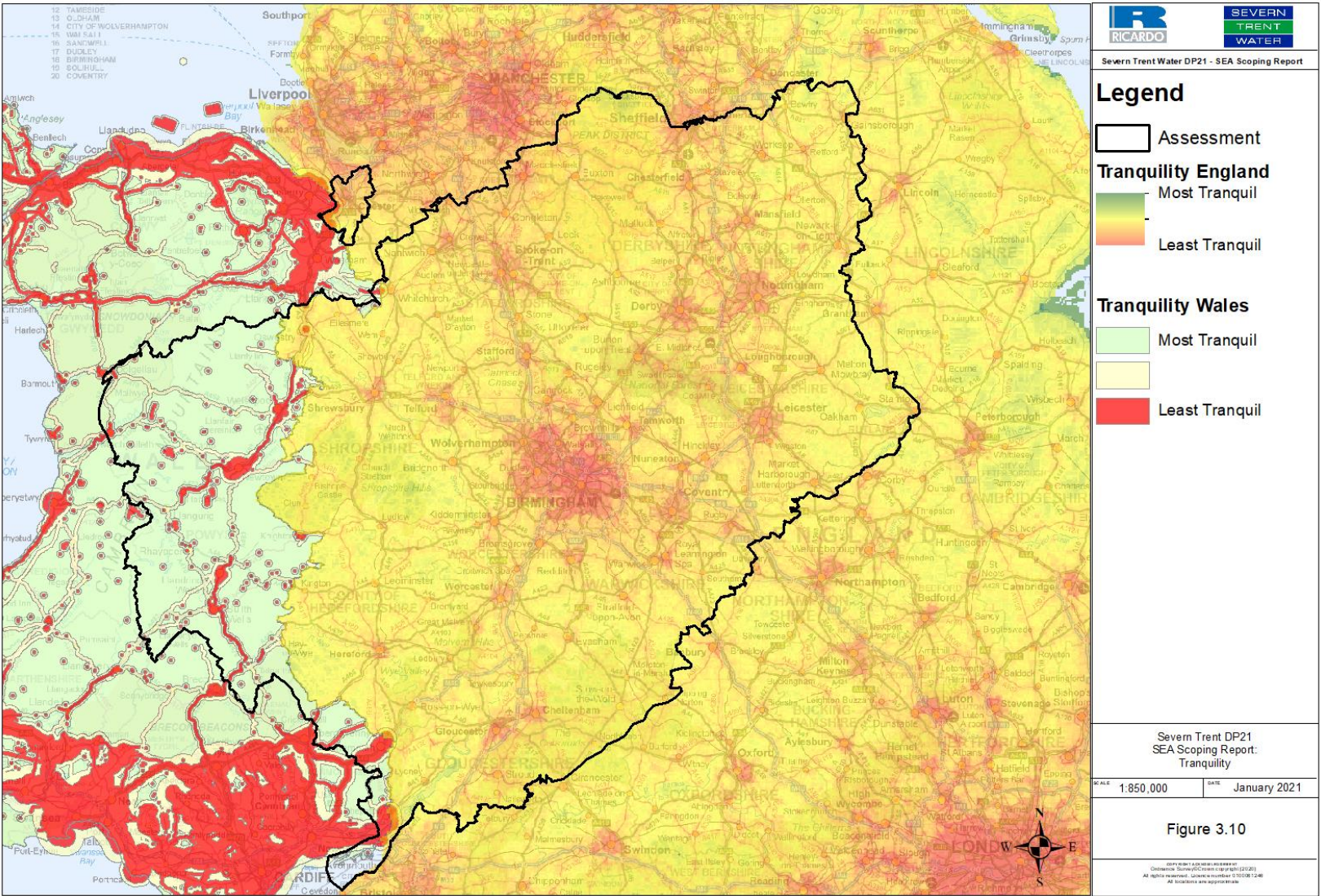
3.9.3 Key Issues

The key sustainability issue arising from the baseline assessment for landscape and visual amenity is:

- The need to protect and improve the natural beauty of AONBs, National Parks and other areas of natural beauty and to protect the characteristics identified in National Character Areas.
- The need to protect and improve the character of landscapes and townscapes.

⁶⁷ CPRE (2008) Tranquillity Mapping - Short report on the methodology

Figure 3.10 Tranquillity



4 Draft SEA Objectives and Proposed Framework

4.1 Overview

This section outlines the assessments that will be carried out as part of the SEA to identify the environmental and social effects of the potential measures to be considered for the Severn Trent Water draft Drought Plan.

The environmental and social assessment of the alternative draft Drought Plan measures will be 'objectives-led'. Establishing assessment objectives is a recognised way of considering the environmental effects of a plan and comparing the effects of alternatives. SEA objectives are often derived from environmental and social objectives established in law, policy or other plans and programmes, or from a review of baseline information and environmental problems (based on the SEA topics in Section 3).

An assessment framework of objectives has been developed based on:

- The key policy objectives and environmental and social protection objectives identified in the review of policies, and other plans and programmes (see Section 2). It is important that the assessment takes these objectives into account as this will help to highlight any area where the Drought Plan will help or hinder the achievement of the objectives of other plans (e.g. at regional, national and international level – see the review of Plans, Policies and Programmes in Section 2).
- The current state of the environment in the assessment area and the key environmental issues identified, both now and during the 5-year life of the Drought Plan (see Section 3).

Draft SEA objectives are set out in **Table 4.1** alongside the key policy objectives identified from the review of policies, plans and programmes and the key issues from the review of baseline information. The following sections describe how Severn Trent Water proposes to use these SEA objectives in the assessment of the environmental and social effects of potential draft Drought Plan measures. By assessing each measure against the objectives, it is more apparent where measures might have an adverse or beneficial effect, and where measures could be developed to reduce potential impacts or enhance beneficial effects.

As well as the overall SEA objectives, a number of key questions have been developed for each SEA topic. These key questions will prompt the assessment and ensure it considers all the relevant aspects. The assessment of each potential draft Drought Plan option will require the following information:

- Details of each potential measure;
- Likelihood and predicted frequency of deployment of the measure;
- Construction (where applicable) and operational/implementation details;
- Benefits to the water supply-demand position in a drought (taking uncertainty into account); and
- Key elements of the baseline environment, such as location of designated sites, human receptors potentially affected, priority habitats and species, landscape areas and heritage assets.

Table 4.1 SEA Objectives and Assessment Approach

SEA topic	PPP key policy objectives	Baseline key issues	SEA objectives	Indicator questions
Biodiversity, flora and fauna	<ul style="list-style-type: none"> Conservation and enhancement of the natural environment and of biodiversity, particularly internationally and nationally designated sites and priority habitats and species (NERC act S41 for England and Section 7 of the Environment Act (Wales) for Wales), whilst taking into account future climate change. Promote a catchment-wide approach to water use to ensure better protection of biodiversity. To achieve favourable condition for priority habitats and species in particular designated sites. Avoidance of activities likely to cause irreversible damage to natural heritage. Support well-functioning ecosystems, respect environmental limits and capacities, and maintain/enhance coherent ecological networks, including provision for fish passage and connectivity for migratory/mobile species. Strengthen the connections between people and nature and realise the value of biodiversity. Protection, conservation and enhancement of natural capital. Ecosystem services from natural capital contributes to the economy and therefore should be protected and, where possible, enhanced. Avoidance of activities likely to cause the spread of invasive non-native species (INNS). A need to protect the green infrastructure network. 	<ul style="list-style-type: none"> The need to protect or enhance the region's biodiversity, particularly protected sites designated for nature conservation. The need to avoid activities likely to cause irreversible damage to natural heritage. The need to take opportunities to improve connectivity between fragmented habitats. The need to control the spread of INNS. The need to engage more people in biodiversity issues so that they personally value biodiversity and know what they can do to help, including through recognising the value of the ecosystem services. 	<ul style="list-style-type: none"> To protect and enhance biodiversity, ecological functions, capacity, and habitat connectivity To avoid introducing or spreading INNS. 	<ul style="list-style-type: none"> Will it avoid damage to aquatic, transitional and terrestrial species and habitats including fish populations (particularly migratory fish)? Will it enhance aquatic, transitional and terrestrial species and habitats? Will it protect the most important sites for nature conservation? Will it ensure the sustainable management of natural habitats, taking into account climate change adaptability? Will it affect WFD compliance e.g. good ecological potential/status? Will it protect natural capital and ecosystem services? Will it increase the spread of invasive species?
Population and human health	<ul style="list-style-type: none"> Water resources play an important role in supporting the health and recreational needs of local communities. 	<ul style="list-style-type: none"> The need to ensure water supplies remain resilient to drought. The need to maintain public health across the region, 	<ul style="list-style-type: none"> To protect and improve health and well-being and maintain livelihoods through provision of access to a 	<ul style="list-style-type: none"> Will it help to ensure access to a resilient and secure supply of drinking water?

SEA topic	PPP key policy objectives	Baseline key issues	SEA objectives	Indicator questions
	<ul style="list-style-type: none"> To ensure all communities have a clean, safe and attractive environment in which people can take pride. To ensure secure, safe, reliable, sustainable and affordable supplies of water are provided. Access to high quality open spaces and opportunities for sport and recreation can make an important contribution to the health and well-being of communities. Promotion of healthy communities and protection from risks to health and wellbeing (including where relevant in Wales, supporting the objectives of the Well Being of Future Generations (Wales) Act 2015). Promotion of a sustainable economy supported by universal access to essential utility and infrastructure services. 	<p>particularly in urban areas and deprived areas.</p> <ul style="list-style-type: none"> The need to ensure public awareness of drought conditions and importance of maintaining security of supply without the need for emergency drought measures. The need to ensure water quantity and quality is maintained as far as possible for other users including tourists, recreational users and other users such as farmers. The need to ensure a balance between different aspects of the built and natural environment that will help to provide opportunities local residents and tourists, including opportunities for access to recreation resources and the natural and historic environment. The need to accommodate an increasing population. Sites of nature conservation importance, heritage assets, water resources, important landscapes and public rights of way contribute to recreation and tourism opportunities and subsequently health and well-being and the economy. 	<p>resilient, high quality, sustainable supply of water in drought</p> <ul style="list-style-type: none"> To protect the water environment for other users as far as possible including recreation, tourism and navigation. 	<ul style="list-style-type: none"> Will it help to promote healthy communities and maintain health and wellbeing? Will it assist in maintaining essential services and infrastructure to support health and well-being? Will it avoid negative effects on human health or quality of life, e.g. through noise, air quality or transport impacts? Will it protect recreation, tourist activities and navigation?
Material assets and resource use	<ul style="list-style-type: none"> Promote sustainable management of natural resources, sustainable production and consumption whilst seeking to reduce the amount of waste generated by using materials, energy and water more efficiently. Consider issues of water demand, water supply and water quality in the natural 	<ul style="list-style-type: none"> The need to minimise the consumption of resources, including water and energy The need to reduce the total amount of waste produced in the region, from all sources, and to 	<ul style="list-style-type: none"> To reduce, and make more efficient, the domestic, industrial and commercial consumption of resources, minimise the generation of 	<ul style="list-style-type: none"> Will it minimise the demand for water and/or increase efficiency in water use? Will it minimise the use of energy and promote energy efficiency?

SEA topic	PPP key policy objectives	Baseline key issues	SEA objectives	Indicator questions
	<p>environment and ensure a sustainable use of water resources.</p> <ul style="list-style-type: none"> Contribute to a resource efficient, green and competitive low carbon economy. Maintain a reliable public water supply and ensure there is enough water for human uses, as well as providing an improved water environment. Minimise the production of waste, ensure waste management is in line with the 'waste hierarchy', and eliminate waste sent to landfill. Promote the sustainable management of natural resources (including where relevant in Wales, supporting the objectives of the Well Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016). 	<p>reduce the proportion of this waste sent to landfill.</p> <ul style="list-style-type: none"> Need to reduce leakage from the water supply system. Need to encourage more efficient use of water. 	<p>waste, encourage its re-use and eliminate waste sent to landfill.</p>	<ul style="list-style-type: none"> Will it minimise waste, and increase the proportion sent to reuse or recycling? Will it make use of existing infrastructure? Will it help to encourage sustainable design or use of sustainable materials (e.g. supplied from local resources)?
Water	<ul style="list-style-type: none"> Maintain and improve water quality (surface waters and groundwater). Improve the quality of the water environment and the ecology which it supports, and continue to provide high levels of drinking water quality. Expand the scope of water protection to all waters, surface waters and groundwater. Ensure appropriate management of abstraction and protect flow and level variability across the full range of regimes from low to high conditions. Develop a resilient and flexible water management approach to cope with changing climate, population and economic conditions. Balance the abstraction of water for supply with the other functions and services the water environment performs or provides. Encourage more efficient use of water and promote awareness of water sustainability. Steer new development to areas with the lowest probability of flooding and manage any 	<ul style="list-style-type: none"> The need to further improve the quality of rivers and estuaries taking into account WFD status targets. The need to maintain the quantity and quality of groundwater resources taking into account WFD status targets. The need to improve the resilience, flexibility and sustainability of water resources, particularly in light of potential climate change impacts on surface waters and groundwaters. The need to ensure sustainable abstraction. The need to ensure that people understand the value of water. The need to reduce and manage flood risk. 	<ul style="list-style-type: none"> To maintain or improve the quality of rivers, lakes, groundwater and estuarine waterbodies. To avoid adverse impact on surface and groundwater levels and flows, and ensure sustainable management of abstractions. 	<ul style="list-style-type: none"> Will it minimise risks of adverse effects on water quality? Will it affect WFD compliance, e.g. Good Environmental Status? Will it avoid contamination of groundwater? Will it help to minimise risks associated with unsustainable abstraction of ground and surface waters? Will it affect River Basin Management Plan measures? Will it alter the flow or level regime or residence time of surface waters or groundwaters? Will it enable a sustainable use of water resources that balances demand for water with environmental protection? Will it encourage efficient water use?

SEA topic	PPP key policy objectives	Baseline key issues	SEA objectives	Indicator questions
	<p>residual flood risk, taking account of the impacts of climate change.</p> <ul style="list-style-type: none"> Promote a catchment based approach to the management and work with local stakeholders to deliver catchment-based solutions to water quantity and quality. Develop a resilient and flexible water management approach to cope with changing climate, population and economic conditions. Reduce flood risk to people, residential and non-residential properties, community facilities and key transport links, as well as designated nature conservation sites and heritage assets and landscapes of value. Reduce risk of flooding from reservoirs. 			<ul style="list-style-type: none"> Will it contribute towards improving the awareness of water sustainability and its true value?
Soil, geology and land use	<ul style="list-style-type: none"> Protect and enhance the quality and diversity of geology (including geological SSSIs) and soils, including geomorphology and geomorphological processes which can be lost or damaged by insensitive development. Ensure that soils will be protected and managed to optimise the varied functions that soils perform for society (e.g. supporting agriculture and forestry, protecting cultural heritage, supporting biodiversity, as a platform for construction), in keeping with the principles of sustainable development. Promote catchment-wide approach to land management by relevant stakeholders, in order to benefit natural resources, reduce pollution and develop resilience to climate change. Promote mixed use developments, and encourage multiple benefits from the use of land in urban and rural areas, recognising that some open land can perform many functions. Encourage the effective use of land by reusing land that has been previously developed 	<ul style="list-style-type: none"> The need to protect geological features of importance and maintain and enhance soil function and health. The need to manage the land more holistically at the catchment level, benefitting landowners, other stakeholders, the environment and sustainability of natural resources (including water resources). The need to make use of previously developed land (brownfield land) and to reduce the prevalence of derelict land in the region. 	<ul style="list-style-type: none"> To protect and enhance geology, geomorphology, and the quality and quantity of soils. 	<ul style="list-style-type: none"> Will it avoid damage to and protect geologically important sites? Will it avoid damaging the quality of agricultural land? Will it protect, maintain and enhance soil function and health?

SEA topic	PPP key policy objectives	Baseline key issues	SEA objectives	Indicator questions
	(brownfield land), provided that it is not of high environmental value.			
Air and climate	<ul style="list-style-type: none"> Reduce greenhouse gas emissions. Targets include: reduce the UK's greenhouse gas emissions by at least 80% (relative to 1990 levels) by 2050. Reduce the effects of air pollution on ecosystems. Improve overall air quality. Minimise energy consumption, support the use of sustainable/renewable energy and improve resilience to climate change. Build in adaption to climate change to future planning and consider the level of urgency of associated risks of climate change impacts accordingly. Need for adaptive measures to respond to likely climate change impacts on water supply and demand. Sustain compliance with and contribute towards national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Minimise energy consumption, support the use of sustainable/renewable energy and improve resilience to climate change. 	<ul style="list-style-type: none"> The need to reduce air pollutant emissions to comply with EU and national air quality standards. The need to mitigate against climate change through the reduction in greenhouse gas emissions to contribute to risk reduction over the long term. The need to adapt to the impacts of climate change, for example through sustainable water resource management, specific aspects of natural ecosystems (e.g. connectivity), as well as accommodating potential opportunities of climate change. 	<ul style="list-style-type: none"> To maintain and improve air quality. To minimise greenhouse gas emissions. To adapt and improve resilience to the threats of climate change. 	<ul style="list-style-type: none"> Will it reduce or minimise air pollutant emissions? Will it result in an increase in greenhouse gas emissions over and above that that would be produced to supply an equivalent quantity of water in non-drought conditions? Will it increase emissions to air in areas sensitive to emissions (e.g. in proximity to an Air Quality Management Areas (AQMA) or sensitive habitat)? Will it reduce or minimise transport or energy requirements, and associated air and greenhouse gas emissions? Will it reduce vulnerability to risks associated with climate change effects (e.g. reduce the adverse effects of droughts and floods)? Will it improve resilience/adaptability to likely effects of climate change, e.g. by increasing resilience of water supplies?
Archaeology and cultural heritage	<ul style="list-style-type: none"> Built development in the vicinity of historic buildings could have implications for the setting and/or built fabric and cause damage to any archaeological deposits present on the site. Ensure active management of environmental and cultural assets. Ensure effects resulting from changes to water level (surface or sub-surface) on all water 	<ul style="list-style-type: none"> The need to conserve or enhance sites of archaeological importance and cultural heritage interest, particularly those which are sensitive to the water environment. 	<ul style="list-style-type: none"> To conserve and enhance the historic environment, heritage assets and their settings, and protect archaeologically important sites. 	<ul style="list-style-type: none"> Will it avoid damage to and protect the historic environment, heritage assets and their settings, places and spaces that enhance local distinctiveness? Will there be any alteration of the hydrological setting of water-dependent assets?

SEA topic	PPP key policy objectives	Baseline key issues	SEA objectives	Indicator questions
	<p>dependent historical and cultural assets are avoided. Consider effects on important wetland areas with potential for paleo-environmental deposits.</p> <ul style="list-style-type: none"> Promote the conservation and enhancement of the historic environment, including the promotion of heritage and landscape as central to the culture of the region and conserve and enhance distinctive characteristics of landscape and settlements. Conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations. 			<ul style="list-style-type: none"> Will it improve access, value, understanding or enjoyment of heritage assets and culturally/historically important assets in the region?
Landscape and visual amenity	<ul style="list-style-type: none"> Protection and enhancement of landscape (including designated landscapes, landscape character, distinctiveness and the countryside). Abstraction and low river flows could negatively affect landscape and visual amenity. Enhance the value of the countryside by protecting the natural environment for this and future generations. Improve access to valued areas of landscape character in sustainable ways to enhance its enjoyment and value by visitors and stakeholders. 	<ul style="list-style-type: none"> The need to protect and improve the natural beauty of the region's AONBs and other areas of natural beauty. 	<ul style="list-style-type: none"> To protect and enhance designated and undesignated landscape, townscape and the countryside. 	<ul style="list-style-type: none"> Will it avoid adverse impacts and enhance designated landscapes? Will it help to protect and improve non-designated areas of natural beauty and distinctiveness (e.g. woodlands) and avoid the loss of landscape features and local distinctiveness?

4.2 Proposed Framework for Assessment

4.2.1 Primary Assessment

An appraisal framework is proposed to assess each of the potential draft Drought Plan measures against the SEA objectives. The appraisal framework will be applied to test the performance of each of the alternative measures against the SEA objectives. The assessment will be used to inform the selection and phasing of measures for inclusion in Severn Trent Water's draft Drought Plan. The proposed appraisal framework table is given in **Table 4.2**.

The first and second columns of **Table 4.2** set out the SEA topics and objectives. The fourth column will be populated during the assessment with a commentary and evaluation of the impact of each alternative measure on the objectives for each topic, with reference to the indicator questions set out in column three. The assessment will assume the implementation of standard best practice in implementing the measures and any defined mitigation measures (which will be set out) so that the significance of effects relates to the residual effects after mitigation in line with the ODPM Practical Guide and UKWIR SEA national guidance. The mitigation measures for any identified adverse effects will be identified within the appraisal framework.

The ninth column will identify the magnitude of the effect on a scale of low, medium and high and will include consideration of the impact scale, certainty, duration and permanence in compliance with criteria for determining the likely significance of effects specified in the SEA Regulations Part 2, Regulation 9(2a) and Schedule 1. The value and sensitivity of the receptor(s) will be identified in the tenth column on a scale of low, medium and high.

The residual adverse and beneficial effects (after application of best practice approaches and any appropriate and explicit mitigation measures) will be identified in the eleventh and twelfth columns respectively. These will be identified separately so as to avoid mixing adverse and beneficial effects, in line with SEA best practice, so that these can clearly be understood and transparency of effects is maintained throughout the Drought Plan decision-making process.

With respect to duration, short-term impacts will be defined as those that last for up to six months, medium term impacts are those that extend for six months to two years whilst long term impacts are assessed as those that continue for greater than two years.

Table 4.2 Example SEA Appraisal Framework Table (Biodiversity, flora and fauna topic, Objective 1.1)

SEA topics and objectives			Assessment of option								
Topics	SEA objective	Indicator questions	Potential residual effect on sensitive receptors commentary	Scale of effect	Certainty of effect	Duration of effect	Permanence of effect	Magnitude of effect	Value/ sensitivity of receptor	Residual adverse effect significance	Residual beneficial effect significance
Biodiversity, flora and fauna	1.1 To protect and enhance biodiversity, ecological functions, capacity, and habitat connectivity within Severn Trent Water's supply and source area.	<p>Will it avoid damage to aquatic, transitional and terrestrial species and habitats including fish populations (particularly migratory fish)?</p> <p>Will it enhance aquatic, transitional and terrestrial species and habitats?</p> <p>Will it protect the most important sites for nature conservation?</p> <p>Will it ensure the sustainable management of natural habitats, taking into account climate change adaptability?</p> <p>Will it affect WFD compliance e.g. good ecological potential/status?</p> <p>Will it protect natural capital and ecosystem services?</p>									

The SEA appraisal framework will be used to capture the assessment for each draft Drought Plan option (one table completed per option) and the draft Drought Plan as a whole.

Varying levels of uncertainty are inherent within the assessment process. The assessment will minimise uncertainty through the application of expert judgement. The level of uncertainty of the option assessment for each SEA objective will be reported in the appraisal framework. Where there is significant uncertainty which precludes an effects assessment category being assigned for a particular option and SEA objective, an “uncertain” residual effects assessment label will be applied to that specific SEA objective.

In developing the Drought Plan, both supply augmentation drought options and demand management / water use restriction options will be considered through the SEA. The assessment will therefore provide information on the relative environmental performance of reasonable alternative options, and is intended to make the decision-making process more transparent.

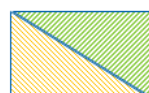
The assessment of the options and the overall draft Drought Plan will be carried out using the effects assessment matrix shown in **Figure 4.1**, taking account of the scale, duration and permanence of the effect. The definitions for the effect significance are explained beneath **Figure 4.1**. The colour coding shown in **Figure 4.1** will be used to complete the columns for residual effects in the SEA appraisal framework.

The effects assessment will take account of any proposed mitigation measures that have been incorporated into the option, i.e. it is the residual effects after the application of mitigation measures that will be assessed.

The resulting significance of effects will be considered in the prioritisation of options for the draft Drought Plan. Where major adverse residual effects are predicted, should the option/programme be included in the Drought Plan, measures to prevent, reduce and, where possible offset, these effects on the environment will be outlined in the Environmental Report as appropriate. Mitigation may include additional provisions within the Drought Plan itself and/or measures to be applied during the Drought Plan implementation stage. Severn Trent Water will consider how any remaining significant residual effects identified are to be monitored to identify any unforeseen adverse effects and to enable appropriate remedial action to be taken.

Figure 4.1 Effect Assessment Matrix

Significance of Effect		Value/sensitivity of receptor		
		High	Medium	Low
Effect magnitude (includes scale of effect)	High	Major Beneficial Major Adverse	Major Beneficial Major Adverse	Moderate Beneficial Moderate Adverse
	Medium	Major Beneficial Major Adverse	Moderate Beneficial Moderate Adverse	Minor Beneficial Minor Adverse
	Low	Minor Beneficial Minor Adverse	Minor Beneficial Minor Adverse	Negligible



= Significance of effect dependent on value/sensitivity of receptor and magnitude

Effect significance definitions:

Major - effects represent key factors in the decision-making process. They are generally associated with sites and features of international, national or regional importance. If adverse, such resources/features are generally those which cannot be replaced or relocated.

Moderate - effects are likely to be important considerations at a regional or district scale. If adverse, they are likely to be of potential concern.

Minor - effects are not likely to be decision-making issues. Nevertheless, the cumulative effect of such issues may lead to an increase in the overall effects on a particular area or on a particular resource.

Negligible - effects which are not perceptible, being within normal bounds of variation or the margin of forecasting error.

For the **'high' effect magnitude** (top row), a major effect significance is assigned for both high and medium value receptors to reflect the magnitude of the effect.

For the **'low' effect magnitude and 'high' value receptor** (bottom left box), the significance of effect could be minor, moderate or major dependent on the precise nature of the adverse effect or benefit.

All options (both supply-side options and demand management measures) will be assessed to the same level of detail, in line with the SEA legislative requirements, national SEA guidance and the UKWIR SEA guidance. The level of detail is consistent with the strategic nature of SEA.

The assessments will take account of a suite of environmental and social datasets that are available across the geographical footprint of all the measures under consideration, as summarised in Section 3 (Environmental Baseline). The parallel HRA and WFD assessments will also inform some of the SEA objective assessments.

4.2.1.1 Summarising the effects assessment

The completed appraisal framework table for each option will be presented in full in an appendix to the Environmental Report. A summary of the assessment will be presented within the main text of the Environmental Report as a colour-coded visual evaluation (VE) matrix. An example of the proposed VE matrix is given in **Table 4.3**. For each option and each SEA topic listed in the left hand column, the VE matrix summarises the likely significance of impacts (which will be discussed in full in the completed appraisal framework tables).

Table 4.3 Example of a Visual Evaluation Matrix

Drought Option	SEA objective – adverse effects								SEA objective – beneficial effects							
	Objective 1.1	Objective 1.2	Objective 2.1	Objective 2.2	Objective 3.1	Objective 4.1	Objective 4.2	Objective 4.3	Objective 1.1	Objective 1.2	Objective 2.1	Objective 2.2	Objective 3.1	Objective 4.1	Objective 4.2	Objective 4.3
Option 1	Blue	Red	Blue	Yellow	Yellow	Red	Red	Red	Blue	Dark Green	Blue	Blue	Light Green	Dark Green	Light Green	Dark Green
Option 2	Orange	Blue	Yellow	Red	Yellow	Orange	Orange	Red	Dark Green	Blue	Light Green	Blue	Blue	Blue	Light Green	Dark Green

In assessing each option the effects (beneficial or adverse) of any interactions between SEA topics will be identified, assessed and reported.

4.2.2 Secondary, Cumulative and Synergistic Environmental Effects

Schedule 2(6) of the SEA Regulations requires the assessment of “The likely significant effects on the environment, including short, medium and long-term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects....” These can be defined as follows:

- Secondary or indirect effects are effects that are not a direct result of the plan, (e.g. an abstraction that changes local groundwater levels and thus affects the ecology of a nearby wetland).
- Cumulative effects arise, for instance, where several nearby groundwater sources each have insignificant effects but together have a measurable effect on river flows; or where several individual effects (e.g. traffic disruption) have a combined effect.

- Synergistic effects interact to produce a total effect greater than the sum of the individual effects. Synergistic effects often happen as habitats, resources or human communities get close to capacity. For instance, a wildlife habitat can become progressively fragmented with limited effects on a particular species until the last fragmentation makes the areas too small to support the species at all.

The term 'cumulative effects' is being adopted as the collective term to include secondary, cumulative and synergistic effects (as suggested by the Practical Guide). The SEA of the Drought Plan will include cumulative effects assessment at each of the assessment levels as described in the following sections (option-level and overall Drought Plan). It should be noted that some options may be mutually exclusive (i.e. only one of these options can be developed) and this will also be identified in the SEA as part of the option-level assessment. For the Drought Plan level assessment, cumulative effects will include consideration of other plans, programmes and projects in the context of spatial and/or temporal proximity.

A matrix such as the example provided in **Figure 4.2** will be used to help consider interactions between options or programmes. In assessing these effects, consideration will be given to other factors which may affect the receiving environment in the short, medium and long term.

Figure 4.2 Cumulative Effects Assessment Matrix

Option 2				
Option 3				
Option 4				
Option 5				
Drought Plan Option	Option 1	Option 2	Option 3	Option 4

Key

	Mutually exclusive schemes, i.e. use the same site or the same resource
	Potential adverse construction impacts if constructed simultaneously
	Potential cumulative impacts in operation
	No cumulative impacts

4.2.2.1 Drought Plan Level Cumulative Effects Assessment

To meet the requirements of the SEA Regulations, the cumulative effects between the draft Drought Plan with other relevant plans, programmes or projects, including Severn Trent Water's Water Resource Management Plan (WRMP) and neighbouring water companies' WRMPs and Drought Plans.

The following cumulative assessments are proposed in the SEA:

- An assessment of cumulative effects of options that could potentially be implemented at the same time. Mutually exclusive options (e.g. those that draw upon the same resource or use the same site) will also be identified.
- Assessment of cumulative effects of the Water Drought Plan with Severn Trent's Water Resources Management Plan (WRMP) 2019, other relevant water company Drought Plans and 2019 WRMPs, Environment Agency Drought Plans and other relevant water management plans. The potential for a neighbouring company implementing options under its Drought Plan simultaneously will be considered.
- Assessment of potential cumulative effects of the Drought Plan with any other identified relevant programmes, plans and strategic projects that may be in place / implemented during the period of the Drought Plan. The list of programmes, plans and strategic projects that will be considered

by the SEA will include relevant Local plans, other land use and development plans, River Basin Management Plans and major infrastructure projects, for example HS2.

One of the limitations of the cumulative or in-combination assessment of Severn Trent Water's Drought Plan is that whilst an environmental appraisal of each measure can be undertaken, the lack of predictability of which measures will be implemented in any particular drought event means that it may be impossible to provide a definitive cumulative assessment of the impacts of the plan for a possible future drought event. Cumulative assessments will be undertaken assuming, as a worst case, that the implementation of measures could occur simultaneously. Spatial proximity and therefore potential impacts on a common receptor is the primary consideration (e.g. the same designated area or reach of river).

Due to the uncertainty of timing of implementation of drought measures, the findings of the SEA will need to be reviewed during an actual drought event and a further cumulative assessment made of the measures proposed for implementation at that time, based on the findings of the cumulative assessments that will be set out in the Environmental Report.

5 Next Steps

5.1 Consultation on the Scoping Report

This Scoping Report represents the output of Stage A, Tasks A1 – A4 (Setting the context and objectives, establishing the baseline and proposing the scope of the SEA; for more detail see Table 1.4) and is to be issued to the statutory consultees for comment (see Section 1.7). It will also be made available to other stakeholders via the Severn Trent Water website. Following consultation on this Scoping Report, it is likely that some modifications will be necessary to incorporate consultee feedback, as noted below.

Task A5: Consulting on the scope of the SEA

A consultation period of five weeks will be provided for consultees to provide comments on the scope of the SEA described within this report in accordance with SEA Regulation 12(6).

5.2 Stage B: Developing and Refining Alternatives and Assessing Effects

Stage B of the SEA process comprises the SEA assessment and the development of alternative options.

Task B1. Testing the plan or programme objectives against SEA objectives

Each Drought Plan measure being considered for inclusion in the draft Drought Plan will be assessed through the SEA process against the objectives agreed as a result of the Scoping consultation. The impacts of each draft Drought Plan measure on each objective will be assessed according to the methodology described in Section 4. The outputs of the assessment will be a completed appraisal framework table for each draft Drought Plan measure and a colour coded (major beneficial effect to major adverse effect) summary matrix which will provide a comparative assessment of the residual environmental effects of implementing each measure. This will be used by Severn Trent Water to inform decisions on the measures to be included in the draft Drought Plan and their phasing; it will also highlight those measures where significant negative impacts may require consideration of alternative options.

Task B2. Developing strategic alternatives

Where significant negative impacts are identified, it may be necessary to identify other alternative options, both demand and supply side. These would be discussed and agreed with Severn Trent Water and then tested against the same objectives, using the same methodology as described above.

Task B3. Predicting the effects of the plan or programme, including alternatives

The provisionally preferred set of measures and the draft Drought Plan as a whole will be further tested against the SEA objectives, including the cumulative effects assessment.

Task B4 and B5. Evaluating the effects of the plan or programme, including alternatives, and mitigating adverse effects

An evaluation of the draft Drought Plan will be undertaken by Severn Trent Water including consideration of the phasing and priority order for implementation of the different measures in a drought. This process will be recorded and be incorporated within the SEA Environmental Report and the draft Drought Plan for transparency.

Task B6. Proposing measures to monitor the environmental effects of plan or programme implementation

Dependent on the effects identified, measures to monitor the environmental effects of the Drought Plan if and when implemented will be established and reported in the Environmental Report. Monitoring requirements will be discussed in consultation with the Environment Agency, Natural England and Historic England (plus Natural Resources Wales and Cadw for any effects in Wales), as applicable and any other relevant organisations.

5.3 Stage C: Preparation of Environmental Report

5.3.1 Structure and Content

The findings of the SEA will be documented in an Environmental Report (this comprises Stage C of the SEA process). A draft structure for the report is proposed in **Table 5.1**. The proposed structure of the report is derived from the requirements specified by the SEA Regulations⁶⁸ and ODPM Guidelines. A non-technical summary of the information will be provided under the headings listed in Schedule 2 of the SEA Regulations.

Table 5.1 Draft structure for the Environmental Report

Non-Technical Summary	
1	Introduction
1.1	Background and Purpose of Report
1.2	Application of SEA to Drought Planning
1.3	Severn Trent Water's Supply System and Drought Planning
1.4	Drought Planning Process
1.5	Stages of SEA Process
1.6	Structure of Environmental Report
1.7	Consultation
2	Policy Context
2.1	Introduction
2.2	Review of Policies, Plans and Programmes
3	Environmental Baseline Review
3.1	Introduction
3.2	Limitations of the data and assumptions made
3.3	Overview
3.4	Key Issues
3.5	Summary of Key Issues
4	Methodology
4.1	Introduction
4.2	Assessment Methodology and SEA Framework
4.3	Primary Assessment
4.4	Secondary, Cumulative and Synergistic Environmental Effects Assessment
4.5	Limitations of the Assessment
5	Assessment of Alternative Draft Drought Plan Measures
5.1	Draft Drought Plan Measures
5.2	Assessment of Measures Against SEA Objectives
5.3	Demand-Side Measures Assessment Findings
5.4	Supply-Side Measures Assessment Findings

⁶⁸ SEA Regulations, Part 3, Regulations 2 and 3 and Schedule 2.

5.6	Decision-making on measures to be included in the draft Drought Plan
5.7	Implementation and phasing of selected measures
5.8	Summary
6	Cumulative Assessment
6.1	Introduction
6.2	Cumulative Effects between measures
6.3	Cumulative Effects with other Severn Trent Water activities
6.4	Cumulative Effects with other relevant water management plans
6.6	Cumulative Effects with other plans and projects
7	Mitigation and Monitoring
7.1	Overview
7.2	Mitigation measures
7.3	Monitoring requirements
8	Summary
8.1	Assessment of draft Drought Plan Measures
8.2	Role of SEA in influencing development of the draft Drought Plan
8.2	Mitigation and Monitoring Requirements

Appendices

Appendix A	Statutory consultee responses to the SEA Scoping Report
Appendix B	Review of policies, plans and programmes
Appendix C	Environmental baseline review
Appendix D	Detailed assessment tables
Appendix E	SEA Quality Assurance checklist

5.4 Stage D: Consulting on the Draft Drought Plan and the Environmental Report

Severn Trent Water will formally invite the statutory consultation bodies and the public to comment on the draft Drought Plan and SEA Environmental Report. This comprises Stage D of the SEA process (see section 1.5). Any comments made will be taken into account in developing the Final Drought Plan.

Any significant changes made to the draft Drought Plan at that stage of the process, including changes based on consultation responses and the SEA, will be assessed to identify their likely significant effects. The findings of the assessment will then be taken into account in producing the Final Drought Plan.

Once the Final Drought Plan is published and adopted, Severn Trent Water will publish a statement describing how the SEA and the responses to consultation have been taken into account during the preparation of the Drought Plan. This statement will describe how environmental considerations have been integrated into the Drought Plan, including information to make clear any changes made or alternatives rejected. Information will also be made available on how monitoring will be carried out during implementation of the Drought Plan.

5.5 Stage E: Monitoring the Significant Effects of the Plan

This stage of the SEA process will only commence once the Drought Plan is implemented. The monitoring of significant effects will be carried out in line with the monitoring approach set out in the Environmental Report and confirmed in the SEA Statement. This may also include acquisition of data to aid the understanding of the environmental and social baseline for future plans.

6 Quality Assurance

ODPM Guidance on SEA contains a Quality Assurance checklist to help ensure that the requirements of the SEA Directive are met. The checklist is reproduced in **Appendix B** indicating where this Scoping Report meets the requirements, and which requirements will be addressed in the Environmental Report.

Appendices

Appendix A Review of Policies, Plans and Programmes

Appendix B Quality Assurance Checklist



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