RICARDO
Member of WSP

STRATEGIC ENVIRONMENTAL ASSESSMENT OF UNITED UTILITIES' DRAFT DROUGHT PLAN 2027

Environmental Report

Report for: United Utilities

Ricardo ref. ED19483 Issue: 1 17/03/26

Customer:
United Utilities

Customer reference:
ED19483

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Ricardo reference:
ED19483

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Date:
17/03/26

ISSUE LOG

Version	Date	Author	Changes
0.1	04/03/2026	Katie Moran, Ingrid Kintu, Jonathan Briggs, Charlotte McEnhill	First Draft Issued to UU
1.0	17/03/2026	Katie Moran, Ingrid Kintu, Jonathan Briggs, Charlotte McEnhill	Final Issued to UU

EXECUTIVE SUMMARY

INTRODUCTION

Under the Water Act 2014, United Utilities (UU) is required to prepare and update a Drought Plan (DP) every five years. UU published its current statutory Final Drought Plan in August 2022. UU is currently revising its statutory Drought Plan for publication as a draft in March 2026. It has been determined that a Strategic Environmental Assessment (SEA) and a Habitats Regulations Assessment (HRA) are required for the development of the Drought Plan. The Final Drought Plan is anticipated to be published in 2027.

The Drought Plan (DP) outlines actions to balance the protection of the environment with maintaining a secure water supply to customers. The DP is aligned with UU's Water Resources Management Plan 2024 (WRMP24), the objective of which is to establish a strategic plan for delivering adequate water resources over a 25-year period.

Drought Plans encompass several drought options that will only be implemented as required. Each drought differs in severity, season, location and duration, and different combinations of these factors may require a bespoke response in terms of measures implemented. In the context of drought planning, individual drought options are considered as reasonable alternatives. Given the operational and conditional nature of drought planning, the SEA does not identify a preferred option but provides a comparative assessment of the environmental performance of each drought option. UU's Draft Drought Plan 2027 comprises a total of 22 drought options (one supply side option, six demand options and 15 drought permit sites).

SEA of plans and programmes is a statutory requirement under the Environmental Assessment of Plans and Programmes Regulations 2004. The purpose of SEA is to provide high-level and strategic environmental protection by incorporating environmental considerations into the preparation of plans and policies. In the context of drought planning, SEA assists in identifying the likely significant environmental effects of UU's drought options and determines how any adverse impacts might be mitigated.

The SEA assesses the relative environmental performance of alternatives, thereby supporting a more transparent and informed decision-making process. The SEA can, therefore, be used to support the timing and implementation of drought options within the Drought Plan.

SEA Screening confirmed that UU's Draft Drought Plan 2027 required both SEA and HRA. The HRA of UU's Draft Drought Plan 2027 has been undertaken in parallel with the SEA and is reported separately in the HRA Screening Report. The HRA screening process identifies whether each drought option in the DP (either alone, in combination or with other plans or projects) is likely to have significant effects on European sites (as defined under the Habitats Regulations 2017), i.e. sites of international conservation importance. The findings of both the SEA and HRA have informed the revision of the Drought Plan through an iterative process.

The findings of the SEA are presented within this Environmental Report, which accompanies UU's submission of the Draft Drought Plan 2027 to Defra and is subject to public consultation.

ASSESSMENT METHODOLOGY

The assessment has been 'objectives-led'. SEA objectives have been derived from environmental objectives established in law, policy or other plans and programmes and from a review of the baseline information. The SEA objectives have been categorised under the following topic areas: biodiversity, flora and fauna; population and human health; material assets and resource use; water; soil, geology and land use; air and climate; archaeology and cultural heritage; landscape and visual amenity; and inter-relationships. The overall findings of the SEA describe the extent to which each drought option meets the objectives for each topic.

The outputs of the assessment comprise completed appraisal framework tables for each drought option and a colour-coded summary matrix (ranging from major beneficial impacts to major adverse impacts), which provides a comparative assessment of the residual environmental effects of implementing each drought option (i.e. those impacts remaining after the implementation of mitigation measures).

Where potential adverse effects were identified, the assessment considered the mitigation hierarchy, including avoidance, reduction, and, where appropriate, compensation measures. Residual effects are reported following the application of embedded and additional mitigation, where relevant.

A cumulative, or in-combination, assessment has also been undertaken. This involved examining the likely significant effects of each of the drought options in combination with each other, both intra- and inter-water resource zone (WRZ) and in combination with other relevant plans and programmes.

FINDINGS OF THE ASSESSMENTS

The findings of the SEA for each drought option are presented in **Table NTS-1** and summarised below.

Supply side options

Minor construction works are required to allow access to Castle Carrock deadwater, and few residual environmental effects are anticipated. Operationally, the supply side option is within existing licensed abstraction limits, and it is assumed that the existing abstraction licence would not have been granted if these options resulted in unsustainable abstraction. Overall, most of the impacts of implementing this option are anticipated to be negligible or minor adverse, with minor beneficial impacts associated with the benefits to the security of public water supply and climate change adaptation.

Demand side options

Demand side measures serve to reduce pressure on water resources by reducing customer demand for water. Reducing abstraction at the source reduces the amount of energy needed for water abstraction, treatment and distribution. Overall, impacts of these drought options are considered to range from negligible to major beneficial. Adverse impacts on population and human health were associated with options involving water use restrictions.

Drought permit options

The magnitude of impacts on SEA objectives for drought permit options (i.e. where there is modification to the conditions of an existing abstraction licence) varies between and within the options, ranging from major beneficial for the SEA objective for population and human health to major adverse for the SEA objective for biodiversity, flora and fauna. The latter were associated with adverse changes to surface water levels and flows.

CUMULATIVE IMPACTS

The cumulative, or in-combination, assessment identified the potential for adverse impacts if two drought options were to be implemented simultaneously, either intra- or inter-WRZ. In the majority of combinations, no impacts are considered likely. However, in some cases, impacts have been identified where, for example, both options draw on the same water resource (e.g., the same groundwater catchment or the same river). Due to the uncertainty surrounding the timing and sequencing of drought option implementation, cumulative or in-combination effects will be reviewed at the point at which drought options are triggered, based on the outcomes of the individual (project-level) assessments.

Assessment of UU's Draft Drought Plan 2027 with other plans and programmes, including UU's WRMP, Environment Agency / Natural Resources Wales Drought Plans, other water company Drought Plans and National Policy Statements, concluded that no significant cumulative or in-combination effects are anticipated.

Table NTS-1: VE matrix summary for Draft Drought Plan 2027 options

Option		SEA Topics and Objectives																				Commentary
		Biodiversity, flora and fauna			Population and human health			Material assets and resource use		Water				Soil, geology and land use		Air and climate			Archaeology and Cultural Heritage	Landscape and Visual Amenity	Inter-relationships	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	4.1	4.2	4.3	4.4	5.1	5.2	6.1	6.2	6.3	7.1	8.1	9.1	
Supply Side Options																						
Castle Carrock Reservoir, dead water storage	Adverse								None				None		None			None				The implementation of this drought option would result in a minor adverse impact on biodiversity and population and human health, due to potential impacts on fish populations and resulting impacts on angling. There are also anticipated to be temporary minor adverse impacts on river flows and water quality. Reservoir drawdown and exposure of shoreline margins may result in minor adverse impacts to soil, geology and land use. The impact of the drought option on landscape and visual amenity is considered to be moderate adverse but temporary. Impacts to inter-relationships between topics have been summarised as moderate adverse.
	Beneficial	None	None	None		None		None		None	None		None	None	None	None	None		None	None	None	Overall, five minor beneficial effects were identified. These were in relation to population and human health based on continued supply of drinking water and a beneficial impact on adaptation to climate change. The remaining impacts on water, soil and geology, and inter-relationships would be negligible.
Demand Side Options																						
Drought Publicity	Adverse	None	None	None	None		None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	A negligible adverse impact has been identified on recreation due to potential for changes in public perception of water-based recreation. This impact is however anticipated to be temporary.
	Beneficial			None										None	None	None			None	None		Minor beneficial effects have been identified relating to Population and Human Health, Biodiversity, Flora and Fauna, Material Assets and Resource Use, Air and Climate, and Water, relating to reduced requirement for abstraction and increased climate resilience. The effect on inter-relationships was also assessed to be minor beneficial.
Enhanced leakage detection and repair	Adverse								None	None		None	None					None			None	Minor adverse impacts have been identified for the topics Biodiversity, Flora and Fauna as a result of construction impacts on ecosystem services.
	Beneficial			None		None								None					None			Moderate beneficial impacts have been identified for Population and Human Health, Water, and Air and Climate in relation to water savings and improving adaptation to climate change. Minor beneficial effects have been identified for the topics of Biodiversity, Flora and Fauna, Material Assets and Resource Use, Soil, Geology and Land Use and Inter-relationships, relating to a reduction in water lost and consequently, a reduced need for abstraction.
Campaign for voluntary water use restraint	Adverse	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Overall, no adverse effects have been identified.
	Beneficial			None										None	None	None			None	None		Moderate beneficial effects have been identified for the topics of Water through the promotion of water efficiency measures. Minor beneficial effects have been identified for Population and Human Health, Material Assets and Resource Use and Water,

																						Soil, Geology and Land Use and Air and Climate relating to reduced need for abstraction and improving adaptation to climate change. A minor beneficial impact is anticipated for inter-relationships.
Temporary Use Ban (TUB)	Adverse	None	None	None				None	None	None	None	None	None	None	None	None	None	None	None	None	None	Minor adverse impacts are anticipated towards Population and Human Health relating to restricting recreational use and the potential to disturb economic activity.
	Beneficial			None										None	None	None			None	None		Moderate beneficial impacts are anticipated towards Water as a result of promoting water efficiency. Minor beneficial impacts are anticipated towards Population and Human Health and Water, relating to water savings and to Material Assets and Resource Use, Water, Soil, Geology and Land Use, and Air and Climate, relating to improving water efficiency, reducing demand and improving adaptation to climate change.
Ordinary Drought Order (Non-Essential Use Ban)	Adverse	None	None	None				None	None	None	None	None	None	None	None	None	None	None	None	None	None	Adverse effects are anticipated in relation to Population and Human Health; a major adverse effect as a result of economic impacts to certain business sectors, a moderate adverse effect due to potential for impacts on recreation and a minor adverse effect due to potential short-term impacts on standard of living.
	Beneficial			None										None	None	None			None	None		Moderate beneficial impacts are anticipated towards population and human health relating to water savings. Moderate beneficial impacts are also anticipated towards Material Assets and Resource Use, Water and Air and Climate, relating to reduced need for abstraction and improving adaptation to climate change. Minor beneficial impacts are anticipated towards Water and Air and Climate, also relating to reduced requirement for abstraction at source. Minor beneficial impacts are anticipated for Inter-relationships.
Pressure management	Adverse	None	None	None				None	None	None	None	None	None	None	None	None	None	None	None	None	None	Minor adverse impacts are anticipated towards Population and Human Health due to potential delays in water provision caused by pressure management.
	Beneficial			None		None							None	None	None	None			None	None		Moderate beneficial impacts are anticipated for Population and Human Health, Material Assets and Resource Use and Water and Air and Climate, reflecting reduced water consumption, reduced abstraction, lower greenhouse gas emissions and improved adaptation to climate change. Additionally, minor beneficial impacts are noted for Water, resulting from the reduced need for abstraction. A minor beneficial impact is also identified for Inter-relationships.
Drought Permit Options																						
Delph Reservoir	Adverse				None		None	None	None				None		None	None	None	None				Overall, minor adverse effects were identified relating to the impact of the drought option on a number of NERC and notable species, impact of riverine flow reduction on biodiversity, water quality and fluvial geomorphology. The impact of inter-relationships has been assessed as minor.
	Beneficial	None	None	None						None	None	None	None	None	None	None	None		None		None	Minor beneficial effects were identified relating to population and human health based on continued supply of drinking water and benefits associated with the landscape amenity of the reservoir. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change.
Dovestone Reservoir 10 Ml/d	Adverse				None		None	None	None				None		None	None	None	None	None			Minor adverse effects were identified relating to the impact of river flow reduction on biodiversity, water quality, and landscape and visual amenity. The effect on Inter-relationships has been assessed as minor.

	Beneficial	None	None	None					None		None		None		None	None	None		None	None	None	Overall moderate beneficial effects were identified relating to population and human health, and air and climate, based on continued supply of drinking water and improving adaptation to climate change. As the drought permit will slow the rate of drawdown, it is also predicted to have a minor positive effect on reservoir water level and exposure.
Dovestone Reservoir 5 Ml/d	Adverse				None		None	None	None				None		None	None	None	None	None			Minor adverse effects were identified relating to the impact of river flow reduction on biodiversity, water quality, and landscape and visual amenity. The effect on Inter-relationships has been assessed as minor.
	Beneficial	None	None	None					None		None		None		None	None	None		None	None	None	Overall moderate beneficial effects were identified relating to population and human health, and air and climate, based on continued supply of drinking water and improving adaptation to climate change. As the drought permit will slow the rate of drawdown, it is also predicted to have a minor positive effect on reservoir water level and exposure.
Fernilee Reservoir	Adverse				None		None	None					None		None	None	None	None				Minor adverse effects are anticipated to biodiversity, water flow and levels and fluvial geomorphology. The effect on Inter-relationships has also been assessed as minor.
	Beneficial	None	None	None		None				None	None	None	None	None	None	None	None		None	None		Overall, minor beneficial effects are anticipated to population and human health based on continued provision of public water supplies. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change.
Jumbles Reservoir 12 Ml/d	Adverse				None			None	None				None		None	None	None	None	None			The implementation of this drought option would result in minor adverse effects on the spread of INNS, water levels and flows, water quality, fluvial geomorphology and visual amenity. Subsequently, the impacts on inter-relationships have been assessed as minor.
	Beneficial	None	None	None							None	None	None	None	None	None	None		None			Minor beneficial effects were identified relating to population and human health based on continued supply of drinking water. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change. Minor beneficial impacts were assessed due to the drought option resulting in more water being retained in Jumbles Reservoir, which would be expected to have a positive impact on aesthetics.
Jumbles Reservoir 6 Ml/d	Adverse				None			None	None				None		None	None	None	None				The implementation of this drought option would result in moderate adverse impacts to water levels and flows and fluvial geomorphology. Moderate adverse impacts are anticipated to biodiversity in terms of impact upon a number of NERC and notable fish species. A reduction in water levels would also result in minor adverse impacts upon potential spread of INNS and WFD status. Therefore, the impact upon inter-relationships has been assessed as moderate adverse.
	Beneficial	None	None	None						None	None	None	None	None	None	None	None		None			Improved resilience of water supplies to drought is assessed to have a moderate beneficial impact on adaptation to climate change. Moderate beneficial effects were also identified in relation to population and human health based on continued supply of drinking water. More water retained in the reservoir is anticipated to have a minor beneficial impact on recreation and landscape and visual amenity.
Longdendale Reservoirs 25 Ml/d	Adverse				None		None	None	None				None		None	None	None	None				Moderate adverse impacts are anticipated on water levels and flow. The implementation of this drought option would result in minor adverse impact on a number of NERC and notable species, water quality and on water dependent ecosystems in

																					the affected reach. There would also be minor adverse impacts on the aesthetics and landscape of the study area.
	Beneficial	None	None	None		None				None	None	None	None	None	None	None	None		None	None	Overall, two major beneficial effects were identified relating to population and human health based on continued supply of drinking water. There would also be a minor beneficial impact from the drought option for adaptation to climate change. The remaining beneficial impacts on material assets and resources would be negligible.
Longdendale Reservoirs 15 Ml/d	Adverse				None		None	None	None				None		None	None	None	None				Moderate adverse impacts are anticipated on water levels and flow. The implementation of this drought option would result in minor adverse impact on a number of NERC and notable species, water quality and on water dependent ecosystems in the affected reach. There would also be minor adverse impacts on the aesthetics and landscape of the study area
	Beneficial	None	None	None		None				None	None	None	None	None	None	None	None		None	None	Overall, two major beneficial effects were identified relating to population and human health based on continued supply of drinking water. There would also be a minor beneficial impact from the drought option for adaptation to climate change. The remaining beneficial impacts on material assets and resources would be negligible.
River Lune LCUS abstraction	Adverse							None	None				None		None	None	None	None				Minor adverse effects were identified relating to population and human health due to the impact upon recreation including angling and navigation. The effect on Inter-relationships has also been assessed as minor.
	Beneficial	None	None	None						None	None	None	None	None	None	None	None		None	None	Major beneficial effects were identified relating to population and human health based on continued supply of drinking water. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change.
Rivington Reservoirs – Brinscall Brook	Adverse				None		None	None	None				None		None	None	None	None				Overall moderate adverse effects were identified relating to the impact of riverine flow reduction on biodiversity, flora and fauna, with respect to fish populations, surface water levels and flows and water quality. Minor adverse effects were assessed for fish populations, ecosystem functions and services and fluvial geomorphology. Negligible adverse impacts are anticipated to the spread of INNS, angling, archaeology and landscape and visual amenity. The impact upon inter-relationships has been assessed as moderate.
	Beneficial	None	None			None					None	None	None	None	None	None	None		None			One moderate beneficial effect was identified relating to population and human health based on continued supply of drinking water. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change.
Rivington Reservoirs – White Coppice	Adverse				None		None	None	None				None		None	None	None	None				Overall moderate adverse effects were identified relating to the impact of riverine flow reduction on biodiversity, flora and fauna, with respect to fish populations, surface water levels and flows and water quality. Minor adverse effects were assessed for fish populations, ecosystem functions and services and fluvial geomorphology. Negligible adverse impacts are anticipated to the spread of INNS, angling, archaeology and landscape and visual amenity. The impact upon inter-relationships has been assessed as moderate.
	Beneficial	None	None								None	None	None	None	None	None	None		None			Overall, three minor beneficial effects were identified relating to population and human health based on continued supply of drinking water. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change.

Ullswater	Adverse				None		None		None				None		None			None				Minor adverse effects were identified for Biodiversity, Flora and Fauna, Material Assets and Resource Use, and Air and Climate relating to increased abstraction impacting water levels, as well as the associated rise in energy requirements and resulting greenhouse gas emissions.
	Beneficial	None	None	None		None				None	None		None		None	None	None		None	None		Major beneficial effects are anticipated for Population and Human Health, as well as Air and Climate, through the continued provision of public water supplies. Moderate beneficial impacts are expected on Material Assets, Resource Use, and Water due to maintaining essential public water supplies during drought conditions.
Lake Windermere	Adverse				None		None		None				None		None			None				Minor adverse impacts were identified relating to Biodiversity and Material Assets and Resource Use. The abstraction of water from Windermere will increase energy consumption and, therefore, greenhouse gas emissions, having a minor adverse impact upon Air and Climate. The effect on Inter-relationships has also been assessed as minor.
	Beneficial	None	None	None		None			None	None	None	None	None	None	None	None	None		None	None		The impact of the drought option on population and human health has been assessed as major beneficial based on continued provision of public water supplies. Improved resilience of water supplies to drought is assessed to have a moderate beneficial impact on adaptation to climate change.
Eden Valley boreholes - Bowscar boreholes	Adverse			None			None						None	None				None				Overall minor adverse effects were identified for Biodiversity, Flora and Fauna and Population and Human Health relating to the potential impact of the increase in groundwater drawdown on nearby receptors and third-party groundwater abstractions.
	Beneficial	None	None	None		None		None		None	None		None		None	None	None		None	None		Overall, minor beneficial effects are anticipated for Population and Human Health and Air and Climate based on continued provision of public water supplies and improved adaptation to climate change.
Eden Valley boreholes - Gamblesby boreholes	Adverse						None						None					None				Overall minor adverse effects were identified for Biodiversity, Flora and Fauna relating to the impact of increased groundwater drawdown on nearby receptors and INNS fitness.
	Beneficial	None	None	None		None		None		None	None	None	None	None	None	None	None		None	None		Overall, minor beneficial effects are anticipated for Population and Human Health and Air and Climate based on the continued provision of public water supplies and improved adaptation to climate change.
Eden Valley boreholes - Tarn Wood boreholes	Adverse			None			None						None					None				Overall minor adverse effects were identified for Biodiversity, Flora and Fauna and Population and Human Health relating to the potential impact of the increase in groundwater drawdown on nearby receptors and third-party groundwater abstractions.
	Beneficial	None	None	None		None		None		None	None	None	None	None	None	None	None		None	None		Overall, minor beneficial effects are anticipated for Population and Human Health and Air and Climate based on continued provision of public water supplies and improved adaptation to climate change.

MITIGATION AND MONITORING

Consideration of mitigation measures has been an integral part of the SEA process. The SEA appraisals assess the residual impacts, i.e. those impacts likely to remain after the implementation of reasonable mitigation.

During the implementation of one or more drought options, appropriate monitoring will be undertaken to track any residual environmental effects and to address any gaps or uncertainties in the assessments. Monitoring results may trigger the deployment of further suitable and practicable mitigation measures. Prior to implementation, UU will review the specific requirements for environmental monitoring in consultation with the Environment Agency, Natural England and Natural Resources Wales (as appropriate).

NEXT STEPS

The Draft Drought Plan 2027 and the SEA Environmental Report will be issued for public consultation. Comments received through this consultation will lead to a Revised Draft Drought Plan, and, where appropriate to do so, these changes will be assessed using the approach to SEA set out in this report. The Revised Draft Drought Plan will subsequently be published as the Final Drought Plan, and an SEA Post-Adoption Statement will be produced. When the Drought Plan is implemented during an actual drought event, UU will monitor its effects on the environment, helping to ensure that the potential impacts identified in the SEA are considered in practice.

CONTENTS

1. INTRODUCTION

1.1 BACKGROUND AND PURPOSE OF REPORT

Under sections 39B and 39C of the Water Industry Act 1991 (as amended by the Water Act 2003 and the Water Act 2014), United Utilities (UU) is required to prepare and maintain a statutory Drought Plan (DP) and to review and update it at least every five years. UU published its current statutory Final Drought Plan in August 2022. UU is currently preparing its Draft Drought Plan 2027 (DP27), anticipated to be submitted to the Secretary of State before 31 March 2026, with the Final Drought Plan expected to be published in early 2027 following consultation and approval.

It has been determined through SEA Screening that both a Strategic Environmental Assessment (SEA) and a Habitats Regulations Assessment (HRA) are required for the preparation of the Draft Drought Plan 2027. SEA of plans and programmes is a statutory requirement under the Environmental Assessment of Plans and Programmes Regulations 2004 (the "SEA Regulations"). The objective of SEA is to ensure that environmental considerations are integrated into the preparation and adoption of plans and programmes. In the context of drought planning, SEA assists in identifying, describing and evaluating the likely significant environmental effects of implementing drought options, and in identifying appropriate mitigation measures. More information about SEA and the rationale for applying it to UU's Draft Drought Plan 2027 is provided in **Section 1.2**.

The purpose of the Drought Plan is to set out the operational steps UU would take before, during and after a drought to ensure the continued supply of water while minimising environmental impacts and reducing reliance on drought permits and drought options where reasonably practicable. Further information on UU's water supply system, the drought planning process and its relationship with the WRMP is provided in **Section 1.3**.

This Environmental Report (ER) presents the findings of the SEA for UU's Draft Drought Plan 2027 to inform consultation with statutory consultees and the public, and to support decision-making by Defra.

1.2 APPLICATION OF SEA TO DROUGHT PLANNING

1.2.1 Overview of SEA

SEA is a statutory requirement under the Environmental Assessment of Plans and Programmes Regulations 2004 ('the SEA Regulations'), which requires the assessment of the environmental effects of certain plans and programmes. 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 the preparation of an Environmental Report, in which the likely significant effects on the environment of implementing the plan or programme, as well as reasonable alternatives taking into account the objectives and geographical scope of the plan or programme, are identified, described, and evaluated.

As stated in the Office of the Deputy Prime Minister (ODPM) SEA Guidelines[1]

> *"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 timing and implementation of actions within the plan, provided that this is set within the context of applying SEA to drought planning, as described in **Section 1.2.3** below.

The range of issues to be included in an SEA is outlined in the SEA Regulations. It encompasses biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage, and

[1] Office of the Deputy Prime Minister (2005) A Practical Guide to the Strategic Environmental Assessment Directive. September 2005. Available at: https://assets.publishing.service.gov.uk/media/5a78ec0740f0b62b22cbddd2/practicalguidesea.pdf [Accessed 02 March 2026]

landscape. As such, the full range of environmental and social effects that are likely to arise from the implementation of the UU's Draft Drought Plan 2027 is considered.

SEA Screening undertaken in accordance with Regulation 9 of the Environmental Assessment of Plans and Programmes Regulations 2004 (the "SEA Regulations") confirmed that SEA is required. In addition, the Draft Drought Plan 2027 is subject to Habitats Regulations Assessment (HRA) under the Conservation of Habitats and Species Regulations 2017 (as amended). The HRA of UU's Draft Drought Plan 2027 has been undertaken in parallel with the SEA and is reported separately. The HRA screening process identifies whether each drought option in the Draft Drought Plan 2027 (either alone, in combination with other plans or projects, or in conjunction with other plans or projects) is likely to have significant effects on European sites (as defined under the Habitats Regulations 2017), i.e., sites of international conservation importance. The findings of both the SEA and HRA have informed the revision of the Drought Plan through an iterative process.

Only those drought options relevant to the period covered by the Draft Drought Plan are included for consideration as part of the SEA process. To this end, the environmental effects of the Draft Drought Plan 2027 options will be considered within the context of the current licence operating conditions. Potential new sources (which UU may bring online in the future), new drought options, or revisions to existing options that are only envisaged to become operational after 2032 have, therefore, been excluded from the SEA and HRA assessments.

1.2.2 Requirement for SEA and HRA of UU's Drought Plan

UU has carried out SEA Screening in accordance with the requirement for a SEA identified under the Environmental Assessment of Plans and Programmes Regulations 2004 and the Office of the Deputy Prime Minister (ODPM) SEA Guidelines[1]. The flow diagram presented in Figure 2 of the ODPM Guidelines has been applied to UU's Draft Drought Plan 2027 and is illustrated in Figure 1-1.

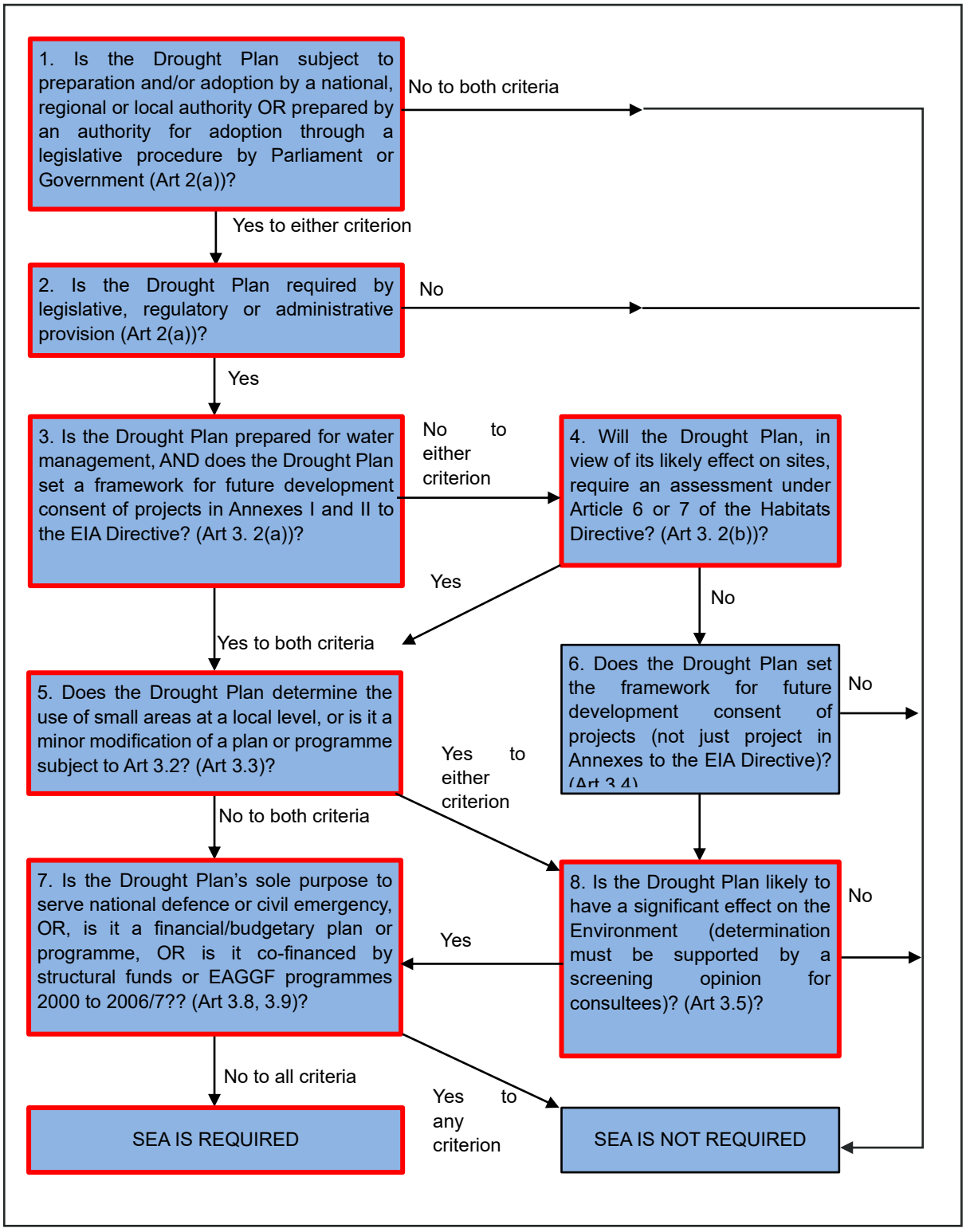


Figure 1-1: SEA Screening Process for UU's Draft Drought Plan 2027 adapted from UKWIR[2] (2021) and ODPM[1] (2005)

The SEA screening assessment summary for UU's Draft Drought Plan 2027 is described below:

[2] UKWIR (2021) Environmental Assessment Guidance for Water Resources Management Plans and Drought Plans (WR/02/S). Prepared by Ricardo Energy & Environment.

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, to first criterion but No to latter criterion.

4. Will the Plan, in view of its likely effect on sites, require an assessment under Article 6 or 7 of the Habitats Directive[3]?

   Yes, there is potential for impacts on a European site which triggers the requirement for Appropriate Assessment under the Habitats Regulations 2017.

5. Does the Plan determine the use of small areas at local level, OR is it a minor modification of a PP subject to Art. 3.2?

   Yes, to latter criterion.

8. Is it likely to have a significant effect on the environment?

   Yes (see response to Step 4).

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 2000 to 2006/7?

   No to all criteria.

Result: Requires SEA.

The HRA of UU's Draft Drought Plan 2027 is being undertaken in parallel with the SEA and is reported separately.

1.2.3 Applying SEA to Drought Planning

Drought Plans encompass several drought options that will only be implemented if and when required. Each drought is different in terms of its severity, season, location and duration, and each combination of these factors may require a bespoke reaction in terms of measures. In the context of drought planning, individual drought options are considered alternatives. UU's Draft Drought Plan 2027 comprises a total of 22 drought options (one supply side option, six demand options and 15 drought permit sites).

A Drought Plan does not comprise a discrete, well-defined programme of options selected from a long list of potential options, in the same way that a Water Resource Management Plan (WRMP) does. Due to the nature of the consenting system for drought actions, it must encompass all measures that the company may need to take progressively as the severity of a drought increases, including those that would only be required in the most severe drought, perhaps once every 100 years or more. These will typically have very significant environmental effects but are extremely unlikely to be required during the Drought Plan's period.

The Drought Plan, therefore, includes a range of possible measures to allow UU to respond to a particular drought in the most appropriate way. It is impossible to predict in advance which and how many of the measures will be required and in which order of priority to respond to each particular drought event (although it is noted that for some resource zones with fewer drought options, it may be easier to predict which measures would be implemented in a drought scenario).

The traditional approach to SEA is, therefore, difficult to apply to Drought Plans. There are no pre-defined programmes of options as such, so the SEA will not be assessing competing measures or recommending the most sustainable selection or programme of measures. It cannot provide a definitive prediction of the overall environmental impact of adopting the plan, as its implementation is uncertain. The outputs of the SEA will provide a comparative assessment of the environmental effects of implementing each drought option, which

[3] Superseded by the Conservation of Habitats and Species Regulations 2017 (as amended).

UU can use to advise on the bespoke measures to be implemented during an actual drought event and inform the preferred order of implementation according to its risk.

While an environmental appraisal of each measure can be outlined in the SEA for the plan, the unpredictability of which measures will be implemented in any particular drought event means that it may be impossible to provide an accurate cumulative assessment of the plan's impacts for a potential future drought event. The approach to cumulative assessment is proposed in **Section 3.4** and includes consideration of intra- and inter-WRZ effects, as well as cumulative effects with neighbouring water companies' Drought Plans.

The Government has produced SEA guidance[1], which sets out the stages of the SEA process. In addition, guidance for undertaking SEA of Drought Plans has been produced on behalf of United Kingdom Water Industry Research (UKWIR)[1]. These documents provide recommended best practice guidance for the preparation of SEAs for drought plans and have been used to inform the methodology for this SEA.

This SEA also aligns with the Environment Agency's 2025 Drought Plan Guideline (DPG)[4], particularly the environmental assessment supplementary guidance[5].

1.3 UU'S WATER SUPPLY SYSTEM, WATER RESOURCE MANAGEMENT AND DROUGHT PLANNING

1.3.1 Introduction

UU supplies water to over eight million people and 150,000 non-household customers across an area of approximately 13,800 km^2 in the North West of England, including Cumbria, Lancashire, Greater Manchester, Merseyside, most of Cheshire and a small portion of Derbyshire.

UU owns and operates over 100 water supply reservoirs, various river and stream intakes, as well as lake abstractions, and numerous groundwater sources (boreholes, springs, mine and adit sources). Abstracted water is treated at water treatment works before being supplied to customers through an extensive network of aqueducts and water mains.

Water supplies to the majority of the region (with more than 90% of total water supplied) are managed in an integrated manner and constitute a single resource zone. The UU region is split into four WRZs, with limited connectivity between them:

Strategic Resource Zone: A regional network serving west Cumbria, south Cumbria, Lancashire, Greater Manchester, Merseyside, most of Cheshire, Workington, Whitehaven, Wigton and Solway, representing over 90% of total water supplied by UU. A bi-directional pipe, the West-East link main, was commissioned in 2011 to allow water to be transferred between the west and east of the resource zone. This link allows UU more flexibility to move water around the region to where it is most needed

Carlisle Resource Zone: The Carlisle Resource Zone serves the residents of the Carlisle area. This is a surface water only zone.

North Eden Resource Zone: The North Eden Resource Zone comprises boreholes that serve the rural, northern part of the Eden district of Cumbria. A bulk water supply from Northumbrian Water supplies the Alston area.

Barepot Resource Zone: This is a non-potable industrial supply and is a surface water source.

The current boundaries and characteristics of UU's WRZs are shown in **Figure 1-2**.

[4] Environment Agency (2025) Water Company Drought Plan Guideline, March 2025 (Version 1.4)

[5] Environment Agency (2025) Environmental assessment for water company drought planning, March 2025 (Version 1.0)

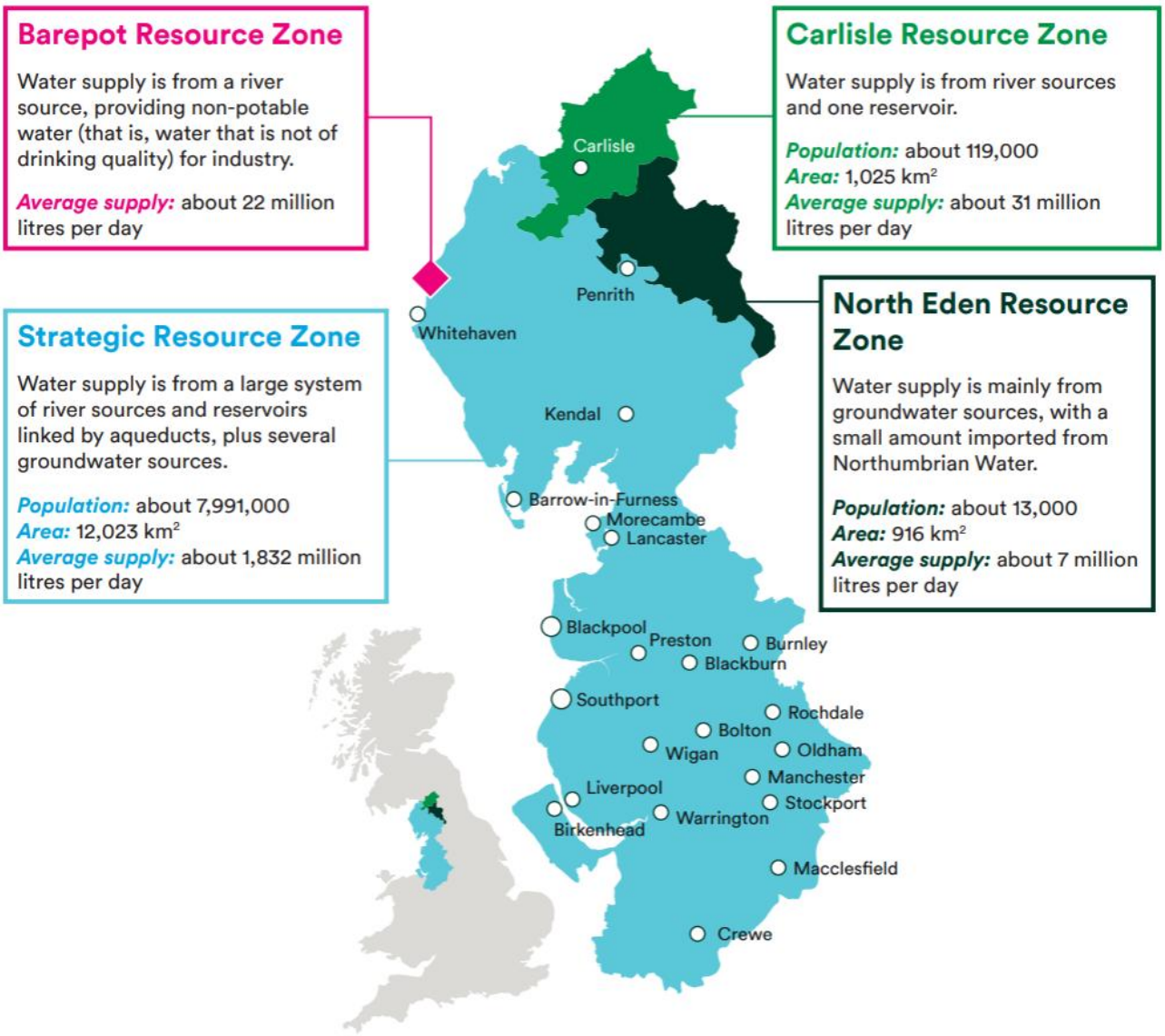


Figure 1-2: UU WRZs[6]

1.3.2 Link to Water Resources Management Plan

UU published its latest Water Resources Management Plan (WRMP) in 2024, which provides a comprehensive statement of UU's water supply and water demand forecasts over the period 2025 to 2085. It also describes the resulting supply-demand balances and the actions UU propose to take as part of the preferred strategy to achieve water supply reliability standards for their customers. The WRMP is updated every 5 years.

The WRMP determines whether a deficit in future water supply availability is expected compared to demand over a 25-year horizon and identifies preferred solutions to address forecast deficits, thereby maintaining a balance between supply and demand. The assessment takes climate change into account, as well as any changes to abstraction licences (e.g. the Environment Agency's review of abstraction licences under Regulation 63 of the Habitats Regulations, previously referred to as the Review of Consents). The WRMP also allows for parts of the water supply system to be out of service for maintenance. The baseline supply-demand balance assessments of the plan demonstrated that a surplus will be maintained in the Carlisle, North Eden, and Barepot resource zones. Without intervention, the Strategic Resource Zone would likely face a deficit

[6] United Utilities (2024) Final Water Resources Management Plan (2024), Main Report. December 2025. Available at: https://www.unitedutilities.com/corporate/about-us/our-future-plans/water-resources/water-resources-management-plan/ [Accessed 02 March 2025]

starting from 2025, resulting in insufficient supplies to meet demand. With intervention via reducing water demand and implementing a proposed programme of leakage reduction activities, the Strategic Resource Zone will be in surplus. In the longer term the WRMP supports regional and national water resource needs through water transfers.

The Drought Plan is an operational plan setting out UU's approach to managing water supplies and the actions UU would consider taking during a drought. Leakage control is a key priority for both the WRMP and the Drought Plan. Leakage detection and repair activities will be enhanced during periods of severe water shortages, as outlined in the Drought Plan. The predicted future baseline for leakage control is outlined in the WRMP. The supply-demand appraisal demonstrates that reducing leakage is an efficient and integral part of UU's water resources and demand strategy.

To clarify, this SEA Environmental Report focuses on the Drought Plan, not the WRMP. UU's drought planning process is discussed further in **Section 1.4** below.

1.4 UU'S DROUGHT PLANNING PROCESS AND DROUGHT OPTIONS

1.4.1 Overview and timetable of drought planning process

1.4.1.1 *Legislation*

Water companies in England and Wales are required to prepare and maintain Statutory Drought Plans under Sections 39B and 39C of the Water Industry Act 1991, as amended by the Water Act 2003 and, subsequently, the Water Act 2014, which set out the sort of operational steps a company will take before, during and after a drought. The Water Industry Act 1991 defines a Drought Plan 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 permits*'.

Statutory demand management options available to water companies during drought have been extended through provisions in the Flood and Water Management Act 2010. Section 36 of this Act has amended the provisions of the Water Industry Act 1991 relating to hosepipe bans, allowing companies to temporarily restrict specified non-essential uses of water under a Temporary Use Ban (TUB), in accordance with Section 76 of the Water Industry Act 1991 (as amended), without the need to apply for a drought order. The Drought Plan (England) Direction 2025, issued under Section 39B of the Water Industry Act 1991, sets out the procedural requirements and timetable for the preparation, consultation and publication of drought plans in England. The 2025 Direction revoked and replaced the Drought Plan (England) Direction 2020.

1.4.1.2 *Drought Plan Timeframes*

UU prepared a Draft DP in March 2021, which was published for consultation in May 2021. A Statement of Response (SoR) was prepared and published alongside the Revised Draft DP in August 2021, incorporating changes in response to the consultation. However, this was not materially different from the Draft DP, and following approval from the Secretary of State, the Final DP 2022 was subsequently published, encompassing the period from 2022 to 2027.

In accordance with current legislation, UU will revise and republish the DP no later than five years after the date the final DP is published or earlier if required through new legislation or a material change to the plan.

UU is now preparing "Draft DP 2027", which will encompass the period 2027-2032 and is anticipated to be submitted to Defra in March 2026, followed by the publication of the Final DP in 2027.

1.4.1.3 *Review of Consents and HRA*

In order to ensure that the integrity of the Habitat(s) site is not at risk from the impacts of abstraction, permissions to abstract water, granted through licences issued by the Environment Agency and held and operated by UU, have been subject to a 'Review of Consents' in accordance with Regulation 63 of the Habitats Regulations. This Review of Consents was undertaken by the Environment Agency and includes screening to determine any likely significant effects and the need for Appropriate Assessment to either affirm an abstraction licence or recommend action to amend the licence conditions. This is to ensure that the impacts of abstraction do not compromise the integrity of the European site. The conclusion of the HRA Screening and the SEA for

each drought option should be reviewed at the time of any future application for drought powers to ensure they remain valid.

Only those drought options relevant to the period covered by the Drought Plan will be included for consideration as part of the SEA and HRA process. To this end, the environmental effects of the Drought Plan 2027 options will be considered within the context of the current licence operating conditions. Potential new sources (which UU may bring online in the future), new drought options, or revisions to existing options that are only envisaged to become operational after 2032 have, therefore, been excluded from the HRA and SEA option assessments.

1.4.2 UU's Drought Options

For the Drought Plan 2027, UU has identified triggers that act as decision points for implementing drought management actions and options. These are referred to as drought levels (Levels 1, 2, 3, and 4) in accordance with the 2025 DPG[4]. Drought levels vary for each WRZ, and the nature of the drought management actions associated with each drought level varies depending on the prevailing situation. The draft Drought Plan 2027 and its supporting environmental assessments consider only Level 1–3 drought management options. Level 4 measures, such as the use of emergency restrictions (e.g. standpipes and rota cuts) are not included within the Drought Plan, as these relate to extreme drought conditions and are instead addressed through a separate emergency Drought Plan

Drought actions may be applied either company-wide, by WRZ, or to target a specific geographic area, depending on the nature of the prevailing drought event at that time. The Draft Drought Plan 2027 outlines a range of potential drought management options available to UU, including bringing contingency water sources into use, implementing drought permits, and implementing water use restrictions.

There are three overall categories of drought options, which are described below:

- Utilisation of existing licensed water sources within UU's resource base (referred to as supply side options)
- Demand side options (e.g. water use restrictions)
- Drought permits or orders (i.e. modification to the conditions of an existing abstraction licence).

The locations of all drought options within the UU supply area are outlined on **Figure 1-3**.

Supply Side Options

All supply side options are actions within existing licensed abstraction limits which have been subject to the Environment Agency's Review of Consents process.

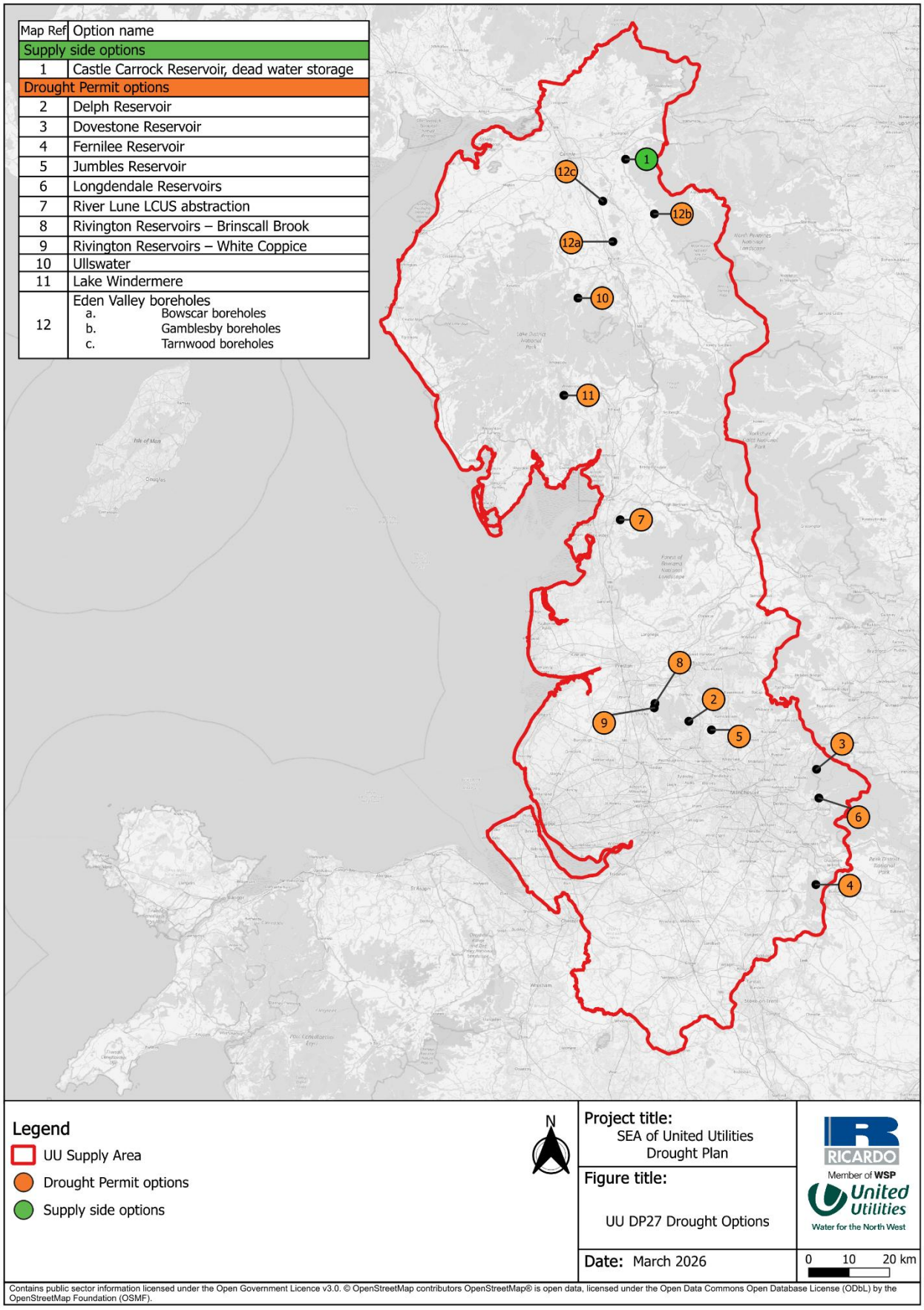
There is one supply side drought option included in UU's Drought Plan 2027, which is consistent with the previous DP 2022 (**Table 1-1**). Several previous non-commissioned sources listed as supply side options in previous drought plans have since been recommissioned and brought online (e.g. as part of the 2018 dry weather event) and are now considered 'business as usual' sources. Additionally, a review of the remaining non-commissioned sources was conducted during the preparation of DP 2022 to assess their availability and potential benefits. It was determined that ten boreholes would, therefore, be removed from the Drought Plan (DP). These sources are now part of the normal operating suite of sources. By bringing the non-commissioned sources into regular use, utilisation of such sources will assist in taking demand off the regional or local water supply system, making it more resilient overall compared to the previous suite of supply options.

Table 1-1: Supply side drought options included in the SEA and HRA

WRZ	Licence
Strategic Resource Zone	None
Carlisle Resource Zone	Castle Carrock Reservoir, dead water storage
North Eden Resource Zone	None
Barepot Resource Zone	None

It should be noted that consideration of potential cumulative impacts between existing licensed abstractions (i.e., sources not included within the Drought Plan), supply side options and drought permit options on European sites will be included in the HRA screening assessment.

Figure 1-3 UU Water Supply Area and Drought Option Locations



Demand Side Options

Demand side options are designed to reduce water demand, and the options available to UU are consistent across all resource zones (see **Table 1-2**). Demand side options have been included in both the SEA and HRA screening.

Table 1-2: Demand side options (all WRZs)

Measure	Summary
Enhanced leak detection and repair	Company operational measure to accelerate finding and fixing leaks on the network, which is not legally enforceable.
Pressure reduction	Company operational measure to lower pressure in the network to reduce leakage and bursts, managing flow to conserve water. It is not legally enforceable. This would be implemented in a phased approach at different drought levels.
Campaign for voluntary water use restraint	Company operational measure that encourages customers to reduce discretionary water use voluntarily (not legally enforceable). It focuses on public messaging (e.g. avoid hosepipes, shorter showers, delay car washing). It covers domestic and business users but relies entirely on cooperation. It is used in the early stages of drought, to encourage savings before legal restrictions
Pressure reduction phase 2	Company operational measure to lower pressure in the network to reduce leakage and bursts, managing flow to conserve water. It is not legally enforceable.
Temporary Use Ban (TUB)	Statutory restriction on domestic customers under Water Industry Act (WIA) (1991), section 76, as amended by Section 36 of the Flood and Water Management Act (FWMA) (2010). It prohibits specified non-essential uses, once notice is given to customers. To implement a TUB UU must be satisfied that they are "experiencing, or may experience, a serious shortage of water for distribution" and that voluntary water use restraints have not brought demand down sufficiently. In these circumstances UU will consider implementing a TUB within drought level 2 during the summer (April to September), to reduce external household demand. The UU approach to applying a TUB may be at the Water Resource Zone (WRZ) level or on a more local basis, depending on the circumstances and operational requirements at the time and with the aim of introducing restrictions only where it is absolutely necessary.
Drought order to ban non-essential use (NEUB)	Statutory power under Water Resources Act (1991) and sections 73-81 and schedule 8 that extends restrictions to non-essential/commercial/industrial uses and can amend abstraction/discharge conditions (as set out in the Drought Direction 2011)

Demand measures are just part of a suite of options which will be put in place by UU as part of its Drought Plan, alongside supply side options and drought permits.

Drought Permit Options

Drought permits and orders are drought management actions that, if granted, can provide more flexibility in managing water resources and mitigating the effects of drought on public water supplies and the environment. The Environment Agency has prepared guidance in collaboration with Defra[7]: which highlights the main differences between drought permits and orders. One of the key differences is that the Environment Agency grants drought permits, whereas drought orders are issued by the Secretary of State or the Welsh Ministers, as applicable.

Drought permit sites included in UU's Draft Drought Plan 2027 are identified in **Table 1-3**. These options were considered in both the SEA scoping and HRA screening processes.

[7] Environment Agency and Defra (2025) Drought permits and drought orders supplementary guidance. March 2025.

Table 1-3: Drought permit/order options (all WRZs)

Water Source	Potential Drought Permits
Strategic Resource Zone	
Delph Reservoir	Reduce compensation flow from 3.7 to 1.0 Ml/d
Dovestone Reservoir	Reduce compensation flow from 15.9 to 10.0 or 5.0 Ml/d
Fernilee Reservoir	Reduce compensation flow from 13.63 Ml/d to 6.8 Ml/d
Jumbles Reservoir	Reduce compensation flow from 19.9 to 12.0 or 6.0 Ml/d
Longdendale Reservoirs	Reduce compensation flow from 45.5 to 22.5 or 15.0 Ml/d
River Lune LCUS abstraction	Reduce prescribed flow from 365.0 to a minimum of 200 Ml/d
Rivington Reservoirs – Brinscall Brook	Reduce compensation flow from 3.9 to 2.0 Ml/d
Rivington Reservoirs – White Coppice	Reduce compensation flow from 4.9 to 2.0 Ml/d
Ullswater	Reduce hands-off flow conditions to a minimum of 175 Ml/d Relax 12-month rolling abstraction licence limit
Lake Windermere	Reduce hands-off flow conditions to a minimum of 95 Ml/d Relax 12-month rolling abstraction licence limit
Carlisle Resource Zone	
None	
North Eden Resource Zone	
North Eden boreholes - Bowscar boreholes	Increase annual licence limit to enable continuation of the maximum daily abstraction rate as annual limit constrains abstraction
North Eden boreholes - Gamblesby boreholes	Increase annual licence limit to enable continuation of the maximum daily abstraction rate as annual limit constrains abstraction
North Eden boreholes - Tarn Wood boreholes	Increase annual licence limit to enable continuation of the maximum daily abstraction rate as annual limit constrains abstraction
Barepot Resource Zone	
None	

In June 2019, the Environment Agency issued a position statement to water companies, outlining their roles and responsibilities regarding compensation-only reservoirs (CORs). A COR is a reservoir that has no links (direct or indirect) to a water company's public water supply network. The main or sole function of a COR is to provide compensation flow to the downstream watercourse. The legal requirement to provide a compensation flow from a COR is usually found in an abstraction licence, impoundment licence or an Act of Parliament. A COR would not be listed as a source of supply in a water company water resource management plan or as an option to provide public water supply in a water company drought plan.

Previously, the Environment Agency had included drought orders for CORs within their DP and had been responsible for preparing environmental assessment reports (EARs) and applications for drought orders. The revised position stated in June 2019 requires water companies to produce an upfront EAR for drought order implementation at CORs, including an Environmental Monitoring Plan and mitigation proposals. Not all COR sites need to be considered for a future drought order (e.g., not all public water supply reservoirs have associated drought permits) if they are resilient (e.g., the compensation flow is small compared to the storage). Hence, not all sites will need a shelf-copy EAR. UU and the EA have been working together to refine and agree on the list of CORs in UU's operating area, where the risk of a drought order warrants the production of a shelf copy EAR. Two environmental assessment reports for CORs are currently being prepared (Belmont and Black Moss).

There is no public water supply benefit of a drought order at a COR. However, reference to CORs with associated drought orders may be made in UU's drought plan. UU would not be the party applying for a drought order for a COR, and therefore, the SEA and HRA assessments will not include these. Drought orders would, however, be considered in the in-combination / cumulative assessments.

1.4.3 Defining the list of Drought Options and Alternatives

In the context of drought planning, individual options are taken to constitute reasonable alternatives.

It should be noted that the revision of the Drought Plan options has been undertaken in parallel with the preparation of the SEA and HRA, and the results of these latter two assessments have informed the revision of the Drought Plan through an iterative process.

The list of drought options and the assessments provided in this document will be revised to reflect any changes between the Draft and Final Drought Plans.

1.4.4 Supporting Information

Drought options included in the SEA and HRA will be documented by UU in its Drought Plan 2027 and presented in drought management option forms as specified by Drought Plan Guidline[4], specifically the March 2025 'Environmental Assessment for Water Company Drought Plans' supplementary guidance[5]. Information provided in these forms will be used to inform the SEA.

Drought options may have different environmental effects depending on the season of implementation (for example, a summer drought *vs.* a winter drought). As drought measures can theoretically be required and implemented at any time of year, overall impacts are assessed on a worst-case basis.

Detailed environmental assessment studies have been conducted for all of UU's drought permit/drought order sites, and the information from these studies has been used to inform the SEA and HRA Screening (see **Sections 1.5** and **3.3**).

1.5 DROUGHT PERMIT/ORDER ENVIRONMENTAL STUDIES

EARs have been prepared for the drought permit/order sites identified in **Table 1-3** as part of UU's drought contingency planning.

EARs are designed to be updated in response to the prevailing drought situation at the time. The Environment Agency and Natural England were key consultees for the studies. The environmental assessment encompasses potentially affected habitats and species, including, but not limited to, Special Areas of Conservation (SACs), Special Protection Area (SPAs), and Ramsar sites, as well as any Special Site of Scientific Interest (SSSIs) or priority habitats and species. The reports also include Environmental Monitoring Plan (EMP) recommendations for each drought permit site. These environmental assessments are intended to serve as the basis for the Environmental Report, which will support a specific drought permit or order application, should the need arise.

UU has updated the environmental assessments at all drought permit/drought order sites as part of the preparation for the 2027 Drought Plan (see **Table 1-3**). Environmental Reports, with date of completion, are listed in **Table 1-4**. The updated EARs reflect the most recent available baseline data and have been prepared in accordance with the latest applicable guidance.

Table 1-4: Drought Permit Sites Environmental Assessments

Drought Permit Site	Date Completed
Strategic Resource Zone	
Delph Reservoir	January 2026
Dovestone Reservoir	December 2025
Fernilee Reservoir	March 2026
Jumbles Reservoir	December 2025

Longdendale Reservoirs	March 2026
River Lune LCUS abstraction	2021, updated EAR in preparation for completion spring 2026
Rivington Reservoirs – Brinscall Brook	March 2026
Rivington Reservoirs – White Coppice	March 2026
Ullswater	November 2025
Lake Windermere	2021, updated EAR in preparation for completion spring 2026
Carlisle Resource Zone	
None	-
North Eden Resource Zone	
Eden Valley Boreholes	April 2025

Information from the detailed environmental assessments has been used to inform the SEA and HRA. The methodology for the SEA is described in further detail in **Section 3**.

1.6 STAGES OF SEA PROCESS

The requirement for SEA was confirmed during SEA screening (see **Section 1.2.2**).

Table 1-5 is an extract from the Government's SEA guidance[1] that sets out the main stages of the SEA process and the purpose of each task within the process.

Stage A: *Setting the context and objectives, establishing the baseline and deciding on the scope* has been completed by UU. A Scoping Report was issued to consultees from the environmental regulators (Environment Agency, Natural England, Natural Resources Wales, Historic England, and Cadw) on 6 January 2025 (see **Section 1.8** below), which provided an opportunity for them to provide views on the proposed scope and level of detail of the Environmental Report.

This Environmental Report represents work carried out in **Stages B** and **C** of the SEA process.

Specific guidance on the application of the SEA process to Drought Plans is provided in a best-practice publication by UKWIR[8].

Table 1-5: SEA stages and tasks

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, predict effects, and monitor to inform the development of SEA objectives.
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.

[8] UKWIR (2021) Strategic Environmental Assessment and Habitats Regulations Assessment of Drought Plans (UKWIR Project WR/02/S). Prepared by Ricardo Energy and Environment.

SEA Stages and Tasks	Purpose
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.

1.7 STRUCTURE OF THE ENVIRONMENTAL REPORT

This Section (**Section 1**) describes the overall purpose and process of the SEA, as well as the background to UU's water supply system and drought planning process. The remainder of the report is structured as follows:

Section 2 – Baseline and Context, presents the baseline information that sets the context for the assessment. Information on the current state of the environment within UU's water supply area is provided, along with a review of other policies, plans, and programmes that will influence the Drought Plan.

Section 3 – Methodology, provides details of the methods employed in assessing cumulative effects.

Section 4 – Assessment of Drought Options, presents the potential impacts of the various DP options against the SEA framework.

Section 5 – Cumulative Effects Assessment, discusses the potential in-combination impacts of drought options (intra-zone and inter-zone), demand management options and other plans and projects in the region.

Section 6 – Mitigation and Monitoring - discusses measures envisaged to prevent, reduce, and offset any significant adverse effects of implementing the Drought Plan. Monitoring is also included to track the environmental effects and determine whether they are as predicted, to help identify any adverse impacts, and to trigger the deployment of mitigation measures.

Section 7 – Summary.

1.8 CONSULTATION PROCESS

1.8.1 Overview

Two opportunities are available for consultation bodies to be formally involved during the SEA process: during the scoping process and at the environmental reporting stage. These are discussed below.

UU set up a Project Steering Group (PSG) to include key consultees and parties involved in the SEA and HRA process, including the Environment Agency, Natural England and Natural Resources Wales. This forum encouraged regulators to voice any concerns in a timely manner outside the formal consultation process, which, as documented below, was also undertaken in parallel, according to statutory requirements.

1.8.2 Consultation on the Scoping Report

Consultation bodies were invited to express their views on the Scoping Report, and the scope of the SEA proposed in accordance with SEA Regulation 12(5).

The Scoping Report was issued on 6 January 2025 to the Environment Agency, Natural Resources Wales, Historic England, Natural England, Welsh Government and Cadw. The consultation period ran from 6 January 2025 to 10 February 2025. The Statutory consultees were invited to comment on the report and the proposed scope of the SEA. A meeting with the statutory consultees was held on 28 January 2025 to discuss the proposed approach. A summary of the issues raised and responses to comments are presented in **Appendix B**.

1.8.3 Consultation on the Environmental Report

This Environmental Report has been produced in accordance with the approach agreed by UU and taking into consideration the responses received from consultation bodies in response to the Scoping consultation. SEA reporting provides assessments of the likely significant effects of the drought options considered and selected by UU. This information is set out in this Environmental Report and will be publicly consulted upon alongside UU's Draft Drought Plan 2027.

2. BASELINE AND CONTEXT

2.1 INTRODUCTION

In accordance with the SEA Regulations, a review of relevant policies, plans and programmes is presented in **Section 2.2**. Baseline environmental information is presented in **Section 2.3**. A summary of key issues has been prepared and is presented in **Section 2.4**.

2.2 REVIEW OF POLICIES, PLANS AND PROGRAMMES

One of the first steps in undertaking SEA is to identify other relevant policies, plans, programmes and environmental protection objectives. The review of these other plans aims to establish how UU's Drought Plan might be affected by other plans, to identify other environmental protection objectives that the Drought Plan should consider, and to help identify the objectives for the SEA.

The plans and programmes were identified from the wide range that have been produced at the international, national, regional, and local levels. The following criteria were used to help ensure that the review focuses on the plans and programmes most relevant to this SEA:

- Relevance to the Drought Plan – Plans or programmes were excluded if they did not have a significant effect on achieving the objectives of the Drought Plan or if the Drought Plan did not significantly influence the objectives of the other plan or programme.
- Relevance to UU - Plans focused on the North West region, broadly aligning with UU's operational area, and those reflecting national and international priorities, were considered most relevant.

The international, national, regional, and local policies, plans, programmes, and strategies reviewed are listed in **Table 2-1** along with the key policy messages for each SEA topic. **T**he full review findings are provided in **Appendix C**. The information from this review has been used to direct the presentation of baseline information on the current environmental and social characteristics of UU's water supply area (**Section 2.3**) and to develop proposed objectives for the SEA (**Section 3.1**).

Table 2-1: Key policy messages from the review of relevant policies, plans and programmes

SEA Topic	Key Messages	Policies
Biodiversity, flora and fauna	Conservation and enhancement of the natural environment and biodiversity, principally designated sites (international and national) and priority habitats and species, whilst considering climate change and ability to adapt. Encourage a catchment-wide approach to water use to safeguard protection of the natural environment and biodiversity. To attain favourable conditions for priority habitats and species. 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 works, including provision for fish passage and connectivity for migratory/mobile species. Reinforce the connections between people and nature and appreciate the value of biodiversity. Protection and enhancement of natural capital. Ecosystem services from natural capital contribute to the economy and, therefore, should be protected and, where possible, enhanced. A need to protect the green infrastructure network. To seek opportunities for biodiversity net gain and promote ecosystem resilience from infrastructure development. Avoidance of activities likely to increase the risk of spread of Invasive Non-Native Species (INNS).	**International:** Convention on Biological Diversity (2022) Kunming-Montreal Global Biodiversity Framework (GBF) Council of Europe (1979) The Convention on the Conservation of European Wildlife and Natural Habitats (The Bern Convention) Council of Europe (1979) The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) European Commission, Birds Directive (2009/147/EC) Ramsar Convention (1971), The Convention on Wetlands of International Importance United Nations, Convention on Biological Diversity (CBD) (1992) **National:** Centre for Environment Fisheries and Aquaculture Science, Environment Agency and Natural Resources Wales (2023) Salmon Stocks and Fisheries in England and Wales 2023 Defra (2023) The Great Britain Invasive Non-Native Species Strategy: 2023 to 2030 Defra (2025) Environmental Improvement Plan 2025 Defra (2026) A new vision for water: white paper Defra (2026) Enabling a Natural Capital Approach guidance Environment Agency (undated) Hydroecology: Integration for modern regulation Environment Agency (undated) WFD River Basin Characterisation Project Environment Agency (2025) Managing water abstraction HM Government (1975) Salmon and Freshwater Fisheries Act 1975 HM Government (1981) Wildlife and Countryside Act 1981 HM Government (1990) Environmental Protection Act HM Government (2000) Countryside and Rights of Way (CROW) Act 2000 HM Government (2006) Natural Environment and Rural Communities Act 2006

SEA Topic	Key Messages	Policies
		HM Government (2009) The Aquatic Animal Health (England and Wales) Regulations 2009 HM Government (2009) The Eel (England and Wales) Regulations 2009 HM Government (2009) Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009 HM Government (2010) The Marine Strategy Regulations 2010 HM Government (2011) UK Marine Policy Statement HM Government (2017) The Conservation of Habitats and Species Regulations 2017 HM Government (2017) The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 HM Government (2019) the Invasive Alien species (Enforcement and Permitting) Order 2019 HM Government (2021) Environment Act 2021 JNCC (2024) UK Biodiversity Framework 2024 MHCLG (2018) National Planning Policy Framework 2018 National Assembly for Wales (2016) Environment (Wales) Act 2016 Natural England and the Environment Agency (2014) Protected Species and Development: Advice for Local Planning Authorities (last updated 2025) Natural England (2015) Conservation objectives for land-based protected sites in England: how to use the site advice Natural England (2025) Natural England's Strategy: Recovering Nature for Growth, Health and Security Natural Resources Wales - Our corporate plan to 2030: nature and people thriving together UKTAG on the WFD e.g. Phase 3 Review of Environmental Standards Welsh Government (2020) Future Wales: The National Plan 2040 Welsh Government (2023) Public Health Wales Climate Change in Wales: Health Impact Assessment Natural Resources Wales (2025) State of Natural Resources Report for Wales 2025 (SoNaRR2025)

SEA Topic	Key Messages	Policies
		Regional/Local: Canal & Rivers Trust (2015) North West Waterway Fisheries & Angling Action Plan Environment Agency (2020) North West Operational Drought Plan Environment Agency and Natural Resources Wales (various) Salmon Action Plans Environment Agency (2013) Abstraction Licensing Strategies (CAMS process) Environment Agency (2022) River Basin Management Plans: updated 2022 (various): Environment Agency (2025) North West Drought Plan Greater Manchester Combined Authority (2025) Together we are Greater Manchester: Greater Manchester Strategy 2025-2035 Greater Manchester Combined Authority (2024) Places for Everyone Joint Development Plan Lake District National Park Authority (2024) Biodiversity Supplementary Planning Document, Draft for consultation Local Nature Recovery Strategies (various) Local Wildlife Trust Strategies (various) Natural England, Site Improvement Plans (SIPs) for Natura 2000 Sites (various) Natural England Natural England National Character Area (NCA) Profiles National Landscapes (formerly Areas of Outstanding Natural Beauty) Management Plans (various) Nutrient Neutrality North West Partnership Project River Restoration and Water Level Management Plans National Park Management Plans (various) Water Company (various) Drought Plans 2022 Water Company (various) Water Resources Management Plans 2024 Water Company (various) Drainage and Wastewater management plans 2023 Water Resources West (2025) Final Regional Plan Water Resources West (2023) Statement of Response

SEA Topic	Key Messages	Policies
Population and human health	To ensure secure, safe, reliable, dependable, sustainable and affordable supplies of water are provided for all communities and all business sectors. Raise awareness around sustainability, the value of water and using it efficiently. Promotion of healthy communities and protection from risks to health and wellbeing. Protection and improvement of drinking water quality. Water resources play an important health and recreation role. Effective water resource management can create opportunities for regeneration, tourism and the wider economy. 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. To ensure all communities have a clean, safe and attractive environment in which people can take pride whilst benefiting the economy. Promotion of a sustainable economy supported by universal access to essential utility and infrastructure services. Social and economic consequences of severe droughts.	**International:** European Commission (2024). Council Directive 1999/31/EC on the landfill of waste (consolidated version as of 4 August 2024). United Nations Economic Commission for Europe (1998), Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (The Aarhus Convention) United Nations (2002) The World Summit on Sustainable Development. United Nations (2015) The 2030 Agenda for Sustainable Development World Commission on Environment and Development (1987) Our Common Future (The Brundtland Report) World Health Organisation (2025) A healthy start for a healthy life: a strategy for child and adolescent health and well-being in the WHO European Region 2026–2030 **National:** Defra (2013) What nature can do for you Defra (2015) The government's response to the Natural Capital Committee's third State of Natural Capital report Defra, Environment Agency, Natural England, Forestry Commission England (2016) Creating a great place for living Defra (2011) The Natural Choice: Securing the Value of Nature Defra (2026) A new vision for water: white paper Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local (2023) National Planning Policy Framework Environment Agency (2025) National Framework for Water Resources 2025: water for growth, nature and a resilient future HM Government (1990) Environmental Protection Act HM Government (2006) The Environmental Noise (England) Regulations 2006 HM Government (2010) The Air Quality Standards Regulations 2010 HM Government (2011) Localism Act 2011

SEA Topic	Key Messages	Policies
		HM Government (2015) The Environmental Damage (Prevention and Remediation) (England) Regulations 2015 HM Government (2016) Environmental Permitting (England and Wales) Regulations 2016 (as amended 2018) HM Government (2016) The Water Supply (Water Quality) Regulations 2016 HM Government (2017) The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 HM Government (2021) Environment Act 2021 National Assembly for Wales (2015) Well-being of Future Generations Act (2015) National Assembly for Wales (2016) Environment (Wales) Act 2016 National Infrastructure Commission (2018) Preparing for a Drier Future, England's Water Infrastructure Needs Natural Resources Wales - Our corporate plan to 2030: nature and people thriving together Well-being and Future Generations (Wales) Act 2015 Welsh Government (2015) Water Strategy for Wales Welsh Government (2020) Future Wales: The National Plan 2040 Welsh Government (2021) Planning Policy Wales (Edition 11) Welsh Government (2022) National Indicators and National Milestones for Wales Welsh Government (2023) Public Health Wales Climate Change in Wales: Health Impact Assessment **Regional/Local:** Cheshire and Warrington Combined Authority Shadow Board (2025) Sustainable and Inclusive Economic Strategy 2025–2045. Cheshire and Warrington LEP. Environment Agency (2022) Flood Risk Management Plans (various): Greater Manchester Combined Authority (2025) Together we are Greater Manchester: Greater Manchester Strategy 2025-2035 Greater Manchester Combined Authority (2024) Places for Everyone Joint Development Plan

SEA Topic	Key Messages	Policies
		Lake District National Park Authority (2021) Local Plan 2020-2035 Liverpool City Region Combined Authority Plan for Prosperity Local Planning Authority (various) Local Plans/Local Development Plans National Park Management Plans (various) Public Rights of Way Improvement Plans (ROWIPs) Transport for the North (2019) Strategic Transport Plan West Lancashire Partnership World Heritage Site Management Plans (various) Water Company (various) Drought Plans 2022 Water Company (various) Water Resources Management Plans 2024 Water Resources West (2025) Final Regional Plan Water Company (various) Drainage and Wastewater management plans 2023
Material assets and resource use	Reduce the amount of waste generated through more efficient use of materials, energy and water, thereby promoting sustainable production and consumption. Contribute to a resource-efficient, green and competitive low-carbon economy. Ensure sustainable use of water resources and maintain a reliable public water supply whilst considering issues of water demand, water supply and water quality in the natural environment. Government expectation for water companies to continue reducing overall demand for water, particularly in areas designated as water-stressed or where demand is above the national average. 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.	**International:** European Commission (2024). Council Directive 1999/31/EC on the landfill of waste (consolidated version as of 4 August 2024). United Nations (2002) The World Summit on Sustainable Development. United Nations (2015) The 2030 Agenda for Sustainable Development **National:** Canal and River Trust (2015) Water Resources Strategy 2015 – 2020 DESNZ and BEIS (2020) Energy white paper: Powering our net zero future DESNZ and BEIS (2021) Heat and Buildings Strategy DESNZ and BEIS (2021) Net Zero Strategy: Build Back Greener Defra (2011) Government Review of Waste Policy in England 2011 Defra (2012) National Policy Statement for Waste Water Defra (2020) Water abstraction plan: Environment Defra (2021) Waste Management Plan for England Defra (2025) Environmental Improvement Plan 2025

SEA Topic	Key Messages	Policies
		Defra and the Environment Agency (2018) Resources and Waste Strategy for England for England Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government) (2014) National Planning Policy for Waste Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2015) Renewable and Low Carbon Energy HM Government (2016) National Infrastructure Delivery Plan 2016-2021 HM Treasury (2015) Fixing the Foundations: creating a more prosperous nation. HM Treasury Infrastructure UK (2014) National Infrastructure Plan HM Government (1994) Urban Waste Water Treatment (England and Wales) Regulations 1994 HM Government (2009) The UK Renewable Energy Strategy HM Government (2017, updated 2019) UK Clean Growth Strategy: Leading the way to a low carbon future HM Government (2020) Energy White Paper: Powering our Net Zero Future HM Government (2021) Environment Act 2021 Defra (2008) Future Water: the Government's water strategy for England Environment Agency (2009) Water Resources Strategy for England and Wales Environment Agency (2010) Water Resources Action Plan for England and Wales JNCC (2024) UK Biodiversity Framework 2024 National Assembly for Wales (2016) Environment (Wales) Act 2016 Natural Resources Wales (2025) State of Natural Resources Report for Wales 2025 (SoNaRR2025) Welsh Government (2012) Energy Wales: A Low Carbon Transition Welsh Government (2015) Water Strategy for Wales Welsh Government (2017) Natural Resources Policy Welsh Government (2018) Planning Policy Wales (2018) Edition 10 Welsh Government (2020) Future Wales: The National Plan 2040 Welsh Government (2023) Public Health Wales Climate Change in Wales: Health Impact Assessment

SEA Topic	Key Messages	Policies
		Regional/Local: Environment Agency (2025) North West Drought Plan Greater Manchester Combined Authority (2024) Places for Everyone Joint Development Plan Liverpool City Region Combined Authority (2023) Five Year Climate Action Plan 2023-2028 UU (2024) Revised Draft Water Resources Management Plan 2024Water Water Company (various) Drought Plans Water Company (various) Water Resources Management Plans Water Company (various) Drainage and Wastewater management plans 2023 Water Resources West (2025) Final Regional Plan Water Resources West (2023) Statement of Response
Water	Reduce water consumption and promote sustainable water resource management. Ensure appropriate management of abstractions and protect flow and level variability across the full range of regimes from low to high conditions. Maintain and improve water quality (surface waters, groundwater and bathing water). Prevent deterioration of waterbody status, 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 quality protection measures to all waters, surface waters and groundwater. Balance the abstraction of water for supply with the other functions and services the water environment performs or provides.	**International:** United Nations (2002) The World Summit on Sustainable Development. United Nations (2015) The 2030 Agenda for Sustainable Development **National:** Canal and River Trust (2015) Water Resources Strategy 2015 – 2020 Canal & River Trust (2015) Living Waterways Transform Places & Enrich Lives: Our 10-Year Strategy Centre for Environment Fisheries and Aquaculture Science and Natural Resources Wales (2021) Assessment of Salmon Stocks and Fisheries in England and Wales 2020 Defra (2005) Making space for water Defra (2006) Shoreline Management Plan Guidance Defra (2008) Future Water: the Government's water strategy for England Defra (2011) The Natural Choice: Securing the value of nature. The Natural

SEA Topic	Key Messages	Policies
	Steer new development to areas with the lowest probability of flooding and manage any residual flood risk, taking into account the impacts of climate change.	Environment White Paper Defra (2012) National Policy Statement for Waste Water Defra and Welsh Government (2014) River Basin Planning Guidance Defra (2015) The government's response to the Natural Capital Committee's third State of Natural Capital report Defra (2018) Farming rules for water – getting full value from fertilisers and soil Defra (2021) Drought: how water companies plan for dry weather and drought Defra (2022) UK Climate Change Risk Assessment 2022 Defra (2023) National Policy Defra (undated) Drought Plan Direction Defra (2025) Environmental Improvement Plan 2025 Defra (2026) A new vision for water: white paper Statement for Water Resources Infrastructure Environment Agency (2009) Water Resources Strategy for England and Wales Environment Agency (2010) Water Resources Action Plan for England and Wales Environment Agency (2011) National Flood and Coastal Risk Management Strategy for England Environment Agency (2013), Managing Water Abstraction Environment Agency CAMS (various) Environment Agency Catchment Flood Management Plans Environment Agency and other lead authorities Shoreline Management Plans Environment Agency (2025) Managing water abstraction HM Government (1975) Reservoirs Act HM Government (1975) Salmon and Freshwater Fisheries Act 1975 HM Government (1991) Water Industry Act 1991 was amended by the commencement of Section 36 of the Flood and Water Management Act 2010 HM Government (1994) Urban Waste Water Treatment (England and Wales) Regulations 1994 HM Government (2007) Water Resources Management Plan Regulations 2007
	Promote measures to enable and sustain long-term improvement in water efficiency.	
	The need to ensure reliable water supplies for critical low-carbon infrastructure during periods of drought, without compromising environmental flows or public water supply.	

SEA Topic	Key Messages	Policies
		HM Government (2009) The Flood Risk Regulations 2009 HM Government (2009) The Groundwater (England and Wales) Regulations 2009 HM Government (2009) The Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009 HM Government (2010) Flood and Water Management Act 2010 HM Government (2011) UK Marine Policy Statement HM Government (2012) Marine Strategy HM Government (2013) The Bathing Water Regulations 2013 HM Government (2014) Water Act 2014 HM Government (2015) The Nitrate Pollution Prevention Regulations 2015 HM Government (2015) The Environmental Damage (Prevention and Remediation) (England) Regulations 2015 HM Government (2016) Environmental Permitting (England and Wales) Regulations 2016 (as amended 2018) HM Government (2016) The Water Supply (Water Quality) Regulations 2016 HM Government (2017) The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 HM Government (2020) The Agriculture Act 2020 HM Government (2021) Environment Act 2021 National Infrastructure Commission (2018) Preparing for a drier future: England's water infrastructure needs Natural Resources Wales (2024) Water company drought plan – technical guidance Natural Resources Wales (2020) Area Statements and Opportunity Catchments Natural Resources Wales (2025) State of Natural Resources Report for Wales 2025 (SoNaRR2025) Ofwat (2016) Water 2020 Ofwat (2017) Resilience in the Round UKTAG: Phase 3 Review of Environmental Standards Water Resources Management Plans and Drought Plans from adjacent water companies to UU' supply area

SEA Topic	Key Messages	Policies
		Waterwise (2022) Water Efficiency Strategy for the UK Water UK (2016) Water Resources Long-term Planning Framework (2015 – 2065) Water UK (2022) Water 2050 – A White Paper Welsh Government (2015) A Water Strategy for Wales Welsh Government (2017) Natural Resources Policy Welsh Government (2020) Future Wales: The National Plan 2040 Welsh Government (2021) Planning Policy Wales (Edition 11) Welsh Government (2021) National Strategy for Flood and Coastal Erosion Risk Management in Wales Welsh Government (2022) National Indicators and National Milestones for Wales **Regional/Local:** Canal & Rivers Trust (2015) North West Waterway Fisheries & Angling Action Plan Environment Agency (2025) North West Drought Plan Environment Agency (various) Catchment Flood Management Plans Environment Agency and Natural Resources Wales (various) Salmon Action Plans Environment Agency (2013) Abstraction Licensing Strategies (CAMS process) Environment Agency (2022) River Basin Management Plans: updated 2022 (various): Environment Agency (2022) Flood Risk Management Plans (various): Other relevant water company WRMPs and Drought Plans Natural England and Environment Agency (various) River Restoration and Water Level Management Plans Nutrient Neutrality North West Partnership Project Outline Water Cycle Studies (Various) UU (2023) Draft PR24 Business Plan 2025-2030 Water Resources West (2025) Final Regional Plan Water Resources West (2023) Statement of Response

SEA Topic	Key Messages	Policies
Soil, geology and land use	Protect and enhance the diversity and quality of soils and geology (including geological SSSIs), including geomorphology and geomorphological processes, which can be damaged or lost by insensitive development.	**International:** European Commission (2024). Council Directive 1999/31/EC on the landfill of waste (consolidated version as of 4 August 2024). United Nations (2002) The World Summit on Sustainable Development. Food and Agriculture Organisation of the United Nations (2015) Revised World Soil Charter Food and Agriculture Organisation of the United Nations (2016) Voluntary Guidelines for Sustainable Soil Management **National:** Defra (2023) Unleashing Rural Opportunity Defra (2024) Delivering rural opportunity: third report on rural proofing Defra (2009) Safeguarding our Soils – A Strategy for England Defra (2018) Farming rules for water – getting full value from fertilisers and soil Defra (2020) National Food Strategy for England Defra (2020) The Path to Sustainable Farming: An Agricultural Transition Plan 2021 to 2024 Environment Agency (2007) Soil: a precious resource Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local (2023) National Planning Policy Framework HM Government (1981) Wildlife and Countryside Act 1981 HM Government (2006) Natural Environment and Rural Communities Act 2006 HM Government (2015) The Nitrate Pollution Prevention Regulations 2015 HM Government (2020) The Agriculture Act 2020 HM Government (2021) Environment Act 2021 National Assembly for Wales (2016) Environment (Wales) Act 2016 Natural Resources Wales (2020) National Peatland Action Programme Natural England (2011) UK Geodiversity Action Plan Natural Resources Wales (2025) State of Natural Resources Report for Wales 2025 (SoNaRR2025)
	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, and as a platform for construction) in keeping with the principles of sustainable development.	
	Promote a 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 development 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	

SEA Topic	Key Messages	Policies
		Welsh Government (2019) Draft National Development Framework (final emerging 2020) Welsh Government (2019) Draft National Flood and Coastal Erosion Risk Management Strategy for Wales Welsh Government (2017) Natural Resources Policy Welsh Government (2020) Future Wales: The National Plan 2040 Welsh Government (2021) Planning Policy Wales (Edition 11) Welsh Government (2023) Agriculture (Wales) Act 2023 Welsh Government (2022) Soil Management Welsh Government (2024) Sustainable Farming Scheme **Regional/Local:** Natural England - National Character Area (NCA) profiles Lake District National Park Authority (2021) Local Plan 2020-2035 Lake District National Park Authority (2021) Management Plan 2020-2025 Local Geodiversity Action Plans (LGAPs) Local Planning Authority (various) Land Use Plans Local Planning Authority (various) Local Plans/Local Development Plans National Park Management Plans (various) Nutrient Neutrality North West Partnership Project
Air and climate	Reduce the effects of air pollution on ecosystems. Improve overall air quality. 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. Reduce greenhouse gas emissions. Targets include reducing the UK's greenhouse gas emissions to net zero by 2050.	**International:** The Paris Agreement (2016), The Cancun Agreement (2011) & Kyoto Agreement (1997) European Commission (2008) Ambient Air Quality Directive (2008/50/EC) European Commission (2009) Promotion of the use of energy from renewable sources Directive (2009/28/EC) European Commission (2005) Thematic Strategy on Air Pollution European Commission (2016) National Emissions Reduction Commitments (NERC) Directive 2016/2284/EU

SEA Topic	Key Messages	Policies
	Minimise energy consumption, support the use of sustainable /renewable energy and improve resilience to climate change.	European Commission (2008) Ambient Air Quality and Cleaner Air for Europe Directive 2008/50/EC Air Quality Framework Fourth Daughter Directive 2004/107/EC and previous directives (96/62/EC; 99/30/EC; 2000/69/EC & 2002/3/EC) **National:** Climate Change Committee (2020) The path to Net Zero and progress on reducing emissions in Wales DESNZ (2023) National Policy Statements for Energy Infrastructure DESNZ and BEIS (2020) Energy white paper: Powering our net zero future DESNZ and BEIS (2021) Heat and Buildings Strategy DESNZ and BEIS (2021) Net Zero Strategy: Build Back Greener Department for Transport (2022) UK Electric Vehicle Infrastructure Strategy Defra (2007) The Air Quality Strategy for England, Scotland and Wales Defra (2012) The UK Climate Change Risk Assessment 2012 Evidence Report Defra (2008), England Biodiversity Strategy –climate change adaptation principles Defra (2008) Future Water: the Government's water strategy for England Defra (2007) Conserving Biodiversity in a Changing Climate: Guidance on Building Capacity to Adapt Defra (2013) The National Adaptation Programme – Making the Country Resilient to a Changing Climate Defra (2017) Air Quality Plan for Nitrogen Dioxide (NO2) in UK Defra (2018) The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting Defra (2022) UK Climate Change Risk Assessment 2022 Defra (2024) Understanding climate adaptation and the third National Adaptation Programme (NAP3) Defra (2025) Environmental Improvement Plan (EIP) 2025 Defra, Department of the Environment (NI), Scottish Government and Welsh Assembly Government (2010) Air Pollution: Action in a Changing Climate
	Build in adaption to climate change to future planning and consider the level of urgency of associated risk.	
	Need for adaptive measures to respond to likely climate change impacts on water supply and demand.	

SEA Topic	Key Messages	Policies
		English Heritage, now known as Historic England (2008) Climate Change and the Historic Environment Climate Change Committee (2020) The path to Net Zero and progress on reducing emissions in Wales The Historic Environment Group (2018) Historic Environment and Climate Change Sector Adaption Plan Historic England (2022) Climate change adaptation report HM Government (2006) Climate Change and Sustainable Energy Act 2006 HM Government (2010) The Air Quality Standards Regulations 2010 HM Government (2015) Ozone-Depleting Substances Regulations 2015 HM Government (2020) Energy White Paper: Powering our Net Zero Future HM Government (2021) Environment Act 2021 HM Government (2022) UK Climate Change Risk Assessment 2022 Natural England National Character Area (NCA) Profiles National Assembly for Wales (2015) Well-being of Future Generations Act (2015) National Assembly for Wales (2016) Environment (Wales) Act 2016 The Climate Change Act 2008 The Energy Act 2013 UKCIP (2018) UK Climate Projections UKCP18 Welsh Government (2021) Climate Change (Wales) Regulations 2021 Welsh Government (2012) Energy Wales: A Low Carbon Transition Welsh Government (2017) Natural Resources Policy Welsh Government (2020) Historic Environment and Climate Change in Wales Welsh Government (2020) Future Wales: The National Plan 2040 Welsh Government (2022) National Indicators and National Milestones for Wales **Regional/Local:** Cumbria Strategic Partnership (2004), Sustainable Cumbria - A sub-regional strategy for Cumbria

SEA Topic	Key Messages	Policies
		Greater Manchester Combined Authority (2025) Together we are Greater Manchester: Greater Manchester Strategy 2025-2035 Peak District National Park Authority (2018), Peak District National Park Management Plan 2018-2023 Outline Water Cycle Studies (Various) Peak District National Park Authority (2018), Peak District National Park Management Plan 2018-2023 UU (2024) Revised Draft Water Resource Management Plan Yorkshire Dales National Park Authority (2019), Yorkshire Dales National Park Management Plan 2019-24 Yorkshire Dales National Park Authority (2019), Yorkshire Dales National Park Management Plan 2019-24
Archaeology and cultural heritage	Built development in the vicinity of historic buildings and Scheduled Monuments 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 historical and cultural assets are avoided. Consider effects on important wetland areas with potential for paleoenvironmental deposits. Promote the conservation and enhancement of the historic environment, including the promotion of heritage and landscape as central to the culture of the assessment area and conserve and enhance distinctive characteristics of landscape and settlements. Conserve and enhance the historic environment, heritage assets and their settings.	**International:** Council of Europe (1985) Convention for the Protection of the Architectural Heritage of Europe (Granada Convention) Council of Europe (1992) Valletta Convention on Protection of Archaeology ICOMOS (2011) Guidance on Heritage Impact Assessments for Cultural World Heritage Properties IUCN (2013) World Heritage Advice Note: Environmental Assessment UNESCO (1972) Convention Concerning the Protection of the World Cultural and Natural Heritage UNESCO (2001) Convention on the Protection of Underwater Cultural Heritage **National:** Cadw, Countryside Council for Wales and ICOMOS (UK) (International Council on Monuments and Sites) (2001), Register of Landscapes of Historic Importance Department for Culture, Media and Sport (DCMS) (2001) The Historic Environment – A Force for the Future DCMS and Welsh Government (2007) Heritage Protection for the 21st Century DCMS (2013) Scheduled Monuments & Nationally Important but Non-Scheduled Monuments

SEA Topic	Key Messages	Policies
		DCMS (2016) The Culture White Paper Defra (2025) Environmental Improvement Plan (EIP) 2025 Department for Culture, Media and Sport (2001) The Historic Environment – A Force for the Future Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local (2023) National Planning Policy Framework Historic England (various) Heritage at Risk Historic England (2015) The Setting of Heritage Assets, Historic Environment Good Practice Advice in Planning 3 Historic England (2016) Historic England Advice Note 8: Sustainability Appraisal and Strategic Environmental Assessment Historic England (2022) Climate change adaptation report Historic England (2022) Heritage and Climate Change The Historic Environment Group (2018) Historic Environment and Climate Change Sector Adaption Plan Planning (Listed Buildings and Conservation Areas) Act 1990 HM Government (1953) Historic Buildings and Ancient Monuments Act 1953 HM Government (1973) Protection of Wrecks Act 1973 HM Government (1979) Ancient Monuments and Archaeological Areas Act 1979 HM Government (1990) Planning (Listed Buildings and Conservation Areas) Act 1990 HM Government (2002) The National Heritage Act 2002 HM Government (2021) Environment Act 2021 National Assembly for Wales (2016) Environment (Wales) Act 2016 Welsh Government (2017) Technical Advice Note 24 the Historic Environment Welsh Government (2020) Historic Environment and Climate Change in Wales **Regional/Local:** Cumbria Tourism (2024) A DMP for Cumbria

SEA Topic	Key Messages	Policies
		Greater Manchester Combined Authority (2024) Places for Everyone Joint Development Plan Historic England (2023) Heritage at Risk 2023 Registers: North West and Midlands Lake District National Park Authority (2021) Local Plan 2020-2035 Lake District National Park Authority (2021) Management Plan 2020-2025 National Landscapes (formerly Areas of Outstanding Natural Beauty) Management Plans (various) Natural England (2016) Conservation 21: Natural England's conservation strategy for the 21st century World Heritage Site Management Plans (various)
Landscape and visual amenity	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.	**International:** Council of Europe (2000), European Landscape Convention (Florence Convention) **National:** Cadw, CCW and ICOMOS (UK) (International Council on Monuments and Sites) (2001), Register of Landscapes of Historic Importance Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local (2023) National Planning Policy Framework Defra (2010) Making Space for Nature: A Review of England's Wildlife Sites and Ecological Network Defra (2023) Unleashing Rural Opportunity Defra (2024) Delivering rural opportunity: third report on rural proofing HM Government (1981) Wildlife and Countryside Act 1981 HM Government (2000) Countryside and Rights of Way (CROW) Act 2000 Historic England (2015) Historic Environment Good Practice Advice in Planning Note 3 HM Government (2018) A Green Future: Our 25-Year Plan to Improve the Environment HM Government (2021) Environment Act 2021 Wildlife and Countryside Act 1981 (as amended)

SEA Topic	Key Messages	Policies
		Welsh Government (2020) Future Wales: The National Plan 2040 Welsh Government (2021) Planning Policy Wales (Edition 11) Welsh Government (2018) Valued and Resilient: The Welsh Government's Priorities for Areas of Outstanding Natural Beauty and National Parks **Regional/Local:** Cumbria Tourism (2024) A DMP for Cumbria Greater Manchester Combined Authority (2024) Places for Everyone Joint Development Plan Lake District National Park Authority (2021) Local Plan 2020-2035 Lake District National Park Authority (2021) Management Plan 2020-2025Lake District National Landscapes (formerly Areas of Outstanding Natural Beauty) Management Plans (various) Natural England - National Character Area (NCA) profiles National Park Management Plans (various)

2.3 REVIEW OF BASELINE

2.3.1 Introduction

A fundamental component of the SEA process is to identify the current baseline conditions and how these might evolve. An awareness of existing conditions ensures that the impacts of the Drought Plan can be identified, mitigated and monitored.

Schedule 2 of the SEA Regulations requires the completion of an Environmental Report that contains:

- *"The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme"* (Schedule 2(2));
- "*The environmental characteristics of areas likely to be significantly affected"* (Schedule 2(3)); and
- "*Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Council Directive 79/409/EEC on the conservation of wild birds(1) and the Habitats Directive*", (Schedule 2(4)).

This section describes how baseline conditions in the plan area are expected to evolve, both with or without implementation of the plan). Understanding this trajectory is useful for assessing impact significance, particularly where conditions are already improving or worsening, and the rate of change is a relevant factor.

The baseline assessment draws on data from North West England covering UU's water supply operating boundaries, as evidenced in **Figure 1-3**. The importance of water supplies sourced from North East Wales has been recognised within the baseline review, and relevant Welsh environmental conditions have been incorporated to ensure that any potential transboundary effects arising from UU's abstractions are fully considered.

Baseline data is derived from a variety of sources, encompassing many of the plans and programmes reviewed as part of the SEA process (see **Section** Error! Reference source not found. and **Appendix A**). Each section d raws upon available data to summarise current conditions and likely future trends for the environmental issues under consideration. Each subsection concludes with a summary of the key issues arising from the review.

2.3.2 Limitations and Assumptions

Most of the information used in the baseline relates to the North West area. As such, this baseline information may not identify the more localised issues that may differ from the general trends of the region. For example, this may include locally important sites for recreation or any localised differences in environmental quality.

Data have primarily been sourced from national or regional bodies that collect information for the North West using consistent methodologies. This enables more effective comparison with UK averages; however, these datasets can be outdated.

The study area for the SEA is relatively large and covers different geographical and political areas, which makes establishing a baseline at the local level challenging.

There are also challenges around extrapolating information from data collated at differing spatial resolutions. Spatial data have been obtained for most of the SEA topics, and the baseline is presented graphically as mapped information where appropriate. In some instances, reporting cycles mean that available information is dated.

Where data gaps or uncertainties exist, these have been identified in the relevant topic sections. The potential implications of uncertainty have been taken into account in the assessment of likely significant effects, including through the application of precautionary assumptions where appropriate.

2.3.3 Overview

The North West region of England (referred to as the North West throughout this review) covers an area of 14,100 km² and is the largest region outside London and the South East. Within its boundaries, it contains the metropolitan areas of Manchester and Merseyside and the three counties of Cheshire, Cumbria and Lancashire. The region stretches 150 miles from the border with Scotland to the Dee Estuary. The Irish Sea marks its western border, and it stretches to the Pennines in the east.

The North West of England is a diverse region. Much of its population lives in cities, with approximately 60% of the population split between Liverpool and Greater Manchester. However, there are also substantial areas that are comprised largely of small towns and villages. Within the rural areas, there is important landscape heritage, with a significant proportion designated as the Lake District National Park. The Lake District, alongside the other areas of the National Park overlapping with the UU operating area, provide a wealth of natural heritage to the region.

It is acknowledged that the Drought Plan may impact some areas of North East Wales, including the River Dee and Lake Vyrnwy. Therefore, information relating to Wales has been presented where relevant and available.

2.3.4 Biodiversity, Flora and Fauna

2.3.4.1 Baseline

Biodiversity is defined as the variety of plants (flora) and animals (fauna) in an area and their associated habitats. The value of biodiversity conservation is recognised on an international and local scale. Biodiversity has importance in its own right and has value in terms of quality of life and amenity.

Drought management measures have the capacity to affect biodiversity, flora and fauna due to the operational abstraction of water during times of water stress. The sensitivity of environmental features to drought management measures is site-specific. A drought is transient, and the utilisation of drought management measures would only be for a limited period. Therefore, the duration of effects on sensitive features and the reversibility of the effects post-drought are important considerations.

The North West is rich in areas of biodiversity interest, and it contains some of the most diverse upland and lowland terrain in England. The North West Biodiversity Audit[9] shows that the region contains 31 out of 37 different 'Broad Biodiversity Action Plan habitat classifications', one of the most diverse in the country. Wildlife indicators show that the region is also a haven for a significant number of species, with 135 rare species that are a UK or regional priority to protect.

The region includes a variety of sites that are designated at an international, European, national or local level as important for biodiversity, flora and fauna, including approximately[10]:

- 18 Ramsar Sites
- 14 Special Protection Areas (SPA)
- 42 Special Areas of Conservation (SAC)
- 485+ Sites of Special Scientific Interest (SSSI)
- 8 Marine Conservation Zones (MCZ)
- 37 National Nature Reserves (NNR)
- 170 Local Nature Reserves (LNR)

The distribution of nature conservation sites across the UU supply area and part of North Wales is shown in **Figure 2-1** and **Figure 2-2**.

[9] North West Biodiversity (1999) Wild About the North West: A Biodiversity Audit of North West England

[10] Defra Data Services Platform. Available at: https://environment.data.gov.uk/ [Accessed May 2024]

Figure 2-1: European Sites in the UU Supply Area and North Wales

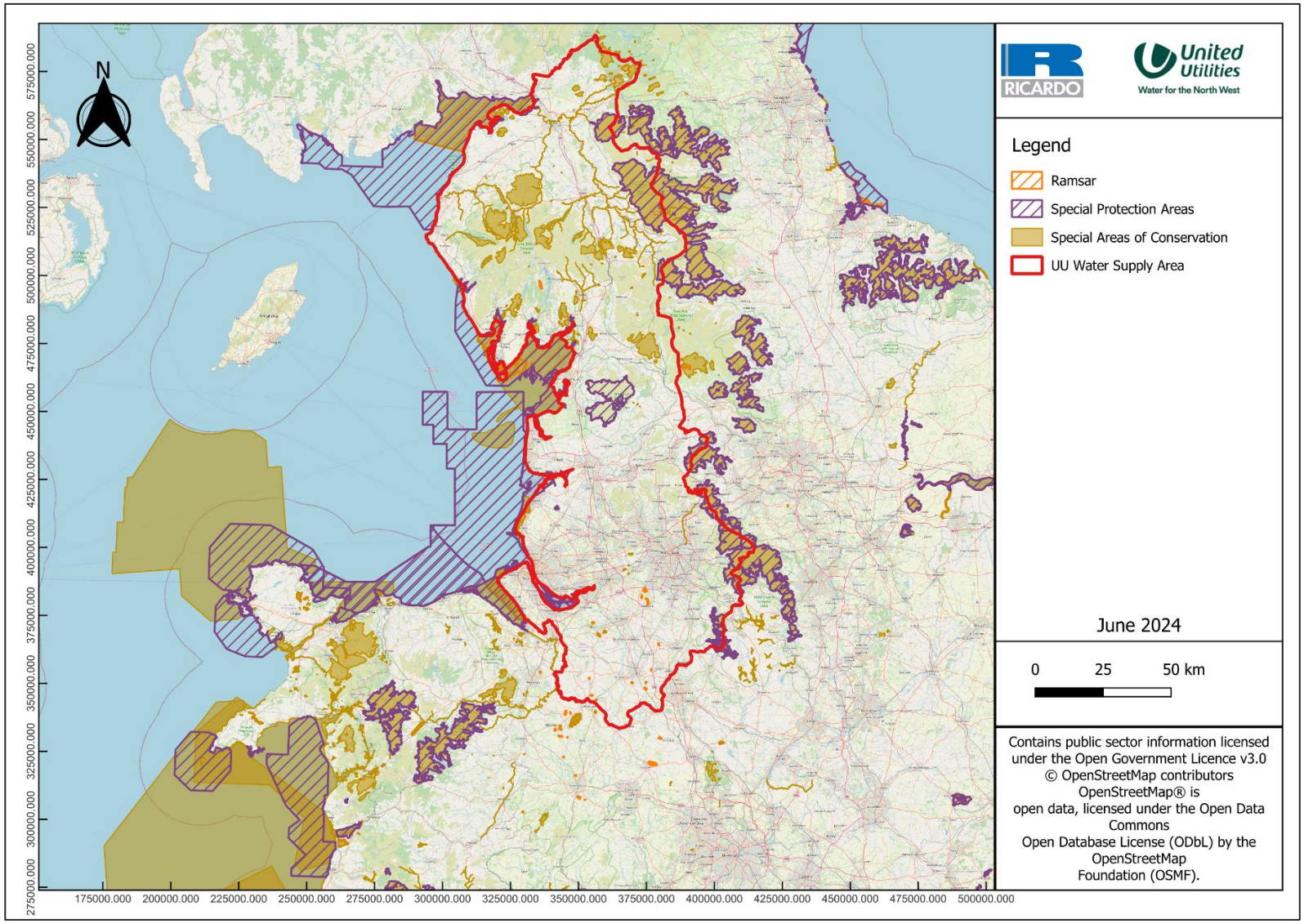
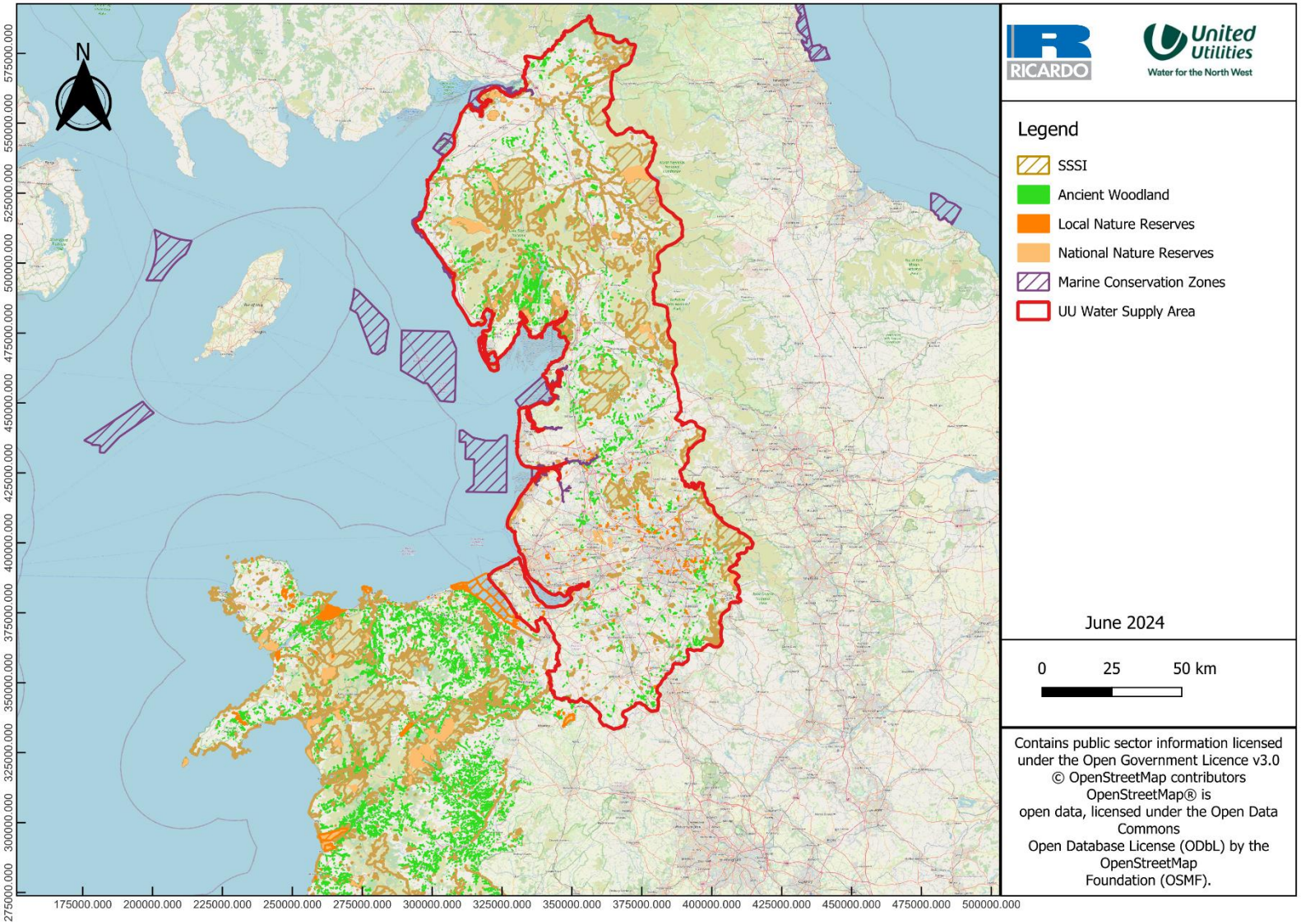


Figure 2-2: National and Local Nature Conservation Designations in the UU Supply Area and North Wales



The Natural England database suggests that throughout the North West there are over 21,300 ha designated as freshwater, wetland and peatland habitat. The SEA study area contains over 480 SSSIs, with much of these also designated as a SPA, SAC and/or Ramsar Site. In Cumbria alone, there are over 600km of SAC river systems and a total of 31 lakes and tarns designated as open-water SSSIs. In addition to these SSSIs designated specifically for their freshwater and wetland interest, there are numerous SSSIs and international sites with freshwater and wetland habitats present as an important component feature within the wider site.

The State of Nature Report 2023[11] concluded that across the UK, the abundance of 753 terrestrial and freshwater species has fallen by an estimated 19% since 1970, the distributions of invertebrate species have decreased by 13% since 1970 and 16% of all species in the UK are threatened with extinction.

Species and habitats of principal importance for the conservation of biodiversity in England are identified in the Natural Environment and Rural Communities (NERC) Act 2006 Section 41. Important water-related NERC species include otter, water vole, river lamprey, Atlantic salmon and European eel. Within both inland and coastal water-based habitats, there have been notable increases in populations of otters and trout. Despite this, long-term regional population trends for some species still indicate a general decline. For example, the findings of the sixth Otter Survey of Wales[12] show a partial decline in otter populations in Wales. However, the findings for the Dee and Severn catchments were not statistically significant. In 2023, the total declared sea trout catch by rod was 1,154 in the North West and 848 in Wales. Compared to 2022, this represents a 28.5% decrease in the North West and a 3.9% decrease in Wales. However, when compared to the 5-year mean, these figures reflect significant declines of 46.3% and 37.3%, respectively[13].

Water voles are classified as an endangered species in both England and Wales. Earlier reports monitored progress up to and beyond the 2015 target date, with data at the time indicating a 30% decline in the number of sites occupied by water voles across England and Wales over the preceding decade. More recent data shows that, between January 2006 and December 2022, water vole distribution across Great Britain declined by an estimated 39%[14].

North West England is a nationally important stronghold for the remaining populations of native, white-clawed crayfish, a protected species that has seen dramatic declines across the UK[15]. These declines are largely due to the spread of the invasive non-native signal crayfish, which not only outcompetes the native species for habitat and food but also carries crayfish plague, a disease fatal to white-clawed crayfish. The risk of further spread is particularly significant in the context of water transfers and catchment connectivity. As such, strict biosecurity measures are essential to prevent cross-contamination between river systems[16].

The SSSI area across England in favourable condition has decreased slightly, from 38.5% in 2016 to 36.8% in 2023. The area in unfavourable recovering condition has decreased from 57.3% to 49.1% in the same time period, meanwhile 6.9% of SSSI is currently estimated to be in unfavourable declining condition[17].

To the west of UU's water supply area, West Cheshire and North East Wales contain areas that are designated for protection either nationally or internationally, including the Clwydian Range and Dee Valley National Landscape (formerly Area of Outstanding Natural Beauty), a 35km long chain of hills rising between the Vale of Clwyd to the west and the Dee Estuary to the east. The area also has 8 SACs, 4 SPAs and 3 Ramsar Sites, including the Dee Estuary, an area of particular importance for its internationally recognised population of wintering waterfowl and waders. There are additional designated sites in the vicinity of the Lake Vyrnwy drought option, including Berwyn SPA and SSSI, the Berwyn and South Clwyd Mountains SAC and Y Berwyn NNR.

[11] State of Nature (2023) State of Nature Report 2023. Available at: https://stateofnature.org.uk/wp-content/uploads/2023/09/TP25999-State-of-Nature-main-report_2023_FULL-DOC-v12.pdf [Accessed 2024]

[12] Natural Resources Wales (2021) NRW Evidence Report: Otter Survey Wales 2015-2018. Available at: https://cdn.cyfoethnaturiol.cymru/media/694539/osw-6th-report-final.pdf [Accessed August 2024]

[13] Environment Agency and Natural Resources Wales (2024) Salmonid and freshwater fisheries statistics for 2023 Available at https://www.gov.uk/government/publications/salmonid-and-freshwater-fisheries-statistics-2023/salmonid-and-freshwater-fisheries-statistics-for-2023 [Accessed April 2025]

[14] The Wildlife Trusts (2022) National Water Vole Database Project Available at https://www.wildlifetrusts.org/sites/default/files/2024-12/Part%201%20Project%20Report%202013-2022.pdf [Accessed April 2025]

[15] Northwest Nature and History (n.d) The White-Clawed Crayfish Available at https://northwestnatureandhistory.co.uk/2024/01/19/the-white-clawed-crayfish/ [Accessed April 2025]

[16] The Wildlife Trusts (n.d) White-clawed crayfish Available at https://www.wildlifetrusts.org/wildlife-explorer/invertebrates/crustacea-centipedes-and-millipedes/white-clawed-crayfish#:~:text=About.%20As%20the%20UK's%20only%20native%20freshwater,our%20indigenous%20crayfish%20has%20no%20natural%20resistance. [Accessed April 2025]

[17] Defra (2023) Extent and condition of protected areas, 2005 to 2023. England. November 2023. Available at: https://www.gov.uk/government/statistics/england-biodiversity-indicators/1-extent-and-condition-of-protected-areas--2 [Accessed August 2024]

The River Dee and Bala Lake SAC is also in the vicinity of several of UU's drought options (although no drought options include abstraction from the River Dee). The River Dee flows from Llyn Tegid and is important for a range of species and habitats, including migratory fish, particularly salmon, and three species of lamprey. The Dee is also important for its population of otters, which live and breed in the river and tributaries throughout the catchment, and for bullhead, which are widespread throughout the river system.

There has been a dramatic increase in the number of non-native species arriving in the UK over recent decades, as well as in the number of invasive species being established. There are approximately 2000 non-native species established in Britain, with the majority in the terrestrial environment and smaller numbers in marine and freshwater environments. Non-native species cause significant adverse impacts, including out-competing native species and spreading disease. The Great Britain Invasive Non-Native Species Strategy 2023 - 2030 builds on previous strategies to provide a framework for coordination action to prevent the spread and work to eradicate species across the UK[18].

UU owns some 57,000 ha of land, much of which is of high value in terms of nature conservation and recreational use. 30% of the land within UU's ownership is designated as SSSIs, and UU is helping to protect these sites as part of its obligation to conserve and enhance these areas.

Building on achievements of the Sustainable Catchment Management Programme (SCaMP), which began in 2005, UU has continued to work in partnership with other organisations across the North West through Catchment Wise[19]. Catchment Wise seeks to tackle pollution at source to improve the quality of water in lakes, rivers and coastal waters through sharing expertise about how land is used and managed across the region. In 2021, UU created a dedicated Catchment Systems Thinking (CaST) Account, which £300,000 available to support charitable organisations in delivering catchment-based projects in the UU operational area. A total of eight charities received funding for their projects, which included encouraging community engagement with nature through education and recruitment of volunteers to undertake conservation work to improve habitats and the water environment.

Non-statutory Protected Sites and Other Biodiversity

There are over 100 LNRs across the North West region, in addition to numerous Local Wildlife Sites. Local Wildlife Sites include the following:

- **Cumbria:** over 1,600 County Wildlife Sites (Local Wildlife Sites), including ancient woodland, species-rich grasslands, wetlands, roadside verges and hedgerows. [20]
- **Lancashire:** over 1,100 Biological Heritage Sites (Local Wildlife Sites), covering 25,000 ha, representing 8% of the county's area.
- **Greater Manchester**: more than 500 sites, which are known as Sites of Biological Importance.[21]
- **North Merseyside:** 268 Local Wildlife Sites in the area.[22]
- **Cheshire:** around 1,000 Local Wildlife Sites, covering over 15,000 ha and representing 5.75% of the total area of Cheshire.[23]
- **Derbyshire:** 1,179 Local Wildlife Sites covering almost 10,000 ha (outside of the Peak District National Park).[24]

In Wales, 557 species are identified under Section 7 of the Environment (Wales) Act 2016, which specifies species of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales.

[18] Defra, Welsh Government, Scottish Government (2023) The Great Britain Invasive Non-Native Species Strategy Available at: https://www.nonnativespecies.org/about/gb-strategy/ [Accessed May 2024]

[19] United Utilities, History of Catchment Systems Thinking. Available at https://www.unitedutilities.com/corporate/responsibility/stakeholders/catchment-systems-thinking/catchment-management/ [Accessed August 2024]

[20] Cumbria Wildlife Trust https://www.cumbriawildlifetrust.org.uk/about [Accessed August 2024]

[21] Greater Manchester Ecology Unit (GMEU), Sites of Biological Importance (SBI / LWS) in Greater Manchester (Spreadsheet). Available at: https://data.gov.uk/dataset/81cbf1a0-6304-470c-ade8-60272be0d219/sites-of-biological-importance-sbi-lws-in-greatermanchester [Accessed August 2024]

[22] North Merseyside Local Sites Partnership (2021) Local Wildlife Sites: Annual Monitoring Report 2020-21. Available at: https://northmerseysidelsp.org.uk/wp-content/uploads/2021/06/Annual-Monitoring-Report-2020-21_Final.pdf [Accessed August 2024]

[23] Cheshire Wildlife Trust, Local Wildlife Sites (LWS). Available at: https://www.cheshirewildlifetrust.org.uk/wildlife/our-workwildlife/our-work-wildlife/local-wildlife-sites [Accessed August 2024]

[24] Derbyshire Wildlife Trust, Local Wildlife Sites. Available at: https://www.derbyshirewildlifetrust.org.uk/local-wildlife-sites [Accessed August 2024]

2.3.4.2 Future Baseline

It is not expected that many additional sites will be designated under international or national legislation throughout the Drought Plan. Therefore, focus is instead placed on achieving the conservation objectives set for each of the existing sites.

Current trends in data have shown that there has been a 10% decline in the condition of SSSIs since 2016[25]. In 2022, the UK formally made a commitment to protect and conserve a minimum of 30% of land and sea for biodiversity by 2030, known as 30x30[26]. The 2023 Environment Improvement Plan[27] contains a commitment from the UK Government to restore 75% of protected sites to favourable condition by 2042 as well as interim targets for all SSSIs to have an up-to-date condition assessment and 50% of these to have actions on track to achieve favourable condition by 31 January 2028. There are several legislative instruments, including notably the Habitats Regulations and the UK's Restoring Sustainable Abstraction programme, which will contribute towards future improvements to the quality of habitats in the region.

Trend data suggests that the otter populations have tracked a slow but steady recovery of numbers following severe declines between the late 1950s and 1970s. However, in most rivers, particularly those flowing to the North West coasts of England and in Wales, there is evidence of a marked decline in the numbers of returning salmon over the last decade[28]. Following dramatic declines in European eel populations since the 1980s, numbers have been slowly increasing as a result of legislation to protect the species. However, there is a continued threat to eel populations due to a lack of habitat and barriers to eel passages. Eel Management Plans (EMPs) have been prepared for every River Basin District in England and Wales, which set out actions to halt and reverse the decline in the European eel stock.

Key bird and mammal species in the North West of England are diminishing, in line with national trends. The North West's 25-year trends demonstrate that we are losing once-common species such as the red fox, rabbits, brown hare, and hedgehogs[29]. Wild bird species indicators have shown an increase in the incidence of farmland and woodland bird species in the region, which contradicts national trends. As such, potential future trends for the region are difficult to predict or determine.

Habitat fragmentation is a major problem for wildlife in the UK and across the world, the effects of which include loss of habitat area, reduction in habitat quality and increased extinction risk. Loss of connectivity can be particularly important for functionally linked land, which is considered to be critical to or necessary for the ecological or behavioural functions of a qualifying feature of a SAC, SPA, or Ramsar site. There are several actions that can be taken in response to habitat fragmentation, including protecting existing areas, restoration of affected areas and creation of new areas. For example, the Environmental Improvement Plan[30] includes commitments to restore and establish new woodlands along England's rivers.

Climate change is impacting biodiversity by intensifying existing pressures, such as shifts in the timing of seasonal activities and increasing water scarcity[31]. There is, therefore, a need to allow wildlife to adapt to climate change, in line with the Government's ambition for the reversal of the decline in native species and increase in wildlife-rich habitats[32]. The restoration of wetland habitats for wading birds around Morecambe Bay is one example of increasing the ability of species to adapt to change.

[25] Defra (2024) Extent and condition of protected areas Available at https://www.gov.uk/government/statistics/england-biodiversity-indicators/1-extent-and-condition-of-protected-areas--2 [Accessed April 2025]

[26] Natural England (2023) 30 by 30: a boost for nature recovery Available at: https://naturalengland.blog.gov.uk/2023/12/11/30-by-30-a-boost-for-nature-recovery/ [Accessed May 2024]

[27] HM Government (2023) Environment Improvement Plan 2023. First revision of the 25 Year Environment Plan. Available at: https://assets.publishing.service.gov.uk/media/64a6d9c1c531eb000c64fffa/environmental-improvement-plan-2023.pdf [Accessed August 2024]

[28] CEFAS, Environment Agency and Natural Resources Wales (2025) Assessment of Salmon Stocks and Fisheries, England and Wales 2024. Available at: https://www.gov.uk/government/publications/assessment-of-salmon-stocks-and-fisheries-england-and-wales-2024 [Accessed March 2025]

[29] Greater Manchester Combined Authority (2024) Greater Manchester State of Nature Available at: https://www.greatermanchester-ca.gov.uk/media/9526/gm-state-of-nature-report.pdf [Accessed June 2024]

[30] Defra (2025) Environmental Improvement Plan (EIP) 2025. Available at https://www.gov.uk/government/publications/environmental-improvement-plan-2025/environmental-improvement-plan-eip-2025 [Accessed February 2026]

[31] Greenspace UK (n.d) What are the effects of climate change on biodiversity? Available at https://www.greenpeace.org.uk/challenges/wildlife-and-biodiversity/climate-change-biodiversity/#:~:text=Changing%20weather%20patterns%20disrupt%20seasonal,the%20natural%20rhythm%20of%20life. [Accessed April 2025]

[32] Natural England (2023) 30 by 30: a boost for nature recovery Available at: https://naturalengland.blog.gov.uk/2023/12/11/30-by-30-a-boost-for-nature-recovery/ [Accessed May 2024]

2.3.4.3 Key Issues

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

- The need to protect, maintain or enhance biodiversity, ecological functions and biodiversity connectivity within UU's supply and source areas, particularly water-dependent priority species and habitats.
- The need for opportunities to improve connectivity between fragmented habitats to create functioning habitat corridors.
- The need to promote the resilience of ecosystems.
- The need to continue to increase and improve the condition of priority habitats and habitats of priority species and restore populations of these species and other specially protected species.
- The need to avoid and mitigate against, where necessary, activities likely to cause irreversible damage to natural heritage.
- The need to control the spread of INNS.
- The need to recognise the importance of allowing wildlife to adapt to climate change.
- The need to engage more people in biodiversity issues so that they value biodiversity and know what they can do to help, including by recognising the value of ecosystem services.

2.3.5 Population and Human Health

2.3.5.1 Baseline

Population

In 2022, the North West had a population of 7.5 million people[33] and is projected to increase to 7.6 million by 2028[33]. The ONS predicts that growth in the North West will drop to 3.16% over the next decade (2021-2031), growing from 7.4 million to 7.6 million, lower than England's expected growth rate of 5.13% (56.5 million to 59.4 million), which has slowed.

The majority (89%) of the population in the North West lives in urban areas, with the regional population distributed as 38% in Greater Manchester, 21% in Merseyside, 20% in Lancashire, 14% in Cheshire and 7% in Cumbria[34]. The North West has a population density of 526 people per km^2, which is higher than England's national density of 434 people per km^2 [35]. The majority of the population of the North West live in urban areas, particularly Manchester at 4,755 people per km^2, Liverpool at 4,332 people per km^2 and Blackpool at 4042 per km^2. In contrast, the district of Eden in Cumbria has the lowest population density in England, with 26 people per km^2.

Household growth projections show that the number of households in the region is likely to increase from 3.12 million in 2018 to 3.30 million in 2028, an increase of approximately 5.7%[36]. Most of the projected growth in households between 2018 and 2028 will come from one person (19% increase) and multiple adult households without dependent children (14% increase). The number of households with three or more dependent children and two dependent children is forecasted to decrease by 6% and 5%, respectively.

Economy and Employment

The North West has a large yet varied economy, and different areas within the region are facing different challenges. Gross value added (GVA) is an indicator that has been developed to measure the economic contribution of individual firms, industries or sectors in the UK. In 2017, the North West experienced a 3.6% annual growth in total GVA, compared to 3.6% in the UK overall[37]. The greatest annual growth in real GVA of combined authority areas was in the Liverpool City Region at 3.3%.

On a sub-regional scale, economic performance varies significantly. Economic growth in areas such as Liverpool and Manchester has been strong, and the general economic performance of other areas, such as Cheshire and Lancashire, has also been positive in comparison to the regional level. Conversely, Cumbria

[33] Varbes (2024) Population of North West England, Available https://www.varbes.com/population/north-west-population. [Accessed December 2024]

[34] United Utilities (2024) Our Business Plan Summary 2025 – 30. Available at https://pr24.unitedutilities.com/ [Accessed May 2024]

[35] LandTech (2024) North West: Demographics, Density & Migration Patterns, Available at https://land.tech/reports/north-west-demographics-density-migration-patterns [Accessed May 2024]

[36] Office for National Statistics (2020) Household projections for England: 2018-based, Available at https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/householdprojectionsforengland/2018based [Accessed May 2024]

[37] Office for National Statistics (2018) Regional economic activity by gross value added (balanced), UK: 1998 to 2017. Available at https://www.ons.gov.uk/economy/grossvalueaddedgva/bulletins/regionalgrossvalueaddedbalanceduk/1998to2017 [Accessed August 2024]

remains the poorest performing sub-region, often attributed to the loss of some of the manufacturing base and agriculture. The effects of this decline have been felt the greatest in Carlisle and Barrow-in-Furness.

In 2023, the level of economic inactivity in the North West was 22.9%, higher than the national average of 22.1%[38]. **Table 2-2** shows that the proportion of economically active people during the period January to March 2024 in the North West was 77.1% of the 16 – 64-year age group, 0.8% lower than the UK figure for the same period (77.9%). Economically active in this context is defined by the Office for National Statistics (ONS) as those persons of working age who are employed or looking to be employed[39]. **Table 2-2** shows the unemployment rate in the region was slightly above the national average in 2023 at 5.5% (national average 4.3 %).

Table 2-2: Economic Activity (Jan 2024-Mar 2024)[39]

	North West (Level)	North West (%)	United Kingdom (Level)	United Kingdom (%)
All People				
Economically Active	3,772,000	77.1	34,483,000	77.9
In Employment	3,564,000	72.7	32,997,000	74.5
Unemployed	207,000	5.5	1,486,000	4.3
Economically Inactive	1,076,000	22.9	9,383,000	22.1

The average gross weekly earnings for full-time employees in the North West in 2023 was £649.0/week, which is below the national average of £681.7/week[40]. The largest proportion of jobs in the North West are in human health and social work activities (16.2%) and wholesale and retail trade (16.1%), similar to UK trends[41]. A total of 33,861 jobs (1%) in the North West is within the water supply, sewerage and waste management sector. UU directly employs more than 5,000 people and engages with 10,000 people through its supply chain, therefore directly or indirectly providing one in every 150 jobs in the region[42].

Education and Skills

The levels of qualifications in the region are reasonably representative of England and Wales (**Table 2-3**). The proportion of people with degree-level qualifications (RQF4 and Above) is slightly below the national average. Individuals with educational attainment equivalent to GCSE Grades A-C (RQF1 and RQF2) is higher than the national averages and 0.1% higher than the national average for the number of people with no qualifications. A key aspiration of the region's Economic Strategy is to reduce the level of working-age people without qualifications.

Table 2-3: Level of qualifications[43]

Qualifications	North West	North West (%)	United Kingdom	United Kingdom (%)
RQF4 and Above *Degree or equivalent and above*	1,953,600	44.4	19,134,600	47.1

[38] Office for National Statistics (2023) Local indicators for the North West Available at https://explore-local-statistics.beta.ons.gov.uk/areas/E12000002-north-west/indicators [Accessed June 2024]

[39] Office for National Statistics (2024) Labour Market Profile - North West, Available at https://www.nomisweb.co.uk/reports/lmp/gor/2013265922/report.aspx#tabrespop [Accessed May 2024]

[40] Office for National Statistics (2024) Labour Market Profile - North West, Available at https://www.nomisweb.co.uk/reports/lmp/gor/2013265922/report.aspx#tabrespop [Accessed May 2024]

[41] ONS (2021) North West Region Available at https://www.nomisweb.co.uk/sources/census_2021/report?compare=E12000002 [Accessed May 2024]

[42] United Utilities (2024) *Employees*. Available at: https://www.unitedutilities.com/corporate/responsibility/employees/#:~:text=It%20takes%20more%20than%205%2C000,employers%20in%20the%20North%20West. [Accessed August 2024]

[43] Office for National Statistics (2024) Labour Market Profile - North West, Available at https://www.nomisweb.co.uk/reports/lmp/gor/2013265922/report.aspx#tabrespop [Accessed May 2024]

Qualifications	North West	North West (%)	United Kingdom	United Kingdom (%)
RQF3 *Higher education below degree level*	938,500	21.3	8,386,600	20.6
RQF2 *GCSE (grades 9-4: previously A*-C)*	917,400	20.9	7,612,400	18.7
RQF1 *GCSE (grades 3-1: previously D-G)*	130,300	3.0	986,000	2.4
Other Qualifications	160,300	3.6	1,840,000	4.5
No Qualifications	296,400	6.7	2,697,900	6.6

The performance of school pupils in the region has been improving consistently in recent years[44]. In 2022/23, the percentage of Key Stage 1 pupils in the North West meeting the expected level of performance in maths, reading, science and writing was slightly lower than the national performance (Error! Reference source not f ound.). In the same year, 59% of Key Stage 2 pupils in the North West reached the expected standard in reading, writing and maths, compared to the national average of 60%. At GCSE level, in 2022/23, the percentage of pupils achieving the English Baccalaureate grades 4 or above (A*-C in unreformed subjects) was 20.8%, lower than the national average of 24.3%. Overall, 89.4% of the region's state-funded schools were rated good or outstanding as of 2024 compared to the national value of 89.7%[45]

Health and Deprivation

The Drought Plan has the potential to influence the quality of life and human health through alterations to infrastructure and restrictions on water use. The Drought Plan sets out measures to ensure that essential water supplies can be maintained for all UU's customers, thereby protecting human health during drought conditions.

In comparison to the national average, the health of the North West is relatively poor. Life expectancy serves as a general indicator of a region's health status, and an individual's place of birth significantly affects their anticipated lifespan. Between 2018 and 2020, the average life expectancy for a newborn baby girl was 81.7 years (1.4 years below the English average) and 77.9 years for a newborn baby boy (1.5 fewer years than the English average). Approximately 80% of people in the North West (1.7 percentage points below the English average) report that their health is either 'very good' or 'good'. In the same responses, approximately 6% stated their health was 'bad', above the national average of 1.1%[46].

The ONS compiled the 'Indices of Multiple Deprivation' in 2019, which score and rank local authorities and smaller 'Super Output Areas' according to their performance against seven distinct categories of deprivation. Approximately 47% of the most deprived neighbourhoods (top 1%) are in the North West region[47]. The indices show that there are some significant pockets of deprivation in all the counties and districts in the region, with particularly large concentrations in and around the urban conurbations of Knowsley, Liverpool, Manchester and Blackpool.

Recreation and Tourism

Drought management measures have the capacity to affect areas with recreation value. Any potential construction requirements may include indirect impacts on recreation and tourism through reduced access or loss of amenity value. Temporary water use restrictions (voluntary and statutory) may also adversely affect some recreational activities due to the suspension of external water uses, such as the watering of sports grounds.

The North West offers a variety of opportunities for recreation and tourism, from the cultural offerings of the major cities to recreation in the region's National Parks and National Landscapes (formerly Areas of Outstanding Natural Beauty). Tourism also generates value for the region's economy. In 2022, the total tourist spend in the North West was £9.9bn[48]. In 2023, the North West region had the fourth-largest share of trips in

[44] Department for Education (2018) Statistical collections.

[45] Office for National Statistics (2023) Local indicators for the North West Available at https://explore-local-statistics.beta.ons.gov.uk/areas/E12000002-north-west/indicators [Accessed June 2024]

[46] Munford, L., Bambra, C., Davies, H., Pickett, K., Taylor-Robinson, D. (2023), Health Equity North: 2023, Health Equity North, Newcastle.

[47] United Utilities (2024) Our Business Plan Summary 2025 – 30. Available at https://pr24.unitedutilities.com/ [Accessed May 2024]

[48] Visit Britain (2022) Total tourism spend in your region (2022): 2024 forecast. Available at https://www.visitbritain.org/media/3021/download?attachment [Accessed May 2024]

England and outside London. It had the second-largest share of the total monetary value[49]. The Environment Agency has also prepared a strategy for water-based recreation in the North West[50] , which identifies priorities and initiatives which will help to address gaps in information or activity provision in the North West.

UU contributes to the recreational and tourism assets of the region through its ownership and management of land and water bodies, as well as the impact of its activities on the wider natural environment. The company owns over 57,000 hectares of land, the majority of which is accessible to the public for recreational use[51]. Specifically, there are opportunities for angling, water sports activities, walking and cycling trails, as well as educational centres on nature reserves, reservoirs, and other land owned by UU. Furthermore, UU's water management has an impact on river and bathing water quality and thus can bear a direct influence on the tourist industry in the North West[52]. Further challenges lie in the extent to which seasonal variation in tourist numbers can increase pressure on water resources during summer months, the period when demand is already typically highest.

2.3.5.2 Future Baseline

Population demographics within the North West are likely to remain evolving, particularly towards an increasingly ageing population, with reduced occupancy rates per household. Further to this, increased investment and economic development in the region may slow outward migration in the long term and subsequently, the population of the region is set to increase in line with national trends.

Employment levels have gradually increased since 1992. Recent statistics have shown the region has seen a decrease in the unemployment rates, and it is expected that this trend will continue.

In response to recent studies, access to recreational resources, green spaces and the historic environment will have a greater bearing on future planning27[53]. An example of this is the expansion of Green Infrastructure Partnerships, with the intention to support the development of environmental infrastructure in England. Improvements to the quality of the water environment will present opportunities for expanding the tourism industry of the region.

2.3.5.3 Key Issues

The key sustainability issues arising from the baseline assessment for population and human health are:

- The need to ensure water supplies remain affordable, especially for deprived or vulnerable communities.
- The need to ensure the continuing safe, reliable and resilient provision of water services to maintain the health and wellbeing of the population.
- The need to ensure that the water requirements of people, visitors and other users such as energy and agriculture can be met at all times in a sustainable way, including in the seasonal peaks associated with tourism.
- The need to ensure public awareness of drought conditions and the importance of maintaining resilient, reliable public water supplies without the need for emergency drought measures.
- The need to ensure a balance between different aspects of the built and natural environment that will help to provide opportunities for local residents and tourists for access to green infrastructure and the natural and historic environment, as well as protecting and enhancing recreational resources.
- The need to ensure that the Drought Plan does not have an adverse economic impact.
- The need to ensure that 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.

The implications of a changing population on material assets and resource use, including water resources, are considered in **Section 2.3.6** below.

[49] Visit Britain (2024) Great Britain domestic overnight trips: latest results Available at https://www.visitbritain.org/research-insights/great-britain-domestic-overnight-trips-latest-results [Accessed May 2024]

[50] Environment Agency (2010), Blue Horizons 2010-2015

[51] United Utilities (2024) Film locations. Available at United Utilities - film locations.[Accessed May 2024]

[52] United Utilities (2024) Environment. Available at https://www.unitedutilities.com/corporate/responsibility/environment/ [Accessed May 2024]

[53] Defra (2011) The Natural Choice: securing the value of nature, The Natural Environment White Paper Available at https://assets.publishing.service.gov.uk/media/5a7cb8fce5274a38e57565a4/8082.pdf [Accessed May 2024]

2.3.6 Material Assets and Resource Use

2.3.6.1 Baseline

Water Demand

The quantity of water for public supply has reduced from approximately 2.5 billion litres per day in 1994/5 to 1.9 billion litres per day in 2018[54]. This decrease is largely attributed to a major leakage reduction programme and a continuing fall in use by industry. Of the 1.8 billion litres of water UU supplies to customers daily, well over half is from Cumbria and Wales. The water is gathered from reservoirs in the Pennines and the Lake District, from Lake Vyrnwy in Wales for customers in Merseyside and Cheshire and from the River Dee, from boreholes and streams[55]. Just under half of all water is used by households, with a quarter used by businesses and a further quarter lost through leakage. UU collects and treats wastewater from three million homes and 200,000 businesses from as far north as Carlisle all the way down to Crewe[55].

On average, UU meets a demand for water of approximately 1,850 million litres a day, with household (domestic) customer consumption taking up 51.5%, non-household (commercial and industrial) taking up 20.5%, leakage comprising 24.4% and water taken unbilled and operational using taking up the remaining 3.4% [56]. As of 2022/23, UU had achieved a 6% reduction in leakage and is targeting a 15% reduction by 2025[57].

In 2021/2022, the regional average household per capita consumption was 148 litres per head, a decrease of 8 litres/person/day since the previous year[58]and 140.0 litres/person/day in 2022/2023[59]. UU aims to reduce this by per capita consumption (PCC) by over 6% by 2024/25 and is planning to reduce to 110 litres per person per day by 2050, in line with government policy[56].

As well as public water supply, some water users abstract water directly without treatment by water companies.

The key demand statistics for UU are set out by WRZ in **Table 2-4**. Resource demand is heavily weighted to the Strategic Resource Zone, which is unsurprising given it is by far the largest area of the WRZs in the UU supply area and contains the North West's main urban centres.

Table 2-4 Key WRZ Data for UU 2025/26[60]

WRZ *Note: Numbers may not sum due to rounding*	Barepot WRZ	Carlisle WRZ	North Eden WRZ	Strategic WRZ	Region Total
Water available for use (own water sources) (Ml/d)	34.1	33.3	9.1	1727.7	1804.2
Water demand	26.9	29.3	5.8	1711.8	1773.8

This data shows that significantly less than half of all water abstracted in the North West is accounted for by public water supply, with the majority contributing towards electricity supply and other industries.

Leakage

Leakage levels are affected by a number of factors, including the length, age and condition of the water mains network, as well as weather conditions. Between 2019/20 and 2020/21, overall leakage in the UU operational area reduced by 15.1 Ml/d to 424 Ml/d, below the target of 443.5 Ml/d, for the 15th consecutive year. However, leakage varies between the WRZs, reflecting the length of the network, the age and condition of pipes, and

[54] www.unitedutilities.com/corporate/about-us

[55] United Utilities 2024 Water Supply and Wastewater Paper Available at https://www.unitedutilities.com/corporate/about-us/what-we-do/water-supply-and-wastewater/ [Accessed May 2024]

[56] United Utilities Draft Water Resources Management Plan 2024 Demand for water Technical Report. Available at https://www.unitedutilities.com/globalassets/z_corporate-site/about-us-pdfs/wrmp24-drafts/draft-wrmp24-technical-report---demand-for-water.pdf [Accessed May 2024]

[57] United Utilities (2023) Environment performance Available at https://www.unitedutilities.com/corporate/responsibility/environment/environment-performance/ [Accessed June 2024]

[58] United Utilities 2022 Annual Water Resource Review April 2021 – March 2022. Available at https://www.unitedutilities.com/globalassets/documents/pdf/annual-review-of-water-resources-management-plan-2021-22-web-accessible.pdf [Accessed May 2024]

[59] United Utilities 2022 United Utilities 2022/23 Annual Performance Report. Available at https://www.unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2022-23 [Accessed May 2024]

[60] United Utilities (2024) Final Water Resources Management Plan 2024. Available at https://www.unitedutilities.com/corporate/about-us/our-future-plans/water-resources/developing-our-water-resources-management-plan/ [Accessed April 2025]

the volume of water supplied through the network. Despite this, there was a decrease in leakage in all WRZs except for the Carlisle Resource Zone compared to the previous year.

Resource Use and Waste

The North West is a major producer and consumer of energy. Total energy consumption in the region during 2021 was just over 13,900 kilotonnes of oil equivalent (ktoe) (see **Table 2-5**), approximately 11.4% of the total UK figure of 122,450 ktoe[61].

Table 2-5: 2021 North West total final energy consumption (ktoe) [61]

	Coal	Manufactured fuels	Petroleum	Gas	Electricity	Bioenergy and waste	All fuels
North West	80.5	253.6	4,885.0	5,606.8	2,469.5	609.0	13,904.4
UK	1,339.0	1,983.5	47,450.7	43,132.0	23,078.4	5,466.3	122,449.9

Table 2-6 demonstrates that the proportion of the region's energy consumption used for industry and commercial use is slightly above the UK average. On the other hand, domestic and transport energy use is below the average for the UK. Energy consumption by type is consistent with national trends, with most energy coming from natural gas (40.3%) and petroleum (35.1%). Renewable energy is a burgeoning field in the region. The North West is the leading region, which already has all the elements required to deliver a net zero carbon industrial cluster by 2040 – including renewables, hydrogen, Carbon Capture Utilisation & Storage (CCUS), nuclear and smart grids, offering opportunities for a multi-vector energy system that can drive clean growth. Net Zero North West has developed a North West Cluster Plan, an industry-led cluster acting as a public and private sector investment accelerator for industrial decarbonisation in the region [62].

Table 2-6: North West energy demand by sector[63]

Energy demand by sector	North West	UK
Industry and Commercial	39.7%	37.6%
Domestic	32.8 %	33.1%
Transport	27.4%	29.3%

During 2022/23, 3.39 million tonnes of waste (from all sources) was produced in the North West, which comprises 13.8% of England's total waste. Figures produced by Defra from 2022/2023 show that the total amount of household waste collected by local authorities has reduced by 8.3% between 2021/22 and 2022/23 to 9,220 thousand tonnes of waste per year. The same study also indicated that rates of recycling across the region have risen significantly from 7.4% in 2000/1 to 45.0% in 2022/23. Furthermore, the amount of municipal waste sent to landfill has fallen from 90% to 9.6% over the same period[64].

The process of water abstraction, treatment and distribution consumes significant resources, both directly using resources such as chemicals to control water quality and indirectly through the requirement for energy for pumping and treatment.

Housing

[61] Department for Business, Energy & Industrial Strategy (2024) Sub-national total final energy consumption. Available at https://www.data.gov.uk/dataset/4b7b7f64-0b97-4a6e-8e45-1218b9a81876/sub-national-total-final-energy-consumption [Accessed May 2024]

[62] Net Zero North West (2023) North West Cluster Pan Available at https://api.netzeronw.co.uk/uploads/NZNW_Cluster_Plan_Y2_Summary_FINAL_fcba0b7233.pdf [Accessed May 2024]

[63] Department for Energy Security and Net Zero (2024) Sub-national total final energy consumption Available at https://www.data.gov.uk/dataset/4b7b7f64-0b97-4a6e-8e45-1218b9a81876/sub-national-total-final-energy-consumption [Accessed May 2024]

[64] GOV.UK Statistics on waste managed by local authorities in England. Available at https://www.gov.uk/government/statistics/local-authority-collected-waste-management-annual-results [Accessed May 2024]

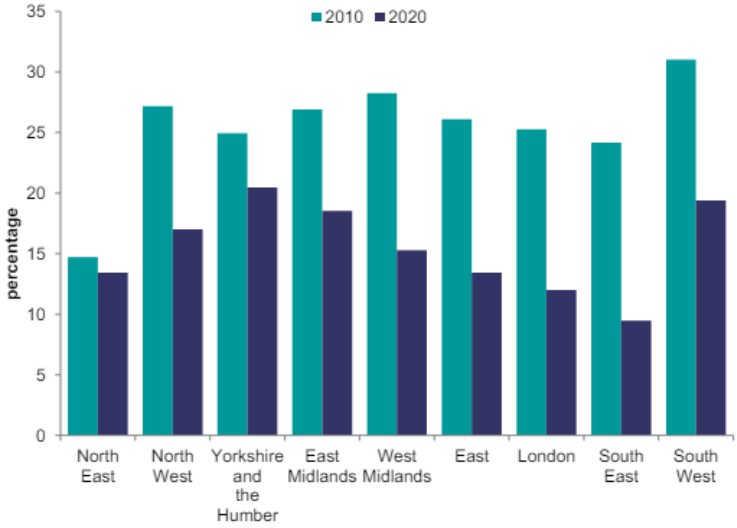
In 2021, there were 3.36 million dwellings in the North West, which represents 13.5% of England's housing stock (**Table 2-7**)[65]. The Regional Spatial Strategy[66] for the North West projects an annual increase in dwellings of 22,844 until 2021. This projection is based upon providing sufficient dwellings to meet local needs as well as allowing for economic growth and regeneration, particularly in urban areas.

Table 2-7: Dwelling occupancy in the North West and England[65]

Area Name	Total: All dwellings (excluding communal establishments)	Total: Occupied dwellings	Occupied, unshared dwellings	Occupied, shared dwellings	Unoccupied dwellings
North West	3,358,810	3,152,370	3,151,900	465	206,440
England	24,927,590	23,420,490	23,414,220	6,265	1,507,100

There have been regional disparities in the proportion of non-decent homes over time. In 2020, 17% of homes in the North West were to fall below the Decent Homes Standard, an improvement from 2010 (see **Figure 2-3**). Despite this progress, the region still has a relatively high prevalence of non-decent homes, particularly among owner-occupied homes without a mortgage. According to the 2021 English housing survey, the housing stock was generally older; older homes tended to be less well-insulated and had a higher prevalence of disrepair and Category 1 hazards[67].

Figure 2-3: Proportion of occupied non-decent homes by region, 2010 and 2020



Base: all occupied dwellings
Note: underlying data are presented in Annex Table 1.1
Source: English Housing Survey, dwelling sample

2.3.6.2 Future Baseline

There are many factors to be considered when predicting future water demand. Population growth and changes in household size will mean that more houses are needed in areas where abstraction is not currently sustainable. Climate change is expected to exacerbate the situation further, as rising temperatures and greater seasonal variation in precipitation are likely to alter the public demand for water[68]. It is projected that the UK

[65] Office for National Statistics (2023) Number of dwellings by housing characteristics in England and Wales Available at https://www.ons.gov.uk/peoplepopulationandcommunity/housing/datasets/numberofdwellingsbyhousingcharacteristicsinenglandandwales [Accessed May 2024]

[66] Government Office for the North West (2008), The North West of England Plan Regional Spatial Strategy to 2021

[67] Department of Levelling Up, Housing and Communities (2020) English Housing Survey: Housing quality and condition, 2020 Available at https://assets.publishing.service.gov.uk/media/62c55823d3bf7f3007abeb23/EHS_Housing_quality_and_condition_report_2020.pdf [Accessed May 2024]

[68] POST (Parliamentary Office of Science and Technology). 2021. POSTbrief 40, Water supply resilience and climate change. UK Parliament

will need an additional 5 billion litres a day by 2050 relative to current levels to support a growing population, the economy, food production, and protect the environment [69].

Water Resources West predict that by 2050, despite ambitious demand policies that would be implemented, the region will need an additional 221 Ml/d to meet public water supply needs and 97 Ml/d to meet the needs of other sectors[70].

As described in Section **Error! Reference source not found.**, leakage control is a key priority of UU's WRMP a nd Drought Plan. Leakage detection and repair activities will be enhanced during a period of severe water shortage, as set out in the 2022 Drought Plan. The predicted future baseline for leakage control is outlined in UU's WRMP 2024, with UU proposing leakage reductions of 20% by 2025 and just over 40% by 2045.

UU has more than halved leakage over the last 25 years, and the company met its performance commitment for leakage for 2020/21, which was to maintain leakage below the target of 443.5 Ml/d.

Energy demand in the region has increased significantly in recent years and is expected to continue to rise in the future. The Government has committed to deliver a decarbonised power sector by 2035 and net zero by 2050. In the first quarter of 2023, renewables generated a record 48% of our electricity[71]. Although there have been positive developments in achieving this objective, the 2023 Climate Change Committee to the UK Parliament notes that action is significantly off track in a range of areas such as surface transport, electricity supply, buildings, electricity prices, land use, agriculture and industry[72].

Future waste arisings in North West England, England and Wales are likely to remain relatively stable, as they have done for recent years. There may be a future decoupling between economic growth and waste growth due to regulatory and economic measures and cultural factors and the likely further decline in the industrial/manufacturing sector in this region. UU met its target to divert 95% of waste to beneficial use by 2020. Increased kerbside collection schemes are helping increase recycling rates and reduce levels of landfill across the region.

2.3.6.3 Key Issues

The key sustainability issues 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 minimise current and future demand for water resources through water efficiency measures (including metering);
- The need to continue to actively control leakage to optimise available water;
- The need to continue to encourage more efficient water use by consumers.
- The need to minimise waste arisings, promote reuse, recovery and recycling and minimise the impact of waste on the environment and communities.

2.3.7 Water

2.3.7.1 Baseline

The North West's exposure to westerly maritime air masses and extensive areas of high ground make the region one of the wettest in the UK. However, the large geographical differences across the region result in considerable variation in annual rainfall. For example, higher parts of the Lake District receive 3,200mm of rain each year, while parts of the Eden Valley in Cumbria receive less than 800mm annually[73]. Rainfall patterns combined with sources of demand drive the nature of the water resource system operated by UU. There is a high proportion of upland landscapes within the North West. As a function of this, many of the rivers and streams in the region are short and steep and often flow over impermeable rock, causing significant variations in flow, notably during periods of high rainfall.

UU sources water from both England and Wales. However, Lake Vyrnwy is the only drought option located in Wales within UU's Drought Plan. Whilst UU utilises other sites within Wales, the SEA focuses on the Drought

[69] GOV.UK (2024), Meeting our Water Needs for the Next 25 Years Available at https://environmentagency.blog.gov.uk/2024/03/21/meeting-our-water-needs-for-the-next-25-years/ [Accessed May 2024]

[70] Water Resources West (2025) Final Regional Plan. June 2025. Available at: https://waterresourceswest.co.uk/water-resources-west-final-regional-plan [Accessed March 2026]

[71] GOV.UK (2023) Energy security boost with multi-million backing for renewables Available at https://www.gov.uk/government/news/energy-security-boost-with-multi-million-backing-for-renewables [Accessed May 2024]

[72] Climate Change Committee (2023) Progress in reducing emissions 2023 Report to Parliament Available at https://www.theccc.org.uk/publication/2023-progress-report-to-parliament/ [Accessed May 2024]

[73] Met Office (2016) North West England & Isle of Man: Climate. Available at: http://www.metoffice.gov.uk/climate/uk/regionalclimates/nw [Accessed August 2024].

Plan and the drought options contained therein. Thus, the issue of UU's wider operations in Wales is considered a water resources issue rather than a concern for drought planning specifically.

Water Availability

Water abstraction can impact hydrologically sensitive nationally and internationally designated sites and/ or influence wider biodiversity. Water abstraction can also have a bearing on the landscape in terms of visual amenity, particularly in landscapes designated as National Landscapes (formerly Areas of Outstanding National Beauty) or that form part of a National Park. The River Dee, Lake Vyrnwy, and other freshwater-dependent habitats in North East Wales are of importance for biodiversity, and it is noted that many of these habitats are designated sites for nature conservation on an international or national basis.

In 2018, 1.4 billion m^3 were abstracted from non-tidal surface waters alone, and 3.81 billion m^3 of water were abstracted from all surface and groundwaters in the North West Environment Agency Region per day[74]. Around 85% of the region's water supply is abstracted from rivers or collected and stored in upland reservoirs[75] (UU's water supply system is described in **Section 1.3**, and water use is summarised in **Section** Error! Reference s ource not found.). 15% of public water supply in the North West is provided by groundwater. This source is particularly valuable during times of surface water shortages and, as such, is a key resource to the region[76].

The Environment Agency and Natural Resources Wales have produced a series of Abstraction Licensing Strategies (ALS) (the CAMS process) for the North West and other areas from which water is sourced to supply the UU area (e.g., those sources in Wales). These ALS set out how water resources will be managed in each catchment and provide information on how existing abstraction licences are managed and the availability of water for further abstraction. Within each ALS, the river flows, and groundwater levels are monitored at Assessment Points (significant points on rivers) and assessed alongside the amount of water which has been abstracted on average over the previous six years and the situation if all abstraction licences were used to full capacity. This data is used to determine the water availability for each water body. Water availability falls into the following categories:

Water available for licensing: 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 for licensing: 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, and restrictions may be in place. Trading from an existing licence holder can occur.

Water not available for licensing: Water body flows are below the indicative flow requirement to help support Good Ecological Status (as required by the WFD Regulations). No further consumptive licences will be granted. Trading from an existing licence holder can occur.

The most up-to-date ALS for the various areas within the study area are available online[77].

Water availability is essential for the low-carbon transition, particularly in the North West of England and North Wales, where the HyNet project, a major decarbonisation initiative, relies heavily on water for hydrogen production and carbon capture and storage (CCS)[78]. While the North West is not formally classified as a water-stressed region, water availability remains a potential concern, especially during prolonged dry periods. These conditions could affect the reliability of supply and, in turn, impact the pace and resilience of the region's transition to a low-carbon economy.

Flood Risk

Parts of the area supplied by UU are prone to flooding. Much of the coastal area is at risk of tidal flooding, particularly low-lying land adjacent to the major estuaries in the region, including the Solway Firth, the rivers entering Morecambe Bay, the Ribble, the Mersey and the Dee.

[74] GOV.UK (2019) Water abstraction statistics: England, 2000 to 2018 Available at https://assets.publishing.service.gov.uk/media/62c94abd8fa8f54e8bf2fd09/Water_abstraction_statistics_England_2000_to_2018.ods [Accessed May 2024]

[75] Defra, North West England Rural Development Plan

[76] British Geological Survey (2015), www.bgs.ac.uk/research/groundwater/waterresources/GroundwaterInUK

[77] Environment Agency (various) Abstraction licensing strategies (CAMS process). Available at https://www.gov.uk/government/collections/water-abstraction-licensing-strategies-cams-process [Accessed August 2024]

[78] Environment Agency (2025) Environmental Capacity in Industrial Clusters Phase 4: Air Quality in HyNet Available at https://assets.publishing.service.gov.uk/media/67f688b532b0da5c2a09e264/environmental-capacity-in-industrial-clusters-phase-4.pdf#:~:text=Phase%202%20(2022%2D2023)%20expanded%20the%20focus%20to,water%20quality%20in%20the%20Teesside%20industrial%20cluster.&text=The%20HyNet%20industrial%20cluster%20is%20a%20significant,storage%20(CCS)%20and%20industrial%20emission%20reduction%20strategies. [Accessed April 2025]

Research conducted by the Environment Agency in 2022 identified that throughout the North West, more than 35,000 people are estimated to live in areas at high risk of flooding from surface water. Thirty-one thousand people are also estimated to live in areas at high risk of flooding from rivers and the sea. The North West has many reservoirs, predominantly used for water supply and operators such as UU. The flood risk from the reservoir map[79] shows the extent, depth and speed of flooding that could affect over 300,000 people in the North West River Basin District.

Water Quality

Throughout the North West, there have been recent improvements in the quality of river waters. A particularly notable case is the River Mersey, which is now able to support fish stocks throughout its course for the first time in a number of years. The Water Framework Directive Regulations (WFD Regulations) provide a framework for managing the water environment in England. Under the WFD Regulations, a river basin management plan (RBMP) must be prepared for each river basin district (RBD) and include a summary of the programmes of measures required to achieve those objectives. The ecological standard of rivers, according to the Environment Agency classification status published in RBMPs (2022)[80], is shown in **Table 2-8**, which shows that the overall ecological status for the North West region is above national averages compared to other river basin districts. The RBMP data also suggests that the groundwater status in the North West is comparable to England.

Table 2-8: Summary statistics data per River Basin District[81]

River Water Quality	North West	England	Dee River Basin District	Severn River Basin District
% of water bodies at good or better ecological status/potential	22%	16%	10%	9%
% of water bodies at good chemical status	0%	0%	0%	0%
% of water bodies at good chemical (GW) status	44%	45%	0%	64%
% of water bodies at good quantitative status	72%	73%	100%	73%

Reasons for not achieving good (RNAG) and reasons for deterioration (RFD) record the source, activity and sector involved in causing an element to be at less than good status. Pollution from rural areas is the reason with the greatest number of individual counts of the reasons for not achieving good status, followed by physical modifications and pollution from wastewater.

The 2018 mandatory results for bathing waters in the UK are presented in **Table 2-9** below.

Table 2-9: Mandatory Compliance Results for Bathing Waters in the UK

	North West			England			Wales		
	Pass	Fail	Compliance	Pass	Fail	Compliance	Pass	Fail	Compliance
Bathing Waters	29	1	**96.7%**	411	9	**97.9%**	104	0	**100%**

Source: Environment Agency (2018) Bathing Water Classifications; Natural Resources Wales (2018) Wales Bathing Water Report

2.3.7.2 Future Baseline

The quality of water in rivers and seas in the region has been gradually improving over recent years. With current targets and measures in place, this trend is expected to continue.

[79] GOV.UK (2024) Check the long-term flood risk for an area in England. Available at https://www.gov.uk/check-long-term-flood-risk [Accessed May 2024]

[80] Environment Agency (2022) River Basin Management Plans: updated 2022

[81] Environment Agency: Catchment Data Explorer. Available at https://environment.data.gov.uk/catchment-planning/v/c3-plan [Accessed August 2024]

As part of the 2022 update to the RBMPs, the Environment Agency consulted on the most important challenges to the current and potential future uses of the water environment. The results are summarised in the Challenges for the Water Environment document[82]. The challenges described in the document include:

- Climate emergency
- Biodiversity crisis
- Physical modifications
- Pollution from agriculture and rural areas
- Pollution from water industry wastewater
- Invasive non-native species
- Pollution from towns, cities and transport
- Changes to water levels and flows
- Chemicals in the water environment
- Pollution from abandoned mines

Plastics pollution.

UKCP[83] has found that climate change trends projected over UK land for the 21st century are broadly consistent with earlier projections showing an increased chance of milder, wetter winters and hotter, drier summers, along with an increase in the frequency and intensity of extremes. This will increase the incidence rate of storms and flooding. Climate change may also contribute to shifts in the frequency and duration of intense storms during the summer months, resulting in more regular and widespread flash flooding from overburdened drainage systems and rivers.

The State of Natural Resources Report (SoNaRR) for Wales[84] highlights that climate change may affect groundwater recharge in Wales and that by 2025, it is likely that groundwater recharge will decrease, resulting in decreased dry weather river flows and a general lowering of groundwater levels. This may have impacts on base flow to rivers and wetlands in dry periods and affect small domestic and agricultural water supplies.

Climate change may also result in alterations to the frequency and duration of drought events, which could have knock-on effects on biodiversity. This could occur either directly or through cumulative impacts, for example, reduced dilution in areas of poor water quality.

2.3.7.3 Key Issues

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

- The need to further improve the quality of the region's river, estuarine and coastal waters, taking into account WFD/RBMP objectives.
- The need to maintain the quantity and quality of groundwater resources, taking into account WFD/RBMP objectives.
- The need to improve the resilience, flexibility and sustainability of water resources in the region, particularly in light of potential climate change impacts on surface water and groundwaters.
- The need to address increased pressures on public water supply.
- The need to ensure sustainable abstraction to protect the water environment and meet society's needs for a resilient water supply.
- The need to ensure that people understand the value of water.
- The need to ensure reliable water supplies for critical low-carbon infrastructure during periods of drought without compromising environmental flows or public water supply.

[82] Environment Agency (2022) River basin management plans, updated 2022: challenges for the water environment. Available at https://www.gov.uk/government/publications/river-basin-management-plans-updated-2022-challenges-for-the-water-environment/river-basin-management-plans-updated-2022-challenges-for-the-water-environment [Accessed August 2024]

[83] UKCP18 website. UK Climate projections (2022) Headline findings, August 2022. Available at: https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18_headline_findings_v4_aug22.pdf [Accessed August 2024].

[84] Natural Resources Wales (2025) State of Natural Resources Report for Wales 2025 (SoNaRR2025). Available at https://naturalresources.wales/evidence-and-data/research-and-reports/state-of-natural-resources-report-2025/sonarr-2025-foreword-and-summary/?lang=en [Accessed March 2026]

Flooding is not viewed as a key issue for the SEA water topic in relation to the Drought Plan because none of the drought management measures are likely to involve the construction of permanent physical infrastructure within areas at risk of flooding or contribute to an increase in flood risk.

2.3.8 Soil, Geology and Land Use

2.3.8.1 Baseline

Geology

There is great diversity in the composition of the geology across the region. The majority of the lowland Cheshire plains, Merseyside and western Lancashire are dominated largely by Triassic mudstone and sandstone. The uplands of Cumbria are partly made up of volcanic igneous rock from the Devonian period. Moving eastwards towards the Yorkshire Dales, the geology becomes dominated by distinctive carboniferous limestone, and south into Lancashire, millstone grit and coal become abundant. The northeastern area of Wales is also made up of significant areas of carboniferous limestone. The River Dee catchment area consists of ancient Pre-Cambrian metamorphosed sediments of the Moine series and, to the west, the Dalradian series brings mixed acid-basic soils with some limestone (3-4% of Wales is predominantly acid blanket peat). The variety of underlying geology in the region is reflected in the region's soils, the agricultural value of which varies across the region. There are small areas of raised bog scattered in lowland areas. The Permo-Triassic sandstone forms an important groundwater resource in North Wales, whilst peat, sand and gravel deposits along river valleys support strategic local water supplies.

Within the North West region, there are 203 Geological Conservation Review (GCR) Sites, i.e., sites that are often SSSIs and selected on the basis of their national and international importance. Information obtained from Natural England indicates that UK-wide, 86% of SSSIs designated for one or more geodiversity features are in favourable or unfavourable recovering condition[85]. Within Wales, there are 452 GCR Sites[86].

Soils and Land Use

The North West is predominantly rural, with four-fifths of land in the region used for agriculture[87]. The North West contributes 15% of the UK's food production industry[88]. Of the agricultural land in the North West, the majority is designated as permanent pasture that is more than 5 years old. Arable farming is confined mostly to the Lancashire Plain and Mersey Basin. Throughout the uplands of the region, livestock farming is the major agricultural use and involves extensive grazing of semi-natural vegetation.

The Agricultural Land Classification System developed by Defra provides a method for assessing the quality of farmland, principally for use in planning. The system divides the quality of land into five categories, as well as non-agricultural and urban, as shown in **Figure 2-4.** The 'best and most versatile land' is generally defined as the agricultural land which falls into Grades 1, 2 and 3a. The quality of the agricultural land in the region is ranked significantly below the national average, with 44.7% of land classed as 'Poor' or 'Very Poor', compared to a national average of 22.5%. The poor agricultural land is indicative of the upland area, which generally has low agricultural quality due to exposure and poor soil cover. These results are similar in areas of North Wales (data for Wales is available from the Welsh Government[89]). There is also an above-average proportion of urban land in the North West.

The region has a generally lower-than-average tree coverage[90] at approximately 6% of the total land area. However, the North West does have the largest area of community forest in England, comprising the Mersey and Red Rose Forests.

In Wales's upland areas, where ALC grades tend to be lower, significant amounts of carbon are stored in peat and organo-mineral soils. Organo-mineral soils make up around 17% of Welsh soils and act as a major carbon reservoir, holding about 18% of the country's total soil carbon, roughly 74.5 million tonnes at depths greater

[85] Natural England (2015) Natural England Access to Evidence Information Note EIN007: Summary of evidence: Geodiversity Available at: http://publications.naturalengland.org.uk/publication/5005683512573952 [Accessed July 2022]

[86] JNCC (2019) Geological Conservation Review (GCR) csv extract of the GCR database (part) 2019 Available at https://hub.jncc.gov.uk/assets/b0f53582-f93d-4e70-8ff9-0f16b660e4ad [Accessed July 2022]

[87] Natural England (2011) State of the natural environment in the North West. Available at: https://publications.naturalengland.org.uk/publication/30044 [Accessed August 2024]

[88] National Farmers Union (undated) Farming's Northern Powerhouse. Available at https://www.nfuonline.com/media/5w1mom4b/farming-s-northern-powerhouse.pdf [Accessed May 2024]

[89] Welsh Government (2022) Agricultural land classification: predictive map. Available at: https://www.gov.wales/agricultural-land-classification-predictive-map [Accessed August 2024]

[90] OCSI Tree cover, green space inequalities and deprivation in England. Available at https://ocsi.uk/2023/04/12/tree-cover-green-space-inequalities-and-deprivation-in-england/#:~:text=Northwest%20and%20Northeast%20regions%20show%20low%20tree%20coverage&text=Approximately%204%2C000%20neighbourhoods%20have%20less,are%20located%20in%20urban%20neighbourhoods. [Accessed May 2024]

than 1 metre. Over half of the carbon in these soils is thought to be stored within the top 15 cm, making it particularly vulnerable to environmental changes and land management practices[91].

Nearly all (92%) of England's upland peatlands are located in the north of the country, storing an estimated 400 million tonnes of carbon. When in good condition, these peatlands act as vital carbon sinks, sequestering carbon and playing a key role in addressing the climate crisis. However, when degraded, they become significant carbon sources, releasing stored carbon into the atmosphere and exacerbating climate change[92]. Peat habitats in Wales have been adversely impacted by climate change, land use practices, and air pollution. These pressures have led to the drying and oxidation of peatlands, shifting them from carbon sinks to carbon sources. Currently, most of Wales's peatlands are in poor condition, which significantly reduces their ability to help combat climate change and deliver the valuable regulatory ecosystem services they are capable of when healthy[93]. Lake Vyrnwy in North Wales is a significant area for peat habitats, specifically blanket bogs. The area reportedly contains a large volume of peat, making it a crucial carbon store. The area plays a key role in regulating climate by locking away carbon that would otherwise contribute to greenhouse gas emissions. Protecting these peatlands is essential for enhancing carbon sequestration and building climate resilience[94].

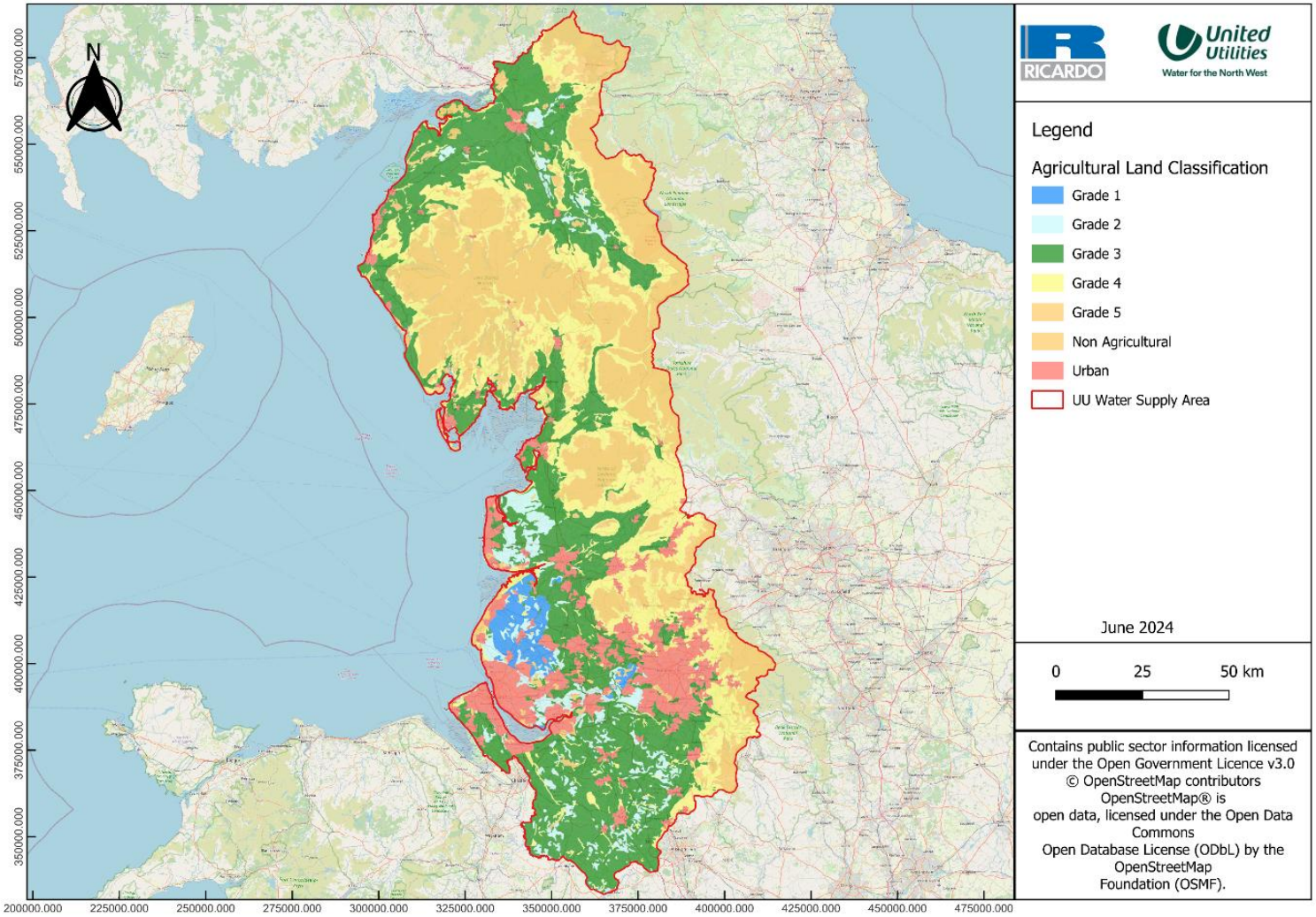
[91] Welsh Government (2022) *Welsh Soil Evidence Review* Available online https://www.gov.wales/sites/default/files/publications/2022-08/review-welsh-soil-evidence_0.pdf [Accessed October 2024]

[92] Cumbria Wildlife Trust (2022) North West net zero ambitions boosted thanks to peatland partnership available at https://www.cumbriawildlifetrust.org.uk/news/north-west-net-zero-ambitions-boosted-thanks-peatland-partnership#:~:text=Nearly%20all%20(92%20per%20cent,atmosphere%2C%20contributing%20to%20climate%20change. [Accessed April 2025]

[93] NRW (2020) *The Second State of Natural Resources Report (SoNaRR2020): Assessment of the achievement of sustainable management of natural resources: Land use and soils*. Technical Report. Natural Resources Wales. Available online: https://naturalresourceswales.gov.uk/a-to-z?lang=en&letter=s [Accessed April 2025]

[94] Royal Society for Protection of Birds (2025) Making Lake Vyrnwy even better for nature Available online https://www.rspb.org.uk/about-us/annual-report/making-lake-vyrnwy-better-for-nature [Accessed April 2025]

Figure 2-4: Agricultural Land Classification for the North West Region[95]



[95] Natural England (2010) Agricultural Land Classification map North West Region (ALC002) Available at https://publications.naturalengland.org.uk/publication/144015 [Accessed May 2024]

2.3.8.2 Future Baseline

The vision of Defra's Soils Strategy for England[96] is for all of England's soils to be managed sustainably and for degradation threats to be tackled successfully by 2030, as well as having 70% of agricultural land in an agri-environment scheme by 2030[97]. This strategy will improve the quality of England's soils and safeguard their ability to provide essential services for future generations. The new Government white paper for water 'A new vision for water'[98]', outlines the Government's plans to reform approaches to agricultural management practices to improve water efficiency and tackle agricultural pollution.

There are several Environmentally Sensitive Areas (ESAs) in the region, including the Lake District and parts of the North Peak, the South West Peak and the Pennine Dales. Various schemes have been designed to protect and enhance the environment by offering payments to landowners and occupiers in these areas to adopt environmentally beneficial agricultural practices[99]. Currently, the Environmental Stewardship Scheme is being implemented with the aim of securing widespread environmental benefits[100]. Continued development of this scheme is expected to see an improvement in land use in the future.

The National Policy Planning Framework (NPPF) aims to encourage the effective use of land by reusing land that has been previously developed (brownfield), provided that it is not of high environmental value. The NPPF also places great importance with respect to the Green Belt policy, the aim of which is to prevent urban sprawl by keeping land permanently open. The North West is a brownfield hotspot with 165,919 plots showing potential for housing capacity[101].

Water stress in trees as a result of drought can lead to reduced tree growth, crown dieback and tree mortality, along with secondary impacts such as wildfire, pest and disease outbreaks. Projected climate change impacts include an increase in the frequency of extreme drought events; therefore, it is important that the risk on trees is assessed, and adaptation measures are put in place. There is ongoing research and monitoring to understand better the risks and impacts of drought on different tree species, provenances and sites. Adaptation measures may include increasing tree species diversity, creating mixed species stands, using natural regeneration and implementing establishment and management practices.

2.3.8.3 Key Issues

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

- The need to protect and avoid damage to geodiversity and conserve and enhance sites designated for geological interest (including geological SSSIs);
- The need to conserve and enhance soil quality and function (including peatlands and carbon sequestration) as well as maintain existing carbon stores and increase them where appropriate;
- The need to influence how land is managed, promoting sustainable patterns of land use, including the use of previously developed land and minimising the requirements for best and most versatile land;
- The need to manage the land more holistically at the catchment level, benefitting landowners, other stakeholders, the environment and the sustainability of natural resources (including water resources).

[96] Defra (2009) Safeguarding our Soils: A Strategy for England

[97] Defra 2022 Environmental land management schemes: outcomes. Available at https://www.gov.uk/government/publications/environmental-land-management-schemes-outcomes/environmental-land-management-schemes-outcomes#:~:text=These%20schemes%20will%2C%20alongside%20food,mitigation%20and%20access%20and%20heritage. [Accessed May 2024]

[98] Defra (2026) A new vision for water: white paper, 19 February 2026. Available at: https://www.gov.uk/government/publications/a-new-vision-for-water-white-paper/a-new-vision-for-water [Accessed March 2026]

[99] Defra (2022), United Kingdom - Rural Development Programme (Regional) – England. Available at https://assets.publishing.service.gov.uk/media/63369ebee90e0772e400e682/United_Kingdom_-_Rural_Development_Programme_England.pdf [Accessed May 2024]

[100] Defra (2024) Guidance Agreement holders' information: Environmental Stewardship. Available at https://www.gov.uk/guidance/environmental-stewardship [Accessed May 2024]

[101] The Countryside Charity 2022 State of Brownfield 2022. Available at https://www.cpre.org.uk/wp-content/uploads/2022/12/State-of-Brownfield-2022-FINAL-FORMATTED-15-12-2022.pdf [Accessed May 2024]

2.3.9 Air and Climate

2.3.9.1 Baseline

Clean air is a crucial natural resource for maintaining human health, conserving the environment, and sustaining economic growth. Pollutants released into the air can damage human health, including respiratory and lung problems. It can also harm the environment by disrupting ecosystems and destroying flora when concentrations exceed certain thresholds. In this sense, air quality refers to the amount of pollutants released into the atmosphere and the potential for negative consequences on both the environment and human health.

Drought management measures may involve the operation of abstraction and treatment facilities at a greater level of intensity and/or in locations where such operations do not normally take place, with the potential for negative effects, although generally only in the short term.

Greenhouse gases (GHG), including carbon dioxide (CO_2) emitted from human actions, are a major contributor to climate change. In 2023, total UK emissions were estimated at 384 million tonnes of carbon dioxide equivalent (Mt CO2e), a 52% reduction since 1990[102]. In the North West, there have been significant reductions in CO_2 emissions, falling from 71,557 kilotonnes of CO_2 equivalent ($ktCO_2e$) in 2005 to 44,047 $ktCO_2e$ in 2021, a 38% reduction. Of these emissions, it is estimated that 27.6% came from industrial and commercial premises, 24.7% from domestic sources, 27.4% from road transport and 10.4% from agriculture[103]. Across Wales, CO_2 emissions have also reduced substantially from 50,707 kt CO2e in 2005 to 35,688 kt CO2e in 2022[104]. This reduction is primarily attributed to improvements in the efficiency of energy generation and consumption, which have played a key role in lowering the overall carbon footprint of the region[105]. In Powys, the local authority area surrounding Lake Vyrnwy, there has been a 61% per capita reduction in CO_2 emissions between 2005 and 2020[106].

Air quality in the North West has improved in recent years, with emissions from industrial sites and processes and from agriculture being controlled effectively. There are eight key industrial pollutants which are monitored on regulated premises. Of these, seven have shown some significant reductions, and only carbon monoxide levels have increased. In 2020, air pollution from man-made fine particulate matter was 6.1µg/m3 in the North West, compared to 6.9µg/m3 throughout England. The North West has consistently had a lower concentration of fine particle matter than England. In 2020, rural areas such as Cumbria (4.0 µg/m3), Cheshire West and Chester (5.4 µg/m3), Lancashire (5.5 µg/m3), and Cheshire East (5.6 µg/m3) had lower mean fine particle matter concentrations compared to metropolitan areas like Liverpool (7.3 µg/m3) and Manchester (7.0 µg/m3) [107]. The region's air quality is now most significantly affected by the increasing amount of traffic. Between 1993 and 2023, the North West has seen a 25% increase in motor vehicle traffic[108], which causes some local air pollution issues, particularly in urban areas and at peak times. Nationally, transport was the main contributor to GHG emissions, producing 26% of the UK's total emissions in 2021 (427 $MtCO_2e$), with road traffic responsible for (100 MtCO2e)[109].
It should be noted that air quality issues in both the North West and Wales are not solely attributable to industrial sources and traffic; agricultural activities also play a significant role. In particular, ammonia and other

[102] Office for National Statistics (2024) Measuring UK greenhouse gas emissions Available at https://www.ons.gov.uk/economy/environmentalaccounts/methodologies/measuringukgreenhousegasemissions [Accessed May 2024]

[103] Department for Energy and Net Zero (2023) 2005 to 2017 UK local authority and regional greenhouse gas emissions national statistics, 2005 to 2021 Available at https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-national-statistics-2005-to-2021 [Accessed May 2024]

[104] Welsh Government (2024) Emissions of Greenhouse Gases by Year. Available at https://statswales.gov.wales/Catalogue/Environment-and-Countryside/Greenhouse-Gas/emissionsofgreenhousegases-by-year [Accessed December 2024]

[105] Welsh Government (2024) Wellbeing of Wales, 2024 Available at https://gov.wales/wellbeing-wales-2024-globally-responsible-wales-html [Accessed December 2024]

[106] Powys County Council (2022) Wellbeing Information Bank: View information about carbon dioxide emissions Available at https://en.powys.gov.uk/article/11136/Wellbeing-Information-Bank-View-information-about-carbon-dioxide-emissions [Accessed May 2024]

[107] Office of Health Improvement and Disparities (2021) Health Profile for the North West of England 2021 Available at https://fingertips.phe.org.uk/static-reports/health-profile-for-england/regional-profile-north_west.html#air-pollution [Accessed May 2024]

[108] Department for Transport (2024), Road Traffic Statistics Available at https://www.gov.uk/government/collections/road-traffic-statistics [Accessed May 2024]

[109] Department for Transport (2023) Official Statistics Transport and environment statistics: 2023 Available at https://www.gov.uk/government/statistics/transport-and-environment-statistics-2023/transport-and-environment-statistics-2023#:~:text=transport%20is%20the%20largest%20emitting,fall%20in%202020%20of%2064%25. [Accessed May 2024]

nutrient emissions from agriculture contribute to atmospheric nitrogen deposition, which can damage sensitive habitats and designated conservation sites[110][111].

UU is a large user of energy due to the energy needed to treat and pump water. In 2020, UU made six pledges setting initial priorities to meet the global goal to curb climate change to no more than 1.5^{0}C. In 2022/23, UU's GHG emissions were 133.9 ktCO_2e (compared to 138.9 ktCO2e in 2019/20), a reduction of over 70% since 2010. According to the latest annual report, UU are confident they are meeting their six carbon pledges, including already achieving 100% renewable electricity by 2021[112]. By 2030, UU aims to reduce its greenhouse gas emissions by 42% from its 2020 baseline[113]. Similarly, UU intends to improve air quality, that's to say, nitrogen oxides (NOx) emissions per unit of renewable electricity generated. UU achieved a performance of 1.07 NOx/GWh and is targeting 1.42 NOx/GWh by 2025[114].

2.3.9.2 Future Baseline

The effects of climate change are some of the most significant environmental problems facing the region. The climate in the North West is set to get warmer during the summer and wetter during the winter, with periods of more intense weather events. The UK Climate Projections state that in 2070, average temperatures may increase by 3.8 to 6.8 degrees Celsius, and there could be a 100% reduction in snowfall. Rainfall patterns across the UK are not uniform and vary on seasonal and regional scales and will continue to vary in the future. It is projected that the intensity of summer rainfall events will increase. Sea levels around the UK will continue to rise to 2100, and the extreme weather patterns experienced today could become the norm by 2080[115].

The UK and the Welsh Government are committed to net zero emissions in 2050 and are required to set carbon budgets to set out a trajectory for emissions reductions to 2050. For the UK, the sixth carbon budget has been set at a 78% reduction in emissions between 1990 and 2030. For Wales, the carbon budgets have been set for 37% lower than the baseline over 2021-25 and an average of 58% lower than the baseline for 2026-30.

The 25-year Environmental Plan sets out targets to improve the UK's air quality by reducing emissions of five damaging air pollutants, halving the effects of air pollution on health by 2030, reducing the use of diesel and petrol cars by 2040 and improving industrial emissions through good practice measures[116]. To achieve these ambitions, emissions from vehicles and buildings must be reduced to almost zero, and industrial processes will need to adapt, both significant to UU's operations.

2.3.9.3 Key Issues

The key sustainability issue arising from the baseline assessment for air and climate is:

- The need to minimise emissions of pollutant gases and particulates and enhance air quality arising from the implementation of the Drought Plan.
- The need to mitigate against climate change through the reduction in greenhouse gas emissions in order to contribute to risk reduction over the long term.
- The need to take into account, and where possible adapt to, the potential effects of climate change through sustainable water resource management, water use efficiencies, specific aspects of natural ecosystems (such as connectivity), as well as accommodating potential opportunities afforded by climate change.
- The need to increase environmental resilience to the effects of climate change.

[110] Environment Agency (2018) State of the environment: air quality Available at https://www.gov.uk/government/publications/state-of-the-environment [Accessed April 2025]

[111] Natural Resources Wales (2020) State of Natural Resources Report (SoNaRR) for Wales 2020. SoNaRR2020:Air Quality Available at https://naturalresources.wales/evidence-and-data/research-and-reports/state-of-natural-resources-report-sonarr-for-wales-2020/?lang=en [Accessed April 2025]

[112] United Utilities (2023) Integrated Annual Report 2023. Available at https://www.unitedutilities.com/globalassets/documents/pdf/integrated-annual-report-2023.pdf [Accessed August 2024]

[113] United Utilities (2023) Integrated Annual Report. Available at https://www.unitedutilities.com/globalassets/documents/pdf/integrated-annual-report-2023.pdf [Accessed May 2024]

[114] United Utilities (2023) Environment performance. Available at https://www.unitedutilities.com/corporate/responsibility/environment/environment-performance/ [Accessed June 2024]

[115] Defra, BEIS, Met Office Hadley Centre and Environment Agency (2022) UK Climate Projections: Headline Findings. Available at https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18_headline_findings_v4_aug22.pdf [Accessed May 2024]

[116] Defra (2023) Policy paper -At a glance: summary of targets in our 25-year environment plan. Available at https://www.gov.uk/government/publications/25-year-environment-plan/25-year-environment-plan-our-targets-at-a-glance [Accessed June 2024]

2.3.10 Archaeology and Cultural Heritage

2.3.10.1 Baseline

Implementation of drought management measures could affect historic landscape character and historic structures associated with the water environment and the historical context of their setting. Archaeological remains are sensitive to changes in water quality, water levels, pollution and land-use practices.

The cultural and historical heritage of the region is dominated by its contribution towards the UK's industrial history, largely due to its wealth of natural resources and good connections via sea and inland waters to areas of the UK and other countries. Appreciation of the North West's industrial heritage is marked through the conservation of buildings dating from the Industrial Revolution in the cities of Manchester, Salford and Liverpool.

Conversely, most of the region's ancient historical and archaeological heritage occurs in the more rural areas, which contain important sites such as the St Bees Heritage Coastline and those designated as part of the Frontiers of the Roman Empire UNESCO World Heritage Site (Hadrian's Wall). The North East Wales area is particularly noted for its Iron Age hill forts, especially along the Clwydian Range. The heritage and cultural value of the region's diverse range of landscapes are also deemed of importance, with three National Parks or parts thereof located within the region. The cultural heritage of the North West is recognised internationally through the designation of three UNESCO World Heritage Sites: Hadrian's Wall, The Lake District National Park and the Jodrell Bank Observatory. There is an additional World Heritage Site in North East Wales, Pontcysyllte Aqueduct and Canal.

The UU Supply Area contains, either wholly or overlaps with, the following national and local designations (see **Figure 2-5**, **Figure 2-6**) (there are additional heritage assets across North Wales, including immediately around Lake Vyrnwy):

3 World Heritage Sites;

1,387 Scheduled Monuments;

436 Grade I Listed Buildings;

1,508 Grade II* Listed Buildings;

25,672 Grade II Listed Buildings;

597 Conservation Areas; and

138 Registered Parks and Gardens.

The region's paleoenvironmental deposits also serve as important baseline features. These contain important records of past human activities as well as climate change. Most of this evidence is organic and only survives in favourable conditions. If water levels are reduced, such as through surface water abstraction, these delicate materials are highly susceptible to decay and destruction. Such baseline information is site-specific, and no general trends or regional spatial variability is available.

Historic England collects data on heritage at risk. In 2022, there were 410 assets listed as at risk within the North West, encompassing buildings and structures, places of worship, archaeological sites, parks and gardens and conservation areas[117]. Managing drought risk can have an impact on and improve the historic components of Welsh landscapes and built assets, such as conservation areas, field systems, hedgerows, traditional structures, historical monuments and archaeological sites. The 2025 Environment Improvement Plan intends to protect and preserve the natural beauty of the landscape, as well as improve its environmental value while remaining keen on its heritage[118].

In this context, the protection, preservation and settings of cultural heritage assets need to be considered when locating any new development, including water management infrastructure.

[117] Historic England (2022) Heritage at Risk in the North West Revealed. Available at https://historicengland.org.uk/whats-new/in-your-area/north-west/heritage-at-risk-2022/ [Accessed May 2024]

[118] Defra (2025) Environmental Improvement Plan (EIP) 2025, December 2025. Available at: https://www.gov.uk/government/publications/environmental-improvement-plan-2025 [Accessed March 2026]

Figure 2-5: Cultural Heritage Features in the UU Supply Area

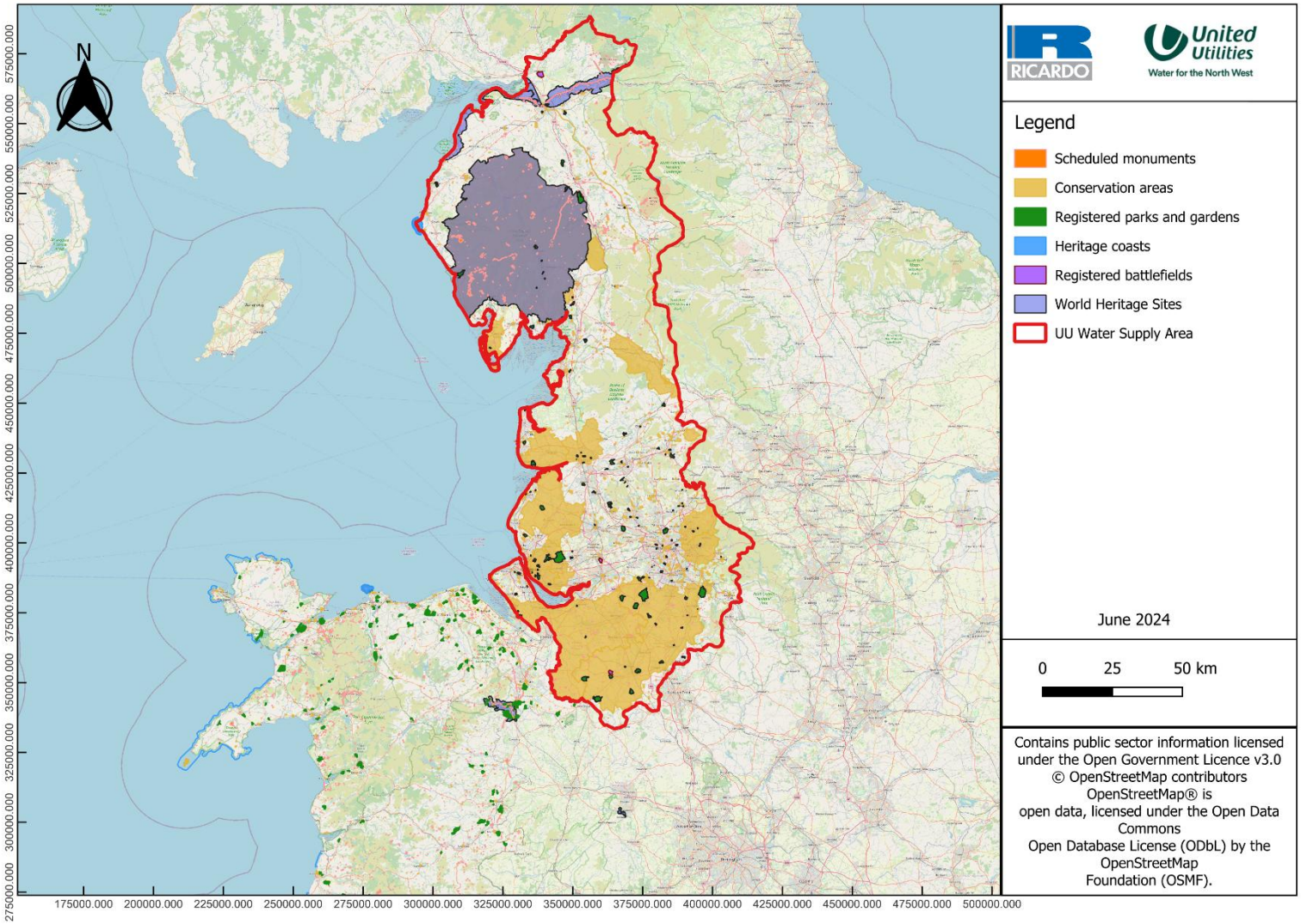
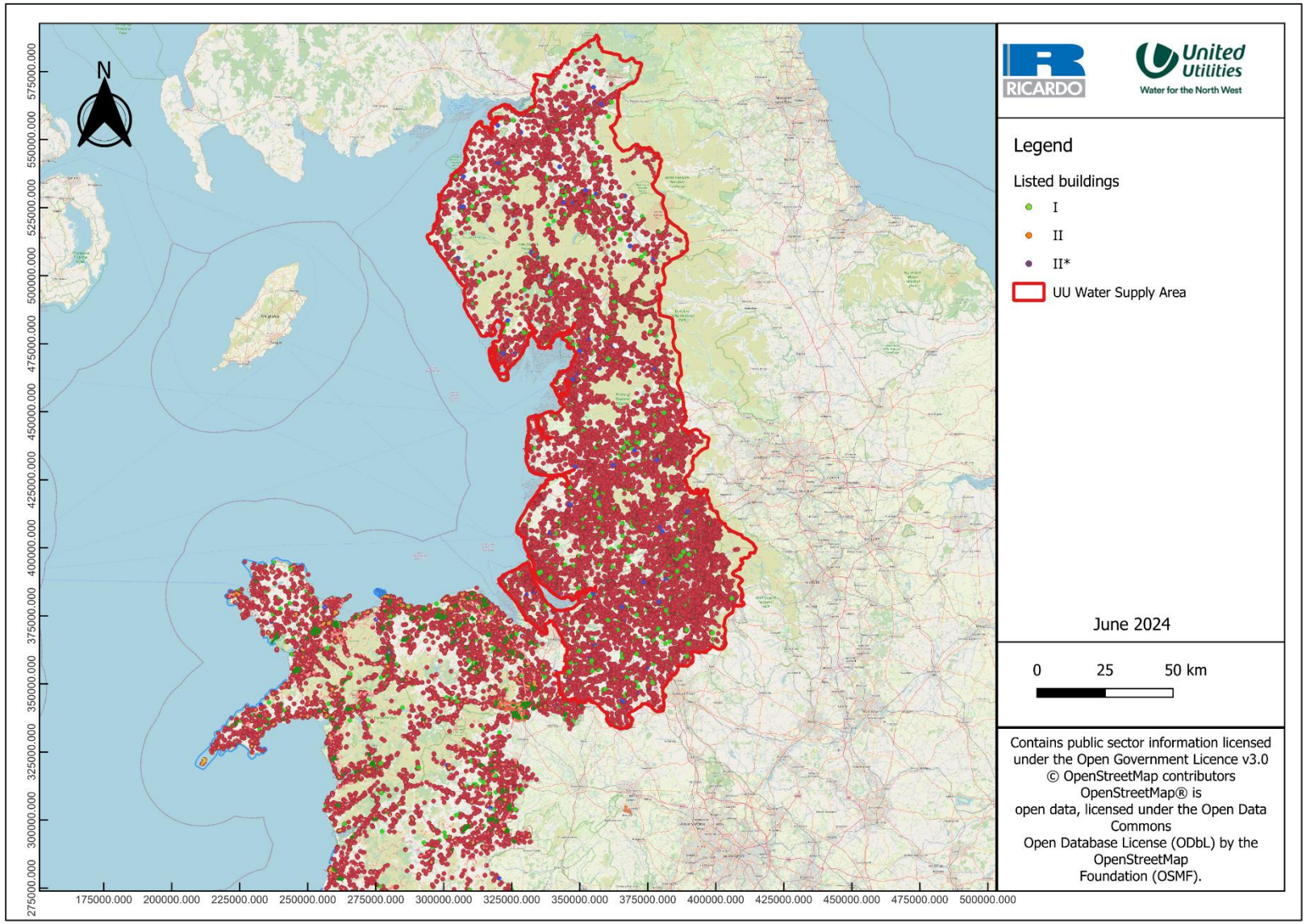


Figure 2-6: Listed Buildings in the UU Supply Area



2.3.10.2 Future Baseline

There are no significant trends relating to archaeology or cultural heritage. Therefore, predicting future changes is extremely difficult. The Rural Development Programme has identified that many of the region's cultural heritage sites are endangered, and there are particular concerns regarding buildings on upland sites.

Development pressures, social pressures, natural and environmental threats, including climate change (including increased flooding), and pressures from resource exploitation and infrastructure continue to threaten the condition of cultural heritage sites and monuments.

2.3.10.3 Key Issues

The key sustainability issues arising from the baseline assessment for archaeology and cultural heritage are:

The need to conserve and enhance the historical significance of buildings, monuments, features, sites, places, areas of archaeological and cultural heritage interest, and their settings, particularly those which are sensitive to the water environment.

The need to conserve and enhance the World Heritage Sites within the Drought Plan area;

The need to protect water-dependent heritage sites during drought conditions, including SSSIs, SACs, SPAs and Local Wildlife Sites (LWS) with potential for paleoenvironmental deposits.

2.3.11 Landscape and Visual Amenity

2.3.11.1 Baseline

The implementation of DP measures has the potential to influence landscape and visual amenity beyond the impacts that would occur as a result of the drought alone.

The landscape of the North West is some of the most diverse in the country, containing many distinct 'Landscape Character Area' types which Natural England has defined. Although the region is generally low-lying, it also contains some of the most striking upland landscapes in England, particularly within the Lake District National Park.

The coastal landscape in the North West contains remnants of the region's industrial history, in particular, the Liverpool and Merseyside Docklands, as well as having protected areas of Heritage Coast. A Heritage Coast is a section of coast exceeding one mile in length that is of exceptionally fine scenic quality, substantially undeveloped and containing features of special significance and interest. Although not statutory, they were established to conserve the best stretches of undeveloped coast in England and are defined by an agreement between Natural England and the relevant maritime local authority. The national distribution of heritage coasts is far from even, and within UU's operating area, there is just 1% of the UK's Heritage Coastline, located around St. Bee's Head. National Parks, National Landscapes (formerly known as Areas of Outstanding Natural Beauty) and Heritage Coastline are shown in **Figure 2-7.**

The North West region contains the Lake District National Park in Cumbria, which is a distinctive combination of upland fells, complex river systems and lakes and contains a large variety of species and habitats. Two other National Parks also fall partly within the region – the Yorkshire Dales and the Peak District. In 2016, the Lake District and the Yorkshire Dales National Parks were extended by 3% and 24%, respectively. The park boundaries are now within touching distance on either side of the M6 motorway, creating a band of protected land across the North West. The study area has four National Landscapes, which lie wholly or mainly in the UU supply area and parts of North Wales (Solway Coast, Arnside and Silverdale, Forest of Bowland and Clwydian Range and Dee Valley). The North Pennines National Landscape also straddles Cumbria's eastern border. Eryri National Park, the Clwydian Range and Dee Valley National Landscape are the significant designated landscape sites within the region of Lake Vyrnwy and the River Dee. The Welsh Government have submitted a proposal to designate a new National Park in Wales based on the existing Clwydian Range and Dee Valley National Landscape. NRW is considering this proposal, and if confirmed, a new National Park will be created. A decision is anticipated in 2026.

Other areas of importance for their landscape quality in Wales include 495 km of Heritage Coast[119] and 58 landscapes of outstanding/special historic interest[120] These landscapes have a range of purposes, including but not limited to the conservation of natural heritage.[121]

Tranquillity is an important landscape asset which contributes to both landscape value and identity, as well as improving health and well-being. The NPPF states that planning policies and decisions should "*identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason*". A map showing the range of tranquillity in England was reproduced by The Countryside Charity (CPRE) in 2007[122] , which demonstrated that the North West contained contrasting levels of tranquillity, with Merseyside and Greater Manchester the least tranquil and pockets of the Lake District as the most tranquil. More recent mapping has been undertaken for Wales for Dark Skies and Light Pollution[123] , which reveals more than 68% of Wales and 95% of Designated Landscapes fall within the two darkest night sky categories.

There are 96,171 hectares of forest in the North West, representing 6.8% of the region's total area. The majority of the forest in the region comprises broadleaved woodland (43.7% of the total) and coniferous woodland (36.7% of the total)[124]. There are also some significant areas of semi-natural and relict ancient woodland. Cumbria and the Mersey and Red Rose forests comprise the largest area of community forest in the country.

[119] Welsh Government (2022) *Heritage Coasts* Available online: https://datamap.gov.wales/layers/inspire-nrw:NRW_HERITAGE_COAST [Accessed April 2025)

[120] Cadw (2024) *Registered historic landscapes*. Available online: https://cadw.gov.wales/advice-support/historic-assets/conservation-areas-and-other-historic-assets/other-historic-assets-0 [Accessed April 2024]

[121] NRW (2023) *State of Nature Wales*. Available online:

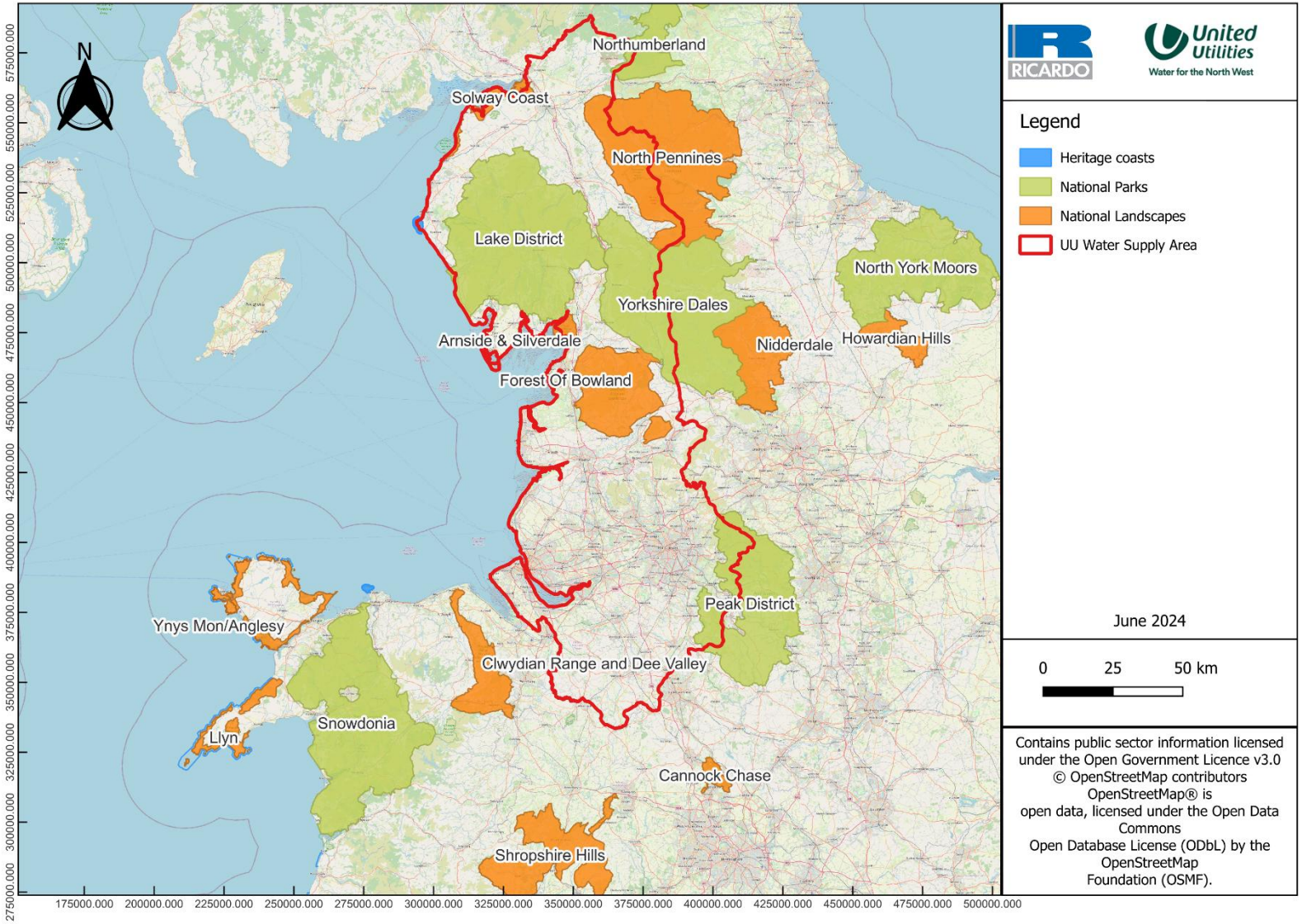
https://stateofnature.org.uk/wp-content/uploads/2023/09/TP26053-SoN-Wales-summary-report-v10.pdf [Accessed April 2024]

[122] The countryside charity (CPRE) (2007) Tranquillity Map: England. Available at: https://www.cpre.org.uk/resources/tranquility-map-england/ [Accessed September 2024]

[123] Land Use Consultants on behalf of Natural Resources Wales (2021) Dark Skies and Light Pollution in Wales. Available at https://luc.maps.arcgis.com/apps/dashboards/1cd6ba8a1d7d4a62aff635cfcbaf4aec [Accessed September 2024]

[124] Forestry Commission (2002), National Inventory of Woodland and Trees, England. Regional Report for North West. Available at: https://cdn.forestresearch.gov.uk/2002/01/ninorthwest.pdf [Accessed September 2024]

Figure 2-7: Landscape and visual assets in UU Supply Area



2.3.11.2 Future Baseline

It is envisaged that landscape and designated sites will be maintained and enhanced where possible. However, landscape character and visual amenity are likely to be affected by development pressure, particularly associated with population growth. In this context, Green Belts in the region are at risk of continuing to reduce in size, which may affect local landscapes.

Defra has set a number of future targets in order to see significant expansion and restoration of a number of priority woodland habitats. These include Upland Oak, Upland Mixed Ash, Wet Woods and Beech. Furthermore, the Government has committed to increasing nationwide woodland cover by 2% before 2060[125].

Climate change and land use change (e.g. due to agricultural reform associated with the UK's exit from the EU and Common Agricultural Policy) may also, in the longer term, lead to changes in the visual amenity of the North West.

2.3.11.3 Key Issues

The key sustainability issues arising from the baseline assessment for landscape and visual amenity are:

- The need to ensure the special qualities of designated landscapes, including National Parks and National Landscapes, are protected;
- The need to minimise any adverse impacts upon landscape that may result from the Drought Plan.
- The need to conserve and enhance landscape character and distinctiveness, taking into account the effects of climate change.

[125] Forestry in England: Seeing the wood for the trees (2017) Available at: www.parliament.uk

2.4 SUMMARY OF KEY ISSUES

A summary of the key issues identified by the policies, plans and programmes review (Section 2.2) and the baseline data review (Section 2.3) is presented in **Table 2.10**. These key issues have been used to develop draft SEA objectives in Section 3.

Table 2-10: Summary of the key sustainability issues identified for the SEA

Topics	Key sustainability issues arising from the baseline and policy review
Biodiversity, flora and fauna	The need to protect, maintain or enhance biodiversity, ecological functions and biodiversity connectivity within UU's supply and source areas, particularly water-dependent priority species and habitats. The need for opportunities to improve connectivity between fragmented habitats to create functioning habitat corridors. The need to promote the resilience of ecosystems. The need to continue to increase and improve the condition of priority habitats and habitats of priority species and restore populations of these species and other specially protected species. The need to avoid and mitigate against, where necessary, activities likely to cause irreversible damage to natural heritage. The need to control the spread of INNS. The need to recognise the importance of allowing wildlife to adapt to climate change. The need to engage more people in biodiversity issues so that they value biodiversity and know what they can do to help, including by recognising the value of ecosystem services.
Population and human health	The need to ensure water supplies remain affordable, especially for deprived or vulnerable communities. The need to ensure the continuing safe, reliable and resilient provision of water services to maintain the health and well-being of the population. The need to ensure that the water requirements of people, visitors and other users such as energy and agriculture can be met at all times in a sustainable way, including in the seasonal peaks associated with tourism. The need to ensure public awareness of drought conditions and the importance of maintaining resilient, reliable public water supplies without the need for emergency drought measures. The need to ensure a balance between different aspects of the built and natural environment that will help to provide opportunities for local residents and tourists for access to green infrastructure and the natural and historic environment, as well as protecting and enhancing recreational resources. The need to ensure that the Drought Plan does not have an adverse economic impact. The need to ensure that 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.

Topics	Key sustainability issues arising from the baseline and policy review
Material assets and resource use	The need to minimise the consumption of resources, including water and energy. The need to minimise current and future demand for water resources through water efficiency measures (including metering). The need to continue to actively control leakage to optimise the water available. The need to continue to encourage more efficient water use by consumers. The need to minimise waste arisings, promote reuse, recovery and recycling and minimise the impact of wastes on the environment and communities.
Water	The need to further improve the quality of the region's river, estuarine and coastal waters, taking into account WFD/RBMP objectives. The need to maintain the quantity and quality of groundwater resources, taking into account WFD/RBMP objectives. The need to improve the resilience, flexibility and sustainability of water resources in the region, particularly in light of potential climate change impacts on surface water and groundwaters. The need to address increased pressures on the public water supply. The need to ensure sustainable abstraction to protect the water environment and meet society's needs for a resilient water supply. The need to ensure that people understand the value of water.
Soil, geology and land use	The need to protect and avoid damage to geodiversity and conserve and enhance sites designated for geological interest (including geological SSSIs). The need to conserve and enhance soil quality and function (including peatlands and carbon sequestration) as well as maintain existing carbon stores and increase them where appropriate. The need to influence how land is managed, promoting sustainable patterns of land use, including the use of previously developed land and minimising the requirements for the best and most versatile land. The need to manage the land more holistically at the catchment level, benefitting landowners, other stakeholders, the environment and the sustainability of natural resources (including water resources).
Air and climate	The need to minimise emissions of pollutant gases and particulates and enhance air quality arising from the implementation of the Drought Plan. The need to mitigate against climate change through the reduction in greenhouse gas emissions in order to contribute to risk reduction over the long term. The need to take into account and, where possible, adapt to the potential effects of climate change 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. The need to increase environmental resilience to the effects of climate change.
Archaeology and cultural heritage	The need to conserve and enhance the historical significance of buildings, monuments, features, sites, places, areas of archaeological and cultural heritage interest, and their settings, particularly those which are sensitive to the water environment. The need to conserve and enhance the World Heritage Sites within the Drought Plan area.

Topics	Key sustainability issues arising from the baseline and policy review
	The need to protect water-dependent heritage sites during drought conditions, including SSSIs, SACs, SPAs and Local Wildlife Sites (LWS) with potential for paleoenvironmental deposits.
Landscape and visual amenity	The need to ensure the special qualities of designated landscapes, including National Parks and National Landscapes, are protected. The need to minimise any adverse impacts upon landscape that may result from the Drought Plan. The need to conserve and enhance landscape character and distinctiveness, taking into account the effects of climate change.

3. METHODOLOGY

3.1 INTRODUCTION

This section sets out the methodology in undertaking the SEA of the Draft Drought Plan 2027, in accordance with the SEA regulations and relevant government, UKWIR and ISEP[126] guidance. The assessment methodology has been designed to meet the requirements of Schedule 2 of the SEA Regulations, including the identification of likely significant effects, consideration of reasonable alternatives, assessment of cumulative effects and identification of mitigation and monitoring measures.

What the SEA Regulations require:

According to Regulation 12:

(2) The report shall identify, describe and evaluate the likely significant effects on the environment of –

(a) implementing the plan or programme; and

(b) reasonable alternatives, taking into account the objectives and the geographical scope of the plan or programme

and according to Schedule 2, the Environmental Report should include:

6. 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.

8. An outline of the reasons for selecting the alternatives dealt with and a description of how the assessment was undertaken, including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.

3.2 ASSESSMENT METHODOLOGY AND SEA FRAMEWORK

The environmental assessments of the drought options have been 'objectives-led', the overall findings of which describe the extent to which these objectives have been met. 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 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 listed in **Section 2.3**).

SEA objectives were developed with reference to:

- Review of policies, plans and programmes (**Section 2.2**)
- Baseline environmental conditions (**Section 2.3**).
- Key environmental issues identified (**Section 2.3** and summarised in **Table 2-10**).

This ensures alignment with relevant environmental protection objectives and statutory targets.

SEA objectives are set out in **Table 3-1**. As well as the overall SEA objectives, a number of key questions have been developed for each SEA topic, which have been used to inform whether the objectives have been met or not. These key questions have prompted the assessment and ensured it considers all the relevant aspects. A draft list of SEA objectives was developed around these environmental themes and issues and was included in the Scoping Report. The list and wording of the objectives were subsequently refined (see **Table 3-1**) following receipt of consultation comments on the Scoping Report.

[126] ISEP (2026). Strategic Assessment: Advice from Practice, February 2026. Available at: https://www.isepglobal.org/resources/blogs/2026/february/new-strategic-assessment-guide-practical-advice-for-modern-practitioners/ [Accessed March 2026]

The following sections describe how SEA objectives have been used in the assessment of the environmental effects of the drought options.

The SEA objectives are intended to reflect changes that contribute to sustainability. By assessing each drought option against the objectives, it is more apparent where drought options might have a negative impact and where options could be developed to reduce potential impacts.

Table 3-1: SEA objectives

SEA Topic	Policies, plans and programmes- key messages	Baseline Key Issues	SEA Objective	Key Questions
Biodiversity, flora and fauna	Conservation and enhancement of the natural environment and biodiversity, principally designated sites (international and national) and priority habitats and species, whilst considering climate change and ability to adapt. Encourage a catchment-wide approach to water use to safeguard protection of the natural environment and biodiversity. To attain favourable conditions for priority habitats and species. 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 works, including provision for fish passage and connectivity for migratory/mobile species. Reinforce the connections between people and nature and appreciate the value of biodiversity. Protection and enhancement of natural capital. Ecosystem services from natural capital contribute to the economy and, therefore, should be protected and, where possible, enhanced. A need to protect the green infrastructure network, including green	The need to protect, maintain or enhance biodiversity, ecological functions and biodiversity connectivity within UU's supply and source areas, particularly water-dependent priority species and habitats. The need for opportunities to improve connectivity between fragmented habitats to create functioning habitat corridors. The need to promote the resilience of ecosystems. The need to continue to increase and improve the condition of priority habitats and habitats of priority species and restore populations of these species and other specially protected species. The need to avoid and mitigate against, where necessary, activities likely to cause irreversible damage to natural heritage; The need to control the spread of INNS. The need to recognise the importance of allowing wildlife to adapt to climate change. The need to engage more people in biodiversity issues so that they value biodiversity and know what they can do to help, including by recognising the value of ecosystem services.	1.1 To protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Will it protect, restore and enhance, where possible, the most important sites for nature conservation (e.g., internationally or nationally designated conservation sites such as SACs, SPAs, Ramsar and SSSIs)? Will it protect, restore and enhance non-designated sites and local biodiversity? Will it protect and enhance aquatic, transitional and terrestrial priority species and habitats? Will it ensure the sustainable management of natural habitats and ecosystems, i.e. within their limits and capabilities, taking into account climate change adaptability? Will it lead to a change in the ecological quality of habitats? Will it alter geomorphological forms and processes which underpin physical habitat for aquatic ecosystems?
			1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Will it protect or enhance natural capital and ecosystem services? Will it maintain and enhance ecosystem resilience? Will it provide opportunities for biodiversity net gain (BNG) and ecosystem resilience through new

SEA Topic	Policies, plans and programmes- key messages	Baseline Key Issues	SEA Objective	Key Questions
	spaces and other environmental features. To seek opportunities for biodiversity net gain and promote ecosystem resilience from infrastructure development. Avoidance of activities likely to increase the risk of the spread of INNS.			habitat creation or restoration and link existing habitats?
			1.3 To avoid introducing or spreading INNS.	Will it limit, reduce or increase the risk of the spread of INNS?
Population and human health	To ensure secure, safe, reliable, dependable, sustainable and affordable supplies of water are provided for all communities and all business sectors. Raise awareness around sustainability, the value of water and using it efficiently. Promotion of healthy communities and protection from risks to health and wellbeing. Protection and improvement of drinking water quality. Water resources play an important health and recreation role. Effective water resource management can create opportunities for regeneration, tourism and the wider economy. Access to high quality open spaces and opportunities for sport and recreation can make an important contribution to the health and wellbeing of communities.	The need to ensure water supplies remain affordable especially for deprived or vulnerable communities. The need to ensure continuing safe, reliable and resilient provision of water services to maintain health and wellbeing of the population; The need to ensure that the water requirements of people, visitors and other users such as energy and agriculture can be met at all times, in a sustainable way, including in the seasonal peaks associated with tourism. The need to ensure public awareness of drought conditions and importance of maintaining resilient, reliable public water supplies without the need for emergency drought measures. The need to ensure a balance between different aspects of the built and natural environment that will help to provide opportunities for local residents and tourists for access to green infrastructure and the natural and historic environment,	2.1 To protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Will it help to ensure access to a resilient and secure supply of affordable drinking water? Will it help to protect or improve drinking water quality? Will it raise awareness of the importance and value of the water environment for health and well-being?
			2.2 To protect and enhance the water environment for other users, including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Will it protect or enhance opportunities for recreation and tourist activities, such as public rights of way, including navigation? Will it help to promote healthy communities and protect from risks to health and wellbeing (for example, through nuisance or resulting from traffic or transport changes, disruption to safe and reliable water /sewerage services)? Does it protect and enhance the green infrastructure network?

SEA Topic	Policies, plans and programmes- key messages	Baseline Key Issues	SEA Objective	Key Questions
	To ensure all communities have a clean, safe and attractive environment in which people can take pride, whilst benefiting the economy. Promotion of a sustainable economy supported by universal access to essential utility and infrastructure services. Social and economic consequences of severe droughts.	as well as protecting and enhancing recreational resources. The need to ensure that the Drought Plan does not have an adverse economic impact. The need to ensure that 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.		Will the option affect public access to, or enjoyment of, local green/blue space? Will the option impact physical health and mental well-being by affecting opportunities for informal outdoor recreation?
			2.3 To promote a sustainable economy with the provision of access to essential services, including a resilient, high-quality, sustainable and affordable supply of water.	Will it assist in ensuring the provision of essential infrastructure and services to support health and well-being and a sustainable economy?
Material assets and resource use	Reduce the amount of waste generated through more efficient use of materials, energy and water, thereby promoting sustainable production and consumption. Contribute to a resource-efficient, green and competitive low-carbon economy. Ensure sustainable use of water resources and maintain a reliable public water supply whilst considering issues of water demand, water supply and water quality in the natural environment. Government expectation for water companies to continue reducing overall demand for water particularly in areas designated as water stressed, or where demand is above the national average. 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.	The need to minimise the consumption of resources, including water and energy. The need to minimise current and future demand for water resources through water efficiency measures (including metering). The need to continue to actively control leakage to optimise the water available. The need to continue to encourage more efficient water use by consumers. The need to minimise waste arisings, promote reuse, recovery and recycling and minimise the impact of wastes on the environment and communities.	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Will it make use of existing infrastructure? Will it promote the reuse and recycling of waste materials and reduce the proportion of waste sent to landfill? Will it help to encourage sustainable design or use of sustainable materials (e.g. supplied from local resources)?
			3.2 To promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Will it enable efficient water resource management and ensure the maintenance of supply? Will it improve efficiency in water consumption? Will it lead to reduced leakage from the supply network?

SEA Topic	Policies, plans and programmes- key messages	Baseline Key Issues	SEA Objective	Key Questions
Water	Reduce water consumption and promote sustainable water resource management. Ensure appropriate management of abstractions and protect flow and level variability across the full range of regimes from low to high conditions. Maintain and improve water quality (surface waters, groundwater and bathing water). Prevent deterioration of waterbody status and 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 quality protection measures to all waters, surface waters and groundwater. Balance the abstraction of water for supply with the other functions and services the water environment performs or provides. Steer new development to areas with the lowest probability of flooding and manage any residual flood risk, taking into account the impacts of climate change. Promote measures to enable and sustain long-term improvement in water efficiency.	The need to further improve the quality of the region's river, estuarine and coastal waters taking into account WFD/RBMP objectives. The need to maintain the quantity and quality of groundwater resources taking into account WFD/RBMP objectives. The need to improve the resilience, flexibility and sustainability of water resources in the region, particularly in light of potential climate change impacts on surface water and groundwaters. The need to address increased pressures on the public water supply. The need to ensure sustainable abstraction to protect the water environment and meet society's needs for a resilient water supply. The need to ensure that people understand the value of water. The need to ensure reliable water supplies for critical low-carbon infrastructure during periods of drought without compromising environmental flows or public water supply.	4.1 To protect and enhance surface and groundwater levels and flows.	Will it minimise the demand for water resources? Will it result in changes to river flows, channel morphologies, wetted width or river levels? Will it result in changes to groundwater levels? Will it help to minimise risks associated with unsustainable abstraction of ground and surface waters? Will it support the achievement of relevant environmental objectives set out in River Basin Management Plans? Will it help to mitigate the risks associated with droughts or floods? Will it alter the flow regime of surface waters?
			4.2 To protect and enhance the quality of surface and groundwater resources.	Will it present a risk to water quality of surface water, groundwater, estuarine or coastal waters? Will it prevent the deterioration of WFD waterbody status (or potential)? Will it support the achievement of WFD protected area objectives? Will it ensure a new activity or new physical modification does not prevent the future achievement of good status for a water body? Will it support the achievement of relevant environmental objectives

SEA Topic	Policies, plans and programmes- key messages	Baseline Key Issues	SEA Objective	Key Questions
				set out in River Basin Management Plans? Will the option prevent nutrient loading in water bodies? Will it affect Drinking Water Protected Area safeguard zone?
			4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Will it ensure sustainable abstractions, taking account of water resources availability status? Will it achieve an appropriate balance of supply with other functions and services (including agriculture and navigation)? Will it help to meet society's needs for a sustainable, resilient water supply?
			4.4 To promote measures to enable and sustain long term improvement in water efficiency.	Will it promote measures to enable improvements in water efficiency and assist in balancing supply and demand? Will it contribute towards improving the awareness of water sustainability and its true value?
Soil, geology and land use	Protect and enhance the diversity and quality of soils and geology (including geological SSSIs), including geomorphology and geomorphological processes which can be damaged or lost by insensitive development. Ensure that soils will be protected and managed to optimise the varied functions that soils perform for society	The need to protect and avoid damage to geodiversity and conserve and enhance sites designated for geological interest (including geological SSSIs); The need to conserve and enhance soil quality and function (including peatlands and carbon sequestration) as well as maintain existing carbon stores and increase them where appropriate;	5.1 To protect and enhance soil quantity, quality and, functionality and geodiversity and ensure the appropriate and efficient use of land.	Will it avoid damage to and protect geologically important sites (e.g. geological SSSIs) or similar nationally protected sites? Will it protect and enhance geomorphology and geomorphological processes, including avoiding contribution to coastal erosion?

SEA Topic	Policies, plans and programmes- key messages	Baseline Key Issues	SEA Objective	Key Questions
	(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.	The need to influence how land is managed, promoting sustainable patterns of land use, including the use of previously developed land and minimising the requirements for best and most versatile land; 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).		Will it protect and enhance the quality of soils and maintain or increase existing carbon stores? Will it ensure efficient use of land (e.g. make use of previously developed land)?
			5.2 To promote a catchment-wide approach to catchment land management.	Will it contribute towards a catchment-based approach to land management?
Air and climate	Reduce the effects of air pollution on ecosystems. Improve overall air quality. 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. Reduce greenhouse gas emissions. Targets include reducing the UK's greenhouse gas emissions to net zero by 2050. Minimise energy consumption, support the use of sustainable /renewable	The need to minimise emissions of pollutant gases and particulates and enhance air quality arising from the implementation of the Drought Plan. The need to mitigate against climate change through the reduction in greenhouse gas emissions in order to contribute to risk reduction over the long term. The need to take into account, and where possible, adapt to, the potential effects of climate change 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.	6.1 To minimise emissions of pollutant gases and particulates and enhance air quality.	Will it reduce or minimise air pollutant emissions? Will it maintain or enhance ambient air quality, keeping pollution below Local Air Quality Management thresholds (e.g., in Air Quality Management Areas or sensitive habitats)?
			6.2 To reduce greenhouse gas emissions.	Will it reduce or minimise greenhouse gas emissions? Will it reduce transport or energy requirements?
			6.3 To adapt and improve resilience to the threats of climate change.	Will it reduce vulnerability or increase resilience to risks

SEA Topic	Policies, plans and programmes- key messages	Baseline Key Issues	SEA Objective	Key Questions
	energy and improve resilience to climate change. Build in adaption to climate change to future planning and consider the level of urgency of associated risk. Need for adaptive measures to respond to likely climate change impacts on water supply and demand.	The need to increase environmental resilience to the effects of climate change.		associated with climate change effects (e.g. drought)? Will it create opportunities to benefit from the potential effects of climate change? Will it make use of renewable energy?
Archaeology and cultural heritage	Built development in the vicinity of historic buildings and Scheduled Monuments 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 historical and cultural assets are avoided. Consider effects on important wetland areas with potential for paleoenvironmental deposits. Promote the conservation and enhancement of the historic environment, including the promotion of heritage and landscape as central to the culture of the assessment area and conserve and enhance distinctive characteristics of landscape and settlements. Conserve and enhance the historic environment, heritage assets and their settings.	The need to conserve and enhance the historical significance of buildings, monuments, features, sites, places, areas of archaeological and cultural heritage interest, and their settings, particularly those which are sensitive to the water environment. The need to conserve and enhance the World Heritage Sites within the Drought Plan area; The need to protect water-dependent heritage sites during drought conditions, including SSSIs, SACs, SPAs and Local Wildlife Sites (LWS) with potential for paleoenvironmental deposits.	7.1 To conserve and enhance the historic environment, including the significance of heritage assets and their settings and archaeologically important sites.	Will it avoid damage to and protect the historic environment, heritage assets and their settings, places and spaces that enhance local distinctiveness? Will it maintain and enhance the historic environment, including paleo-environmental deposits? Will the hydrological setting of water-dependent assets be altered, such as important wetland areas with potential for paleo-environmental deposits? Will it improve access, value, understanding or enjoyment of heritage assets and culturally/historically important assets in the region?

SEA Topic	Policies, plans and programmes- key messages	Baseline Key Issues	SEA Objective	Key Questions
Landscape and visual amenity	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.	The need to ensure the special qualities of designated landscapes, including National Parks and National Landscapes, are protected; The need to minimise any adverse impacts upon landscape that may result from the Drought Plan. The need to conserve and enhance landscape character and distinctiveness, taking into account the effects of climate change.	8.1 To conserve, protect and enhance landscape character and visual amenity.	Will it avoid adverse effects to and enhance, where possible, protected/designated landscapes and the settings of designated landscapes (including woodlands) such as National Parks or National 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? Will it protect and enhance landscape character, townscape, seascape and green infrastructure? Will it minimise adverse visual impacts?

3.3 PRIMARY ASSESSMENT

An appraisal framework has been developed and used to assess each of the drought options against the SEA objectives (as set out in **Table 3-1**). The appraisal framework has been applied to test the performance of the drought options against the SEA objectives to see how far they go towards meeting the latter. A draft of the appraisal framework table is given in **Table 3-2** and is structured as follows:

- Columns 1 and 2 of **Table 3-2** set out the SEA topics and objectives.
- The scale of the effect (Column 3), which might relate to either the geographical scale or the size of the population affected, is identified in the third column on a scale of small, medium and large.
- The significance of effect includes consideration of the nature of the impact, certainty, duration, permanence and magnitude (Columns 4-7 columns of **Table 3-2** in compliance with criteria for determining the likely significance of effects specified in the SEA Regulations Part 2, Regulation 9(2a) and Schedule 1.
- With respect to duration (Column 5), short-term impacts are 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. For the purposes of this assessment, duration relates to impacts from initial implementation during a single drought event.
- The value/ sensitivity of the receptor(s) (Column 8) is identified in the eighth column on a scale of low, medium and high.
- Column 9 discusses and evaluates the impact of the drought option in relation to the objectives for each topic, with reference to the key questions set out in **Table 3-2**. The completed appraisal framework tables are presented in full in **Appendix D**.
- The residual adverse and beneficial effects (after the application of best practice approaches and any appropriate and explicit mitigation measures) are identified in Columns 10 and 11, respectively. These are identified separately to avoid mixing adverse and beneficial effects in line with SEA best practice.

The SEA appraisal framework was used to capture the assessment for each drought option. Where potential adverse effects were identified, the assessment considered the mitigation hierarchy, including avoidance, reduction, and, where appropriate, compensation measures.

Residual effects are reported following the application of embedded and additional mitigation as well as standard best practice, where relevant, in line with the ODPM Practical Guide and UKWIR SEA national guidance.

Assessments were based on quantitative information, where available, and supported by additional qualitative information where required, including spatial analysis, professional judgement and relevant assessment guidelines relating to that topic/objective.

As described in **Section 1.5**, EARs have been prepared for all of the drought permit/order sites (see **Table 1-4**). UU is currently updating all of the EARs in support of Draft Drought Plan 2027. Each EAR was reviewed, and the residual impacts to receptors (i.e. including those measures incorporated for avoidance, cancellation and reduction of impacts) were used to inform the SEA. It should be noted that EARs are prepared with information and data available at the time of writing and are therefore reviewed and updated periodically to incorporate any changes to the baseline and any resulting implications for the impact assessment.

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

Table 3-2: Example of a SEA Appraisal Framework Table Completed for Each Drought Option

Column 1	2	3	4	5	6	7	8	9	10	11
Topic	SEA objective	**Scale of effect:** *(Small/ Medium/ Large)*	**Certainty of effect** *(Low/ Medium/ High)*	**Duration** *(Short/ Medium /Long term)*	**Permanence of effect** (Permanent / Temporary)	**Magnitude of effect** *(Low/ Medium/ High)*	**Value/ sensitivity of receptor** *(Low/ Medium/ High)*	**Potential residual effect on sensitive receptors** *(assuming best practice construction methods)*	**Residual Adverse Effect** (*Negligible/ Minor/ Moderate/ Major*)	**Residual Beneficial Effect** (*Negligible/ Minor/ Moderate/ Major*)
Biodiversity, flora and fauna	1.1 To protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.									
	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.									
	1.3 To avoid introducing or spreading INNS.									
Population and human health	2.1 To protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).									
	2.2 To protect and enhance the water environment for other users, including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).									
	2.3 To promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.									
Material assets and	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.									

Column 1	2	3	4	5	6	7	8	9	10	11
	3.2 To promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.									
Water	4.1 To protect and enhance surface and groundwater levels and flows.									
	4.2 To protect and enhance the quality of surface and groundwater resources.									
	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources, including contributing to the achievement of WFD compliance objectives.									
	4.4 To promote measures to enable and sustain long-term improvement in water efficiency									
Soil, geology and land use	5.1 To protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.									
	5.2 To promote a catchment-wide approach to catchment land management.									
Air and Climate	6.1 To minimise emissions of pollutant gases and particulates and enhance air quality.									
	6.2 To reduce greenhouse gas emissions.									
	6.3 To adapt and improve resilience to the threats of climate change.									

Column 1	2	3	4	5	6	7	8	9	10	11
Archaeology and cultural heritage	7.1 To conserve and enhance the historic environment, including the significance of heritage assets and their settings and archaeologically important sites.									
Landscape and visual amenity	8.1 To conserve, protect and enhance landscape character and visual amenity									

For each SEA objective, a residual effects assessment was determined against a significance matrix (**Figure 3-1**), which took account of the value and sensitivity of the receptor (e.g. species, air quality, river water quality, landscape value, heritage feature) and the magnitude of the assessed effect. This significance matrix comprised effects from 'major beneficial' to 'major adverse'. Where the effect magnitude was 'low' and the value/sensitivity of the receptor was 'high', the resulting significance of the effect could have been greater than 'moderate' and was largely dependent on the receptor. Professional judgement was applied to the assessment as indicated by the hatching in **Figure 3-1**. This colour coding was used to complete the columns for residual effects in the appraisal framework.

The resulting significance of effects was used in the selection of measures for inclusion in the Drought Plan and subsequent phasing of the selected measures. Where major adverse effects were predicted, broad measures envisaged to prevent, reduce and as fully as possible offset these effects on the environment (as a result of implementing the measure) were also set out in the Environmental Report.

Figure 3-1: Significance matrix used to assess the effects of each drought option on each SEA objective

Significance of Effect		Value/sensitivity of receptor: High	Value/sensitivity of receptor: Medium	Value/sensitivity of receptor: 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	= Significance of effect dependent on value/sensitivity of receptor and magnitude	Minor Beneficial / Minor Adverse	Negligible Adverse / Beneficial

3.3.1 General Significance Definitions

Major / Significant- 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 the effect could be minor, moderate or major, depending on the precise nature of the impact or benefit.

All options – both supply side measures and demand management measures – were assessed and 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 to be developed for the environmental assessment of each measure was consistent with the strategic nature of SEA.

3.3.2 Summarising the effects assessment

A summary of the assessment has been presented within the main text of the Environmental Report as a colour-coded VE matrix. An example of a matrix is given in **Table 3-3**. For each drought option and each SEA topic listed in the left-hand column of **Table 3-2**, the matrix summarises the likely significance of impacts (which will be discussed in full in the completed appraisal framework tables).

The SEA impact evaluation will be colour-coded according to the legend presented in **Figure 3-2**. The colour coding represents a range from major adverse residual impacts in red to major beneficial impacts in dark green. An additional descriptor of "Uncertain" has also been included to indicate where there was insufficient data available to undertake the assessment and reach a satisfactory conclusion regarding the impact. Where an SEA topic was not applicable to a drought option, this has been identified by a colour code of white.

Figure 3-2: Legend for colour coding of residual impact significance

Legend:

Major Beneficial	
Moderate Beneficial	
Minor Beneficial	
Negligible	
Minor Adverse	
Moderate Adverse	
Major Adverse	
NOT APPLICABLE	
Uncertain – insufficient data available to undertake assessment	

An appraisal framework table has been completed for each drought option (as identified in **Section 1.4**) and presented in full in **Appendix D** to the Environmental Report.

Table 3-3: Example of a Visual Evaluation (VE) Matrix

Objectives		Objective 1.1	Objective 1.2	Objective 1.3	Objective 2.1	Objective 2.2	Objective 2.3	Objective 3.1	Objective 3.2	Objective 4.1	Objectives Cont..	Commentary
Drought Option Name	Adverse											[summary]
	Beneficial											[summary]

Legend:

Major Beneficial	
Moderate Beneficial	
Minor Beneficial	
Negligible	
Minor Adverse	
Moderate Adverse	
Major Adverse	
NOT APPLICABLE	None
Uncertain - Insufficient data available to undertake assessment	

3.4 SECONDARY, CUMULATIVE AND SYNERGISTIC ENVIRONMENTAL EFFECTS ASSESSMENT

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….*". Cumulative assessment involves examining the likely significant effects of each of the drought options individually, in combination with each other (both inter- and intra-WRZ), and combination with the implementation of other plans and programmes. In assessing these effects, consideration has been given to factors which may affect the receiving environment in the short, medium and long term. Cumulative effects can include secondary effects and synergistic effects (those which interact to produce an impact greater than the sum of the individual parts)[1].

Supply side, demand side and drought permit drought options, which have been assessed, are listed in **Table 1-1**: to **Table 1-3**. The locations of the supply side and drought permit options are provided in **Figure 1-3**. The following cumulative or in-combination assessments have been undertaken:

1. For each supply side and drought permit option, assessment of the cumulative impacts of the option with UU's existing abstraction licences that operate within the zone of influence of the drought option. The results of these assessments have been summarised in Table 5-1 (see **Section 5.2**).
2. Within each of UU's WRZs, assessment of cumulative impacts of each of UU's supply side and each drought permit option, with each of UU's supply side and each drought permit option (intra-zone). Incompatible options have also been identified. These assessments are summarised as a matrix for each WRZ (see **Section 5.3**).
3. Assessment of cumulative impacts of UU's supply side and drought permit options between each of UU's WRZs (inter-zone) (see **Section 5.4**).
4. Within UU's entire water supply area, assessment of cumulative impacts of each demand management option with each demand management option. Note that demand management options are consistent across the whole of UU's region. Therefore, the assessment takes into account the implementation of each option across the whole of UU's supply region. Demand management measures serve to reduce pressure on water resources and will have a positive influence on both supply side and drought permit options within each WRZ (by reducing the demand for water and reducing abstraction at source). Therefore, demand management measures have not been assessed in detail against each supply side and drought permit option other than to acknowledge that they will have a net positive effect by reducing pressure on water resources (see **Section 5.5**).
5. The following combination of drought options, which have the potential to impact the River Eden SAC, will be assessed cumulatively[127] (see **Section 5.6**):
    - North Eden boreholes drought permit options (Bowscar, Gamblesby, Tarn Wood)
    - Ullswater drought permit option
    - Castle Carrock dead storage supply side option[128].
6. Assessment of cumulative impacts with UU's WRMP schemes, which are scheduled to be implemented and become operational within the time period of the Drought Plan (see **Section 5.7**).
7. Assessment of cumulative impacts of UU's Draft Drought Plan 2027 with drought options included in Environment Agency Drought Plans (see **Section 5.8**)
8. Assessment of cumulative impacts of UU's Draft Drought Plan 2027 with drought options included in neighbouring water company Drought Plans (see **Section 5.9**).
9. Assessment of cumulative impacts of UU's Draft Drought Plan 2027 with National Policy Statements (see **Section 5.11**).

As described in **Section 1.2.3**, Drought Plans comprise a basket of measures, the implementation of which is dependent on the particular drought conditions experienced and is subject to temporal, spatial and other factors. The timing of implementation of drought options will not be known until a drought is experienced.

One of the limitations of the cumulative, or in-combination, assessment of UU's Drought Plan is that whilst an environmental appraisal of each drought option can be undertaken, the lack of predictability of which options

[127] This assessment has been included in response to comments from the Environment Agency on the SEA of the Drought Plan 2014

[128] Note the Environment Agency also requested consideration of any scheme with an impact on the River Gelt within this cumulative assessment, but no such scheme has been included as a drought option in UU's Draft Drought Plan 2022.

will be implemented in any particular drought event means that it is difficult to provide an accurate cumulative assessment of the impacts of the plan for a possible future drought event.

Cumulative assessments of drought options have been undertaken, assuming, as a worst case, that the construction phases and then the operational phases of two options 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). In practice, the drought options are generally spatially distant and/or will be implemented at slightly different times (temporally distant).

Due to the uncertainty of the timing of implementation of drought options, assessments of each drought option with each other drought option have been undertaken with the intention that in the event of a drought, the findings of the SEA will be reviewed, and a cumulative assessment made of the options proposed for implementation at that time, based on the findings of the one-on-one assessments (inter- and intra- zone) presented in **Sections 5.3** and **5.4**.

The assessment of cumulative, or in-combination, effects has been informed by drought option forms prepared by UU and presented in **Appendix D** of the Draft Drought Plan 2027). Mapping of the locations of the drought options, surface water catchments and groundwater catchments has been used to inform these assessments. Where information from the Environment Agency's Review of Consents is available for an abstraction licence, this has also been used to inform the in-combination assessment. It is noted, however, that the Review of Consents was carried out on normal licensed operating conditions and did not consider drought permit options. As such, information from the Review of Consents has been reviewed for context only. Where detailed information on the potential for cumulative effects is not available, cumulative effects have been considered using professional judgment.

3.5 REQUIREMENT FOR BNG

Drought Plans are operational documents that set out how water companies will manage supplies during drought conditions, and as such they are not development proposals and do not carry a statutory requirement for Biodiversity Net Gain (BNG). Nevertheless, BNG principles have been considered across drought options in line with current environmental legislation and best practice. Where works fall under the Town and Country Planning regime and constitute "major development," BNG would be required under the Environment Act 2021. Although temporary drought permits and orders are typically exempt, they still undergo environmental assessments and may require compensatory measures if impacts are anticipated. At this stage of drought planning, potential BNG measures can only be identified at a high level, with details refined as scheme designs progress. Where construction activities may cause permanent or temporary habitat loss, appropriate compensation or enhancement measures will be developed during detailed design and permitting, with full BNG assessments, including baselining and metric calculations, completed at the project level to ensure measurable biodiversity improvements can be achieved where required.

3.6 LIMITATIONS OF THE STUDY

SEA is a high-level assessment designed to identify potential environmental effects. The environmental data used in this assessment are based on those readily available from existing sources, e.g., statutory organisations and environmental assessments of drought permit options already undertaken by UU. No primary research or survey work has been conducted specifically to inform the SEA; therefore, it is possible that at the individual option level, there may be additional environmental issues that could influence a drought option.

Limitations of the cumulative or in-combination assessment of UU's Drought Plan should also be noted. As discussed in **Section 3.4**, the implementation of drought options depends on the particular drought conditions experienced, making it challenging to provide an accurate cumulative assessment of the plan's impacts for a potential future drought event.

Where site-specific limitations or outstanding issues are known, these are briefly described in the SEA appraisal tables for the relevant drought option concerned.

4. ASSESSMENT OF DROUGHT OPTIONS

4.1 DROUGHT OPTIONS ASSESSED

The SEA has assessed the environmental effects of all supply side, demand side and drought permit options included within the Draft Drought Plan 2027. These options are listed in **Table 1-1**: and **Table 1-3** with locations provided in **Figure 1-3**. Demand management schemes assessed are applicable across all WRZs, whereas supply side and demand side options are zone-specific.

4.2 ASSESSMENT OF SCHEMES AGAINST SEA OBJECTIVES

The assessment of drought options has been undertaken in accordance with the methodology as set out in **Section 3**. For each option, an appraisal framework assessment table was completed (**Appendix D**), assessing performance against the SEA objectives. The summary findings are presented in **Sections 4.3**, **4.4** and **4.5** as colour-coded VE matrices.

4.3 SUPPLY SIDE OPTIONS

4.3.1 Strategic Resource Zone

No supply side options are proposed within the Strategic Resource Zone.

4.3.2 Carlisle Resource Zone

The utilisation of dead storage at Castle Carrock Reservoir is the only supply side drought option in the Carlisle Resource Zone. A visual summary of SEA conclusions for this option is provided in **Table 4-1**. The completed appraisal table for the drought option is provided in **Appendix D**. The option involves abstraction of dead water Do we want to from Castle Carrock Reservoir (which is not part of any area designated for nature conservation) and is not dependent on abstraction from the River Gelt i.e. the reservoir can be drawn down even if there is no abstraction from the river. Adverse environmental impacts are associated with drawdown of the reservoir on fish populations within the reservoir itself and landscape and visual amenity, as the site is within North Pennines National Landscape. There are, however, beneficial impacts on population and human health due to increased security of public water supply.

4.3.3 North Eden Resource Zone

No supply side options are proposed within the North Eden Resource Zone.

Table 4-1: VE matrix summary for supply side options

Option		SEA Topics and Objectives																		Commentary
		Biodiversity, flora and fauna			Population and human health			Material assets and resource use		Water				Soil, geology and land use		Air and climate			Archaeology and Cultural Heritage	Landscape and Visual Amenity	Inter-relationships	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	4.1	4.2	4.3	4.4	5.1	5.2	6.1	6.2	6.3	7.1	8.1	9.1	
Castle Carrock Reservoir, dead water storage	Adverse								None				None		None			None				The implementation of this drought option would result in a minor adverse impact on biodiversity and population and human health, due to potential impacts on fish populations and resulting impacts on angling. There are also anticipated to be temporary minor adverse impacts on river flows and water quality. Reservoir drawdown and exposure of shoreline margins may result in minor adverse impacts to soil, geology and land use. The impact of the drought option on landscape and visual amenity is considered to be moderate adverse but temporary. Impacts to inter-relationships between topics have been summarised as moderate adverse.
	Beneficial	None	None	None		None		None		None	None		None	None	None	None	None		None	None	None	Overall, five minor beneficial effects were identified. These were in relation to population and human health based on continued supply of drinking water and a beneficial impact on adaptation to climate change. The remaining impacts on water, soil and geology, and inter-relationships would be negligible.

Legend:

Major Beneficial	
Moderate Beneficial	
Minor Beneficial	
Negligible	
Minor Adverse	
Moderate Adverse	
Major Adverse	
NOT APPLICABLE	None
Uncertain - Insufficient data available to undertake assessment	

4.4 DEMAND SIDE OPTIONS

A visual summary of SEA conclusions for each of the demand side options in UU's Draft Drought Plan 2027 is provided in **Table 4-2**. The completed appraisal tables for each of the drought options are provided in **Appendix D**. UU would implement demand side options in a staged approach as a drought event worsens, ensuring that voluntary measures are prioritised before statutory restrictions with potential for greater adverse effects.

Overall, demand side measures serve to reduce pressure on water resources within each WRZ by reducing customer demand for water, and therefore reducing the abstraction at source. This will in turn contribute to reducing the amount of energy needed for water abstraction, treatment and distribution. Impacts on the SEA topics material assets and resource use and water are minor to moderate beneficial for these drought options, due to decreased demand, and correspondingly reduced abstraction at source. Water savings will contribute to increased security of public water supply, resulting in minor to moderate beneficial impacts on population and human health.

Impacts on population and human health are minor to major adverse for water restrictions with impacts on recreation and businesses which are dependent on water use and/or pressure. Certain measures – especially water use restrictions and Temporary Use Bans – may give rise to short-term adverse effects for population and human health. Restrictions may result in temporary economic or lifestyle impacts, with potentially disproportionate effects on vulnerable groups.

It is noted that small scale construction activities are associated with leakage detection and repair activities, which will result in increased energy and material usage, but overall, taking into account reductions in water lost, the impact of this option on material assets and resource use has been summarised as minor beneficial.

Table 4-2: VE matrix summary for demand side options

Option		SEA Topics and Objectives																				Commentary
		Biodiversity, flora and fauna			Population and human health			Material assets and resource use		Water				Soil, geology and land use		Air and climate			Archaeology and Cultural Heritage	Landscape and Visual Amenity	Inter-relationships	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	4.1	4.2	4.3	4.4	5.1	5.2	6.1	6.2	6.3	7.1	8.1	9.1	
Drought Publicity	Adverse	None	None	None	None		None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	A negligible adverse impact has been identified on recreation due to potential for changes in public perception of water-based recreation. This impact is however anticipated to be temporary.
	Beneficial			None										None	None	None			None	None		Minor beneficial effects have been identified relating to Population and Human Health, Biodiversity, Flora and Fauna, Material Assets and Resource Use, Air and Climate, and Water, relating to reduced requirement for abstraction and increased climate resilience. The effect on inter-relationships was also assessed to be minor beneficial.
Enhanced leakage detection and repair	Adverse								None	None		None	None					None			None	Minor adverse impacts have been identified for the topics Biodiversity, Flora and Fauna as a result of construction impacts on ecosystem services.
	Beneficial			None		None								None					None			Moderate beneficial impacts have been identified for Population and Human Health, Water, and Air and Climate in relation to water savings and improving adaptation to climate change. Minor beneficial effects have been identified for the topics of Biodiversity, Flora and Fauna, Material Assets and Resource Use, Soil, Geology and Land Use and Inter-relationships, relating to a reduction in water lost and consequently, a reduced need for abstraction.
Campaign for voluntary water use restraint	Adverse	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Overall, no adverse effects have been identified.
	Beneficial			None										None	None	None			None	None		Moderate beneficial effects have been identified for the topics of Water through the promotion of water efficiency measures. Minor beneficial effects have been identified for Population and Human Health, Material Assets and Resource Use and Water, Soil, Geology and Land Use and Air and Climate relating to reduced need for abstraction and improving adaptation to climate change. A minor beneficial impact is anticipated for inter-relationships.
Temporary Use Ban (TUB)	Adverse	None	None	None				None	None	None	None	None	None	None	None	None	None	None	None	None	None	Minor adverse impacts are anticipated towards Population and Human Health relating to restricting recreational use and the potential to disturb economic activity.
	Beneficial			None										None	None	None			None	None		Moderate beneficial impacts are anticipated towards Water as a result of promoting water efficiency. Minor beneficial impacts are anticipated towards Population and Human Health and Water, relating to water savings and to Material Assets and Resource Use, Water, Soil, Geology and Land Use, and Air and Climate, relating to improving water efficiency, reducing demand and improving adaptation to climate change.
Ordinary Drought Order	Adverse	None	None	None				None	None	None	None	None	None	None	None	None	None	None	None	None	None	Adverse effects are anticipated in relation to Population and Human Health; a major adverse effect as a result of economic impacts to certain business sectors, a moderate adverse effect

Option		SEA Topics and Objectives																			Commentary
		Biodiversity, flora and fauna			Population and human health			Material assets and resource use		Water				Soil, geology and land use		Air and climate			Archaeology and Cultural Heritage	Landscape and Visual Amenity	Inter-relationships	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	4.1	4.2	4.3	4.4	5.1	5.2	6.1	6.2	6.3	7.1	8.1	9.1	
(Non-Essential Use Ban)																						due to potential for impacts on recreation and a minor adverse effect due to potential short-term impacts on standard of living.
	Beneficial			None										None	None	None			None	None		Moderate beneficial impacts are anticipated towards population and human health relating to water savings. Moderate beneficial impacts are also anticipated towards Material Assets and Resource Use, Water and Air and Climate, relating to reduced need for abstraction and improving adaptation to climate change. Minor beneficial impacts are anticipated towards Water and Air and Climate, also relating to reduced requirement for abstraction at source. Minor beneficial impacts are anticipated for Inter-relationships.
Pressure management	Adverse	None	None	None				None	None	None	None	None	None	None	None	None	None	None	None	None	None	Minor adverse impacts are anticipated towards Population and Human Health due to potential delays in water provision caused by pressure management.
	Beneficial			None		None							None	None	None	None			None	None		Moderate beneficial impacts are anticipated for Population and Human Health, Material Assets and Resource Use and Water and Air and Climate, reflecting reduced water consumption, reduced abstraction, lower greenhouse gas emissions and improved adaptation to climate change. Additionally, minor beneficial impacts are noted for Water, resulting from the reduced need for abstraction. A minor beneficial impact is also identified for Inter-relationships.

Legend:

Major Beneficial
Moderate Beneficial
Minor Beneficial
Negligible
Minor Adverse
Moderate Adverse
Major Adverse
NOT APPLICABLE
Uncertain - Insufficient data available to undertake assessment

4.5 DROUGHT PERMIT OPTIONS

4.5.1 Strategic Resource Zone

A visual summary of SEA conclusions for each of the drought permit options in the Strategic Resource Zone is provided in **Table 4-3**. The completed appraisal tables for each of the drought options are provided in **Appendix D**.

Beneficial impacts on population and human health range from minor to major beneficial, based on improved security of public water supply. Minor adverse impacts are also anticipated on population and human health in relation to recreation (including angling) and local socioeconomics.

Impacts on air and climate include minor to major beneficial impacts on climate change adaptation for all drought permit options, related to the effects on resilience of water supplies to drought.

Many of the drought permit options have a negative effect on the objectives for biodiversity, flora and fauna, water and landscape and visual amenity. This reflects the impacts of reduced surface water flows and levels on the environment within the zone of influence of the schemes and associated impacts on water quality. These impacts are assessed as minor adverse for most drought permit options other than Jumbles (6 Ml/d) and both Rivington drought permits which are associated with moderate adverse impacts on biodiversity, flora and fauna.

Beneficial impacts on landscape and visual amenity are also expected, as drought measures that reduce compensation flows from reservoirs can lessen drawdown and improve water retention. This results in higher, more stable water levels, enhancing the overall aesthetic quality of the water bodies.

The assessment of the impacts of drought permit options has been informed by the Environmental Assessments which have been undertaken by UU for each of these options (see **Section 1.5**) and updated as required.

4.5.2 Carlisle Resource Zone

No drought permit/order options are proposed within the Carlisle Resource Zone.

4.5.3 North Eden Resource Zone

A visual summary of SEA conclusions for the drought permits in the North Eden Resource Zone is provided in **Table 4-3**. The completed appraisal table for the drought options is provided in **Appendix D**. The drought permit options in the North Eden Resource Zone are all groundwater sources.

Impacts on population and human health are minor to moderate beneficial, based on improved security of public water supply. Impacts on air and climate include minor to moderate beneficial impacts on climate change adaptation for all drought permit options, related to the effects on resilience of water supplies to drought.

Minor adverse impacts on water are anticipated in relation to potential impacts on third party abstractions. No adverse impacts on biodiversity, flora and fauna, water and landscape and visual amenity are predicted.

The assessment of the impacts of the drought permit options has been informed by the Environmental Assessments which have been undertaken by UU for this option (see **Section 1.5**).

Table 4-3: VE matrix summary for drought permit options

Option		SEA Topics and Objectives																			Commentary
		Biodiversity, flora and fauna			Population and human health			Material assets and resource use		Water				Soil, geology and land use		Air and climate			Archaeology and Cultural Heritage	Landscape and Visual Amenity	Inter-relationships	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	4.1	4.2	4.3	4.4	5.1	5.2	6.1	6.2	6.3	7.1	8.1	9.1	
Strategic Resource Zone																						
Delph Reservoir	Adverse				None		None	None	None				None		None	None	None	None				Overall, minor adverse effects were identified relating to the impact of the drought option on a number of NERC and notable species, impact of riverine flow reduction on biodiversity, water quality and fluvial geomorphology. The impact of inter-relationships has been assessed as minor.
	Beneficial	None	None	None						None	None	None	None	None	None	None	None		None		None	Minor beneficial effects were identified relating to population and human health based on continued supply of drinking water and benefits associated with the landscape amenity of the reservoir. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change.
Dovestone Reservoir 10 Ml/d	Adverse				None		None	None	None				None		None	None	None	None	None			Minor adverse effects were identified relating to the impact of river flow reduction on biodiversity, water quality, and landscape and visual amenity. The effect on Inter-relationships has been assessed as minor.
	Beneficial	None	None	None					None		None		None		None	None	None		None	None	None	Overall moderate beneficial effects were identified relating to population and human health, and air and climate, based on continued supply of drinking water and improving adaptation to climate change. As the drought permit will slow the rate of drawdown, it is also predicted to have a minor positive effect on reservoir water level and exposure.
Dovestone Reservoir 5 Ml/d	Adverse				None		None	None	None				None		None	None	None	None	None			Minor adverse effects were identified relating to the impact of river flow reduction on biodiversity, water quality, and landscape and visual amenity. The effect on Inter-relationships has been assessed as minor.
	Beneficial	None	None	None					None		None		None		None	None	None		None	None	None	Overall moderate beneficial effects were identified relating to population and human health, and air and climate, based on continued supply of drinking water and improving adaptation to climate change. As the drought permit will slow the rate of drawdown, it is also predicted to have a minor positive effect on reservoir water level and exposure.
Fernilee Reservoir	Adverse				None		None	None					None		None	None	None	None				Minor adverse effects are anticipated to biodiversity, water flow and levels and fluvial geomorphology. The effect on Inter-relationships has also been assessed as minor.
	Beneficial	None	None	None		None				None	None	None	None	None	None	None	None		None	None		Overall, minor beneficial effects are anticipated to population and human health based on continued provision of public water supplies. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change.
Jumbles Reservoir 12 Ml/d	Adverse				None			None	None				None		None	None	None	None	None			The implementation of this drought option would result in minor adverse effects on the spread of INNS, water levels and flows, water quality, fluvial geomorphology and visual amenity. Subsequently, the impacts on inter-relationships have been assessed as minor.

Option		SEA Topics and Objectives																		Commentary
		Biodiversity, flora and fauna			Population and human health			Material assets and resource use		Water				Soil, geology and land use		Air and climate			Archaeology and Cultural Heritage	Landscape and Visual Amenity	Inter-relationships	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	4.1	4.2	4.3	4.4	5.1	5.2	6.1	6.2	6.3	7.1	8.1	9.1	
	Beneficial	None	None	None							None	None	None	None	None	None	None		None			Minor beneficial effects were identified relating to population and human health based on continued supply of drinking water. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change. Minor beneficial impacts were assessed due to the drought option resulting in more water being retained in Jumbles Reservoir, which would be expected to have a positive impact on aesthetics.
Jumbles Reservoir 6 Ml/d	Adverse				None			None	None				None		None	None	None	None				The implementation of this drought option would result in moderate adverse impacts to water levels and flows and fluvial geomorphology. Moderate adverse impacts are anticipated to biodiversity in terms of impact upon a number of NERC and notable fish species. A reduction in water levels would also result in minor adverse impacts upon potential spread of INNS and WFD status. Therefore, the impact upon inter-relationships has been assessed as moderate adverse.
	Beneficial	None	None	None						None	None	None	None	None	None	None	None		None			Improved resilience of water supplies to drought is assessed to have a moderate beneficial impact on adaptation to climate change. Moderate beneficial effects were also identified in relation to population and human health based on continued supply of drinking water. More water retained in the reservoir is anticipated to have a minor beneficial impact on recreation and landscape and visual amenity.
Longdendale Reservoirs 25 Ml/d	Adverse				None		None	None	None				None		None	None	None	None				Moderate adverse impacts are anticipated on water levels and flow. The implementation of this drought option would result in minor adverse impact on a number of NERC and notable species, water quality and on water dependent ecosystems in the affected reach. There would also be minor adverse impacts on the aesthetics and landscape of the study area.
	Beneficial	None	None	None		None				None	None	None	None	None	None	None	None		None	None		Overall, two major beneficial effects were identified relating to population and human health based on continued supply of drinking water. There would also be a minor beneficial impact from the drought option for adaptation to climate change. The remaining beneficial impacts on material assets and resources would be negligible.
Longdendale Reservoirs 15 Ml/d	Adverse				None		None	None	None				None		None	None	None	None				Moderate adverse impacts are anticipated on water levels and flow. The implementation of this drought option would result in minor adverse impact on a number of NERC and notable species, water quality and on water dependent ecosystems in the affected reach. There would also be minor adverse impacts on the aesthetics and landscape of the study area
	Beneficial	None	None	None		None				None	None	None	None	None	None	None	None		None	None		Overall, two major beneficial effects were identified relating to population and human health based on continued supply of drinking water. There would also be a minor beneficial impact from the drought option for adaptation to climate change. The remaining beneficial impacts on material assets and resources would be negligible.

Option		SEA Topics and Objectives																			Commentary
		Biodiversity, flora and fauna			Population and human health			Material assets and resource use		Water				Soil, geology and land use		Air and climate			Archaeology and Cultural Heritage	Landscape and Visual Amenity	Inter-relationships	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	4.1	4.2	4.3	4.4	5.1	5.2	6.1	6.2	6.3	7.1	8.1	9.1	
River Lune LCUS abstraction	Adverse							None	None				None		None	None	None	None				Minor adverse effects were identified relating to population and human health due to the impact upon recreation including angling and navigation. The effect on Inter-relationships has also been assessed as minor.
	Beneficial	None	None	None						None	None	None	None	None	None	None	None		None	None		Major beneficial effects were identified relating to population and human health based on continued supply of drinking water. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change.
Rivington Reservoirs – Brinscall Brook	Adverse				None		None	None	None				None		None	None	None	None				Overall moderate adverse effects were identified relating to the impact of riverine flow reduction on biodiversity, flora and fauna, with respect to fish populations, surface water levels and flows and water quality. Minor adverse effects were assessed for fish populations, ecosystem functions and services and fluvial geomorphology. Negligible adverse impacts are anticipated to the spread of INNS, angling, archaeology and landscape and visual amenity. The impact upon inter-relationships has been assessed as moderate.
	Beneficial	None	None			None					None	None	None	None	None	None	None		None			One moderate beneficial effect was identified relating to population and human health based on continued supply of drinking water. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change.
Rivington Reservoirs – White Coppice	Adverse				None		None	None	None				None		None	None	None	None				Overall moderate adverse effects were identified relating to the impact of riverine flow reduction on biodiversity, flora and fauna, with respect to fish populations, surface water levels and flows and water quality. Minor adverse effects were assessed for fish populations, ecosystem functions and services and fluvial geomorphology. Negligible adverse impacts are anticipated to the spread of INNS, angling, archaeology and landscape and visual amenity. The impact upon inter-relationships has been assessed as moderate.
	Beneficial	None	None								None	None	None	None	None	None	None		None			Overall, three minor beneficial effects were identified relating to population and human health based on continued supply of drinking water. Improved resilience of water supplies to drought is assessed to have a minor beneficial impact on adaptation to climate change.
Ullswater	Adverse				None		None		None				None		None			None				Minor adverse effects were identified for Biodiversity, Flora and Fauna, Material Assets and Resource Use, and Air and Climate relating to increased abstraction impacting water levels, as well as the associated rise in energy requirements and resulting greenhouse gas emissions.
	Beneficial	None	None	None		None				None	None		None		None	None	None		None	None		Major beneficial effects are anticipated for Population and Human Health, as well as Air and Climate, through the continued provision of public water supplies. Moderate beneficial impacts are expected on Material Assets, Resource Use, and Water due to maintaining essential public water supplies during drought conditions.

Option		SEA Topics and Objectives																			Commentary
		Biodiversity, flora and fauna			Population and human health			Material assets and resource use		Water				Soil, geology and land use		Air and climate			Archaeology and Cultural Heritage	Landscape and Visual Amenity	Inter-relationships	
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	4.1	4.2	4.3	4.4	5.1	5.2	6.1	6.2	6.3	7.1	8.1	9.1	
Lake Windermere	Adverse				None		None		None				None		None			None				Minor adverse impacts were identified relating to Biodiversity and Material Assets and Resource Use. The abstraction of water from Windermere will increase energy consumption and, therefore, greenhouse gas emissions, having a minor adverse impact upon Air and Climate. The effect on Inter-relationships has also been assessed as minor.
	Beneficial	None	None	None		None			None	None	None	None	None	None	None	None	None		None	None		The impact of the drought option on population and human health has been assessed as major beneficial based on continued provision of public water supplies. Improved resilience of water supplies to drought is assessed to have a moderate beneficial impact on adaptation to climate change.
North Eden Resource Zone																						
Eden Valley boreholes - Bowscar boreholes	Adverse			None			None						None	None				None				Overall minor adverse effects were identified for Biodiversity, Flora and Fauna and Population and Human Health relating to the potential impact of the increase in groundwater drawdown on nearby receptors and third-party groundwater abstractions.
	Beneficial	None	None	None		None		None		None	None		None		None	None	None		None	None		Overall, minor beneficial effects are anticipated for Population and Human Health and Air and Climate based on continued provision of public water supplies and improved adaptation to climate change.
Eden Valley boreholes - Gamblesby boreholes	Adverse						None						None					None				Overall minor adverse effects were identified for Biodiversity, Flora and Fauna relating to the impact of increased groundwater drawdown on nearby receptors and INNS fitness.
	Beneficial	None	None	None		None		None		None	None	None	None	None	None	None	None		None	None		Overall, minor beneficial effects are anticipated for Population and Human Health and Air and Climate based on the continued provision of public water supplies and improved adaptation to climate change.
Eden Valley boreholes - Tarn Wood boreholes	Adverse			None			None						None					None				Overall minor adverse effects were identified for Biodiversity, Flora and Fauna and Population and Human Health relating to the potential impact of the increase in groundwater drawdown on nearby receptors and third-party groundwater abstractions.
	Beneficial	None	None	None		None		None		None	None	None	None	None	None	None	None		None	None		Overall, minor beneficial effects are anticipated for Population and Human Health and Air and Climate based on continued provision of public water supplies and improved adaptation to climate change.

Legend:

Major Beneficial	
Moderate Beneficial	
Minor Beneficial	
Negligible	
Minor Adverse	
Moderate Adverse	
Major Adverse	
NOT APPLICABLE	None
Uncertain - Insufficient data available to undertake assessment	

4.6 SUMMARY

The SEA has assessed the likely significant environmental effects of all supply side, demand side and drought permit options included within the Draft Drought Plan 2027. Effects are generally short-term and depend on the severity of the drought and the timing of implementation.

The supply side option (use of dead storage at Castle Carrock Reservoir) is predicted to cause minor, localised and reversible effects, with some beneficial effects related to supporting resilience.

Demand side options would have environmental benefits related to reducing abstraction pressure and supporting resilience. Where statutory water restrictions are applied, these may have short-term adverse effects on households or businesses. Essential water uses would not be restricted.

Drought permit options have the greatest potential for adverse environmental effects, particularly in relation to biodiversity and flow-dependant habitats and species. However, their implementation would only be considered in response to an exceptional shortage of rain and would be subject to regulatory approval and be implemented alongside an environmental monitoring plan.

5. CUMULATIVE EFFECTS ASSESSMENT

5.1 INTRODUCTION

The cumulative, or in-combination, assessment findings presented in this section have been carried out in line with the methodology described in **Section 3.4**. Supply side and drought permit drought options which have been assessed are listed in **Table 1-1**: and **Table 1-3**, respectively. The locations of these are provided in **Figure 1-3**.

5.2 CUMULATIVE EFFECTS WITH UU'S EXISTING ABSTRACTION LICENCES

Each supply side and drought permit option were reviewed to determine if any of UU's existing operational abstraction licences may have the potential to act cumulatively with the drought option, as described in **Section 3.4**. Mapping of location of drought options, surface water catchments and groundwater catchments has been used to inform these assessments. Where a licence has been subject to the Environment Agency Review of Consents, the information provided has been used to inform this assessment (noting that the Review of Consents was carried out on existing abstraction licence conditions and not drought permit conditions).

For drought permit options which constitute a modification to an existing abstraction licence, the cumulative impacts of the drought option with the existing licence are intrinsic in the primary assessment of the drought permit options (as presented in **Section 4.5**) and are not considered further here.

Figure 5-1 sets out the legend against which the findings of the cumulative assessments of UU's drought options with UU's existing licences are based, as set out in **Table 5-1**.

Legend

	No cumulative effects identified
	Groundwater schemes: Both options abstract from the same groundwater catchment, but with no adverse impacts anticipated
	Groundwater schemes: Both options abstract from the same groundwater catchment, with adverse impacts anticipated
	Options with potential for groundwater-surface water interactions
	Surface water schemes: Both options affect the same surface water resource but with no adverse impact anticipated
	Surface water schemes: Both options affect the same surface water resource with adverse impact anticipated
	Surface water schemes: Both options affect the same surface water resource and are sequential
	Uncertain – insufficient information available to undertake assessment

Figure 5-1: Legend for colour coding the cumulative assessments of UU's drought options with UU's existing abstraction licences

Table 5-1: Summary of potential cumulative effects of supply side and drought permit options and existing UU abstraction licences (options marked with # are also drought permit options).

Drought option	Existing licences within zone of influence	Potential for cumulative effects	Assessment summary
Supply Side options			
Strategic Resource Zone			
None			
Carlisle Resource Zone			
Castle Carrock Reservoir, dead water storage	None identified	-	-
North Eden Resource Zone			
None	-	-	-
Drought Permit Options			
Strategic Resource Zone			
Delph Reservoir	Dingle Reservoir	No cumulative impacts identified	
	Jumbles Reservoir#	Delph Reservoir compensation flow enters Delph Brook and then Eagley Brook. Jumbles reservoir compensation flow enters Bradshaw Brook. Bradshaw Brook and Eagley Brook join to form the River Croal. Adverse impacts are anticipated	
	Longworth Clough, Turton	No cumulative impacts identified	
	Springs Reservoir	No cumulative impacts identified	
Dovestone Reservoir	Longdendale Reservoir#	The compensation flows from both reservoirs eventually enter the River Mersey, with adverse impact anticipated	
	Yeoman Hey Reservoir	No cumulative impacts identified	
	Fernilee Reservoir#	The compensation flows from both reservoirs eventually enter the River Mersey, with adverse impact anticipated	
Fernilee Reservoir	Longdendale Reservoir#	The compensation flows from both reservoirs eventually enter the River Mersey, with adverse impact anticipated	
	Dovestone Reservoir#	The compensation flows from both reservoirs	

Drought option	Existing licences within zone of influence	Potential for cumulative effects	Assessment summary
		eventually enter the River Mersey with adverse impact anticipated	
Jumbles Reservoir	Delph Reservoir#	Delph Reservoir compensation flow enters Delph Brook and then Eagley Brook. Jumbles reservoir compensation flow enters Bradshaw Brook. Bradshaw Brook and Eagley Brook join to form the River Croal. Adverse impacts are anticipated	
Longdendale Reservoirs	Arnfield Reservoir	No cumulative impacts identified	
	Dovestone Reservoir#	The compensation flows from both reservoirs eventually enter the River Mersey with adverse impact anticipated	
	Fernilee Reservoir#	The compensation flows from both reservoirs eventually enter the River Mersey, with adverse impact anticipated	
	Hollingworth Reservoir	No cumulative impacts identified	
	Rhodeswood Reservoir	Rhodeswood Reservoir is part of the Longdendale chain of reservoirs. The drought permit at Longdendale Reservoir will result in more water in the system, and therefore no adverse cumulative impacts are identified.	
	Torside Reservoir	Torside Reservoir is part of the Longdendale chain of reservoirs. The drought permit at Longdendale Reservoir will result in more water in the system, and therefore no adverse cumulative impacts are identified.	
	Swineshaw Reservoir	No cumulative impacts identified	
	Torside Goyt	No cumulative impacts identified	
	Woodhead Reservoir	No cumulative impacts identified	
River Lune LCUS abstraction	River Lune at Caton	UU's Caton abstraction is upstream of the LCUS abstraction. The River Lune LCUS drought option relates to reducing the hands-off flow at Skerton Weir, which is downstream of both abstractions. Therefore, although both schemes abstract from the same resource, no adverse cumulative effects have been identified	
	River Lune at Lower Halton Weir	This source is downstream of the LCUS abstraction however this abstraction has never been utilised by UU and is unlikely to be in the future. Therefore, no cumulative effects have been identified	
Rivington Reservoirs – Brinscall Brook	Rivington Reservoirs – White Coppice#	Both White Coppice and Brinscall Brook flow in to the River Yarrow with adverse impact anticipated.	
Rivington Reservoirs – White Coppice	Rivington Reservoirs – Brinscall Brook#	Both White Coppice and Brinscall Brook flow in to the River Yarrow with adverse impact anticipated.	
Ullswater	None identified	-	-
Lake Windermere	None identified	-	-
Carlisle Resource Zone			
None	-	-	-
North Eden Resource Zone			
Bowscar Boreholes	Beacon Edge Borehole	Both options abstract from the same groundwater catchment, but with no adverse impacts anticipated	
	Cliburn Boreholes	Both options abstract from the same groundwater catchment, but with no adverse	

Drought option	Existing licences within zone of influence	Potential for cumulative effects	Assessment summary
		impacts anticipated	
	Eden Hall Boreholes	Both options abstract from the same groundwater catchment, but with no adverse impacts anticipated	
	Fairhill Boreholes	Both options abstract from the same groundwater catchment, but with no adverse impacts anticipated	
	Tarn Wood Boreholes	Both options abstract from the same groundwater catchment, but with no adverse impacts anticipated	
Gamblesby Boreholes	None identified	-	
Tarn Wood Boreholes	Cliburn Boreholes	Both options abstract from the same groundwater catchment, but with no adverse impacts anticipated	

5.3 CUMULATIVE EFFECTS BETWEEN DROUGHT OPTIONS (INTRA-ZONE)

Cumulative effects of each drought option with each other drought option on a one-on-one basis within each resource zone have been assessed and are summarised in the text and matrices in **Sections 5.3.1** to **5.3.2**. These assessments have been informed by the Drought Plan drought management option forms prepared by UU and mapping of locations of drought options, surface water and groundwater catchments.

5.3.1 Strategic Resource Zone

The matrix presented in Figure 5-2 illustrates incompatible supply side and drought permit drought options and drought options with potential cumulative impacts in the Strategic Resource Zone.

Supply side options

No supply side options have been identified in the Strategic Resource Zone.

Drought permit options

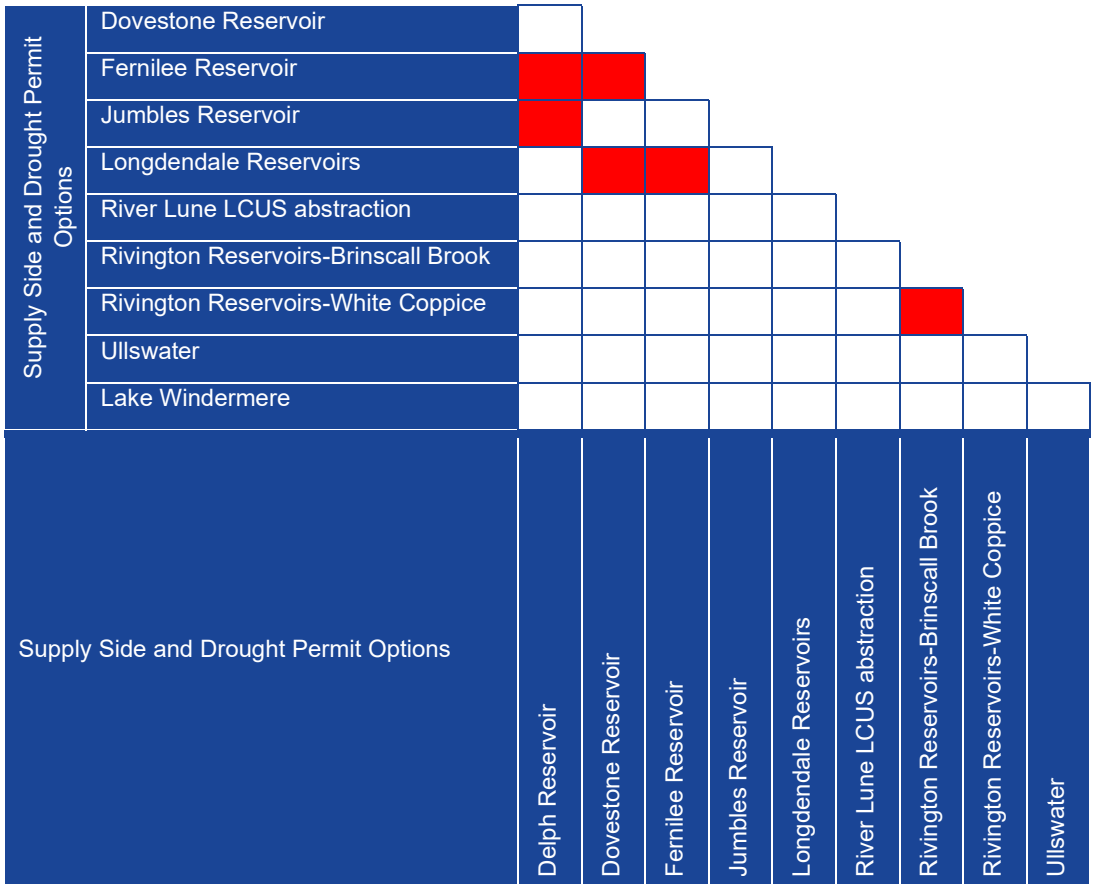
Cumulative impacts of drought permit options were identified in EARs that have been prepared for each of the drought permit options (see **Section 1.5**). These include cumulative impacts resulting from concurrent implementation of:

Rivington Reservoirs – White Coppice and Rivington Reservoirs – Brinscall Brook. It is assumed that both sites would be included within a single drought permit application. Accordingly, the EAR assesses the combined effects on the River Yarrow, which are anticipated to be of low to medium magnitude.

Longdendale Reservoirs, Fernilee Reservoir and Dovestone Reservoir. The Environmental Reports concluded that the impacts of the options when implemented concurrently on hydrodynamics in the River Goyt is predicted manifest as a 30% reduction in low floes in comparison to baseline drought conditions. Impact on the River Mersey (immediately downstream of the confluence between the River Goyt and the River Tame) are anticipated to be minor adverse.

Jumbles Reservoir and Delph Reservoir. The Environmental Reports concluded that the impacts of the options when implemented concurrently on hydrodynamics in the River Tonge, River Croal and River Irwell (immediately downstream of its confluence with the River Croal) are anticipated to be moderate adverse.

Figure 5-2: Cumulative impacts matrix: Strategic Resource Zone



Legend:

	No cumulative effects identified
	Groundwater schemes: Both options abstract from the same resource, but with no adverse impacts anticipated
	Groundwater schemes: Both options abstract from the same resource, with adverse impacts anticipated
	Options with potential for groundwater-surface water interactions
	Surface water schemes: Both options affect the same resource but with no adverse impact anticipated
	Surface water schemes: Both options affect the same resource with adverse impact anticipated
	Surface water schemes: Both options affect the same resource and are sequential
	Groundwater-surface water schemes which are associated; if implemented, the groundwater option would alleviate pressure on the surface water option
	Uncertain – insufficient information available to undertake assessment

5.3.2 North Eden Resource Zone

There are three drought permit options in the North Eden Resource Zone (Eden Valley boreholes). It is assumed these three permits would be applied for and implemented at the same time. The EAR prepared has considered a worst-case scenario of implementing all three drought permits simultaneously and concluded that the three borehole sites ae sufficiently separated for there to be no cumulative effects on groundwater levels and assessed a negligible change to flows in the River Eden.

5.4 INTER-ZONE CUMULATIVE EFFECTS BETWEEN DROUGHT OPTIONS

Assessment of the potential for cumulative impacts of supply side and drought permit options between WRZs has been undertaken. Each supply side and drought permit/order option has been assessed for the potential for cumulative effects with each other supply side and drought permit/order option in other resource zones. These assessments have been informed by the Drought Plan drought management option forms prepared by UU and mapping of locations of drought options, surface water and groundwater catchments.

No cumulative inter-zone impacts were identified between drought options.

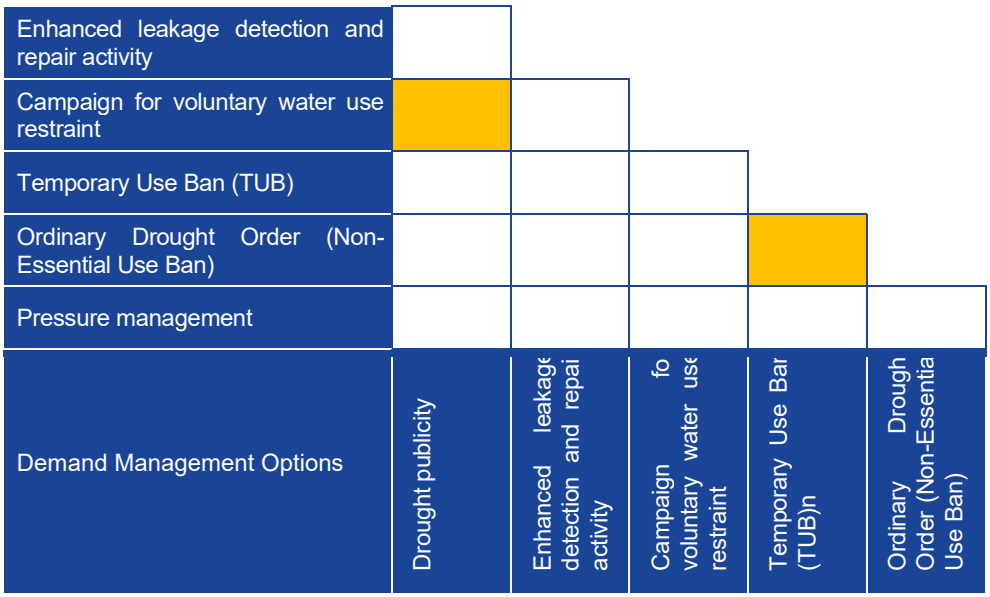
The potential for cumulative effects between the drought option at Ullswater (which is in the Eden catchment) and the Eden Valley Boreholes (Bowscar, Gamblesby and Tarn Wood Boreholes) was considered. The EAR for the Eden Valley Boreholes drought permits concluded that cumulative hydrological impacts of all of the Eden Valley Boreholes drought option with the drought option at Ullswater are negligible; therefore, no cumulative effects between these drought options are anticipated.

5.5 DEMAND MANAGEMENT

5.5.1 Cumulative effects of demand management schemes

The matrix in **Figure 5-3** illustrates potential incompatibility and cumulative impacts between demand management schemes. An application for an ordinary drought order (non-essential use ban) would follow the implementation of water use restrictions (both voluntary and statutory).

Figure 5-3: Cumulative impacts matrix: demand management measures



Legend:

	No cumulative effects identified or beneficial cumulative impacts anticipated
	Adverse impacts anticipated
	Options are sequential

	Uncertain – Insufficient information available to undertake assessment

5.5.2 Cumulative effects with supply side and drought permit options

Demand management options are consistent across the whole of UU's water supply region i.e. are not WRZ-specific. Demand management measures serve to reduce pressure on water resources and will have a positive influence on both supply side and drought permit options within each WRZ by reducing customer demand for water, and therefore reducing the abstraction at source.

5.6 EDEN VALLEY BOREHOLES

The Eden Valley boreholes drought options comprise three boreholes (Bowscar, Gamblesby, Tarn Wood) which have the potential to impact on the River Eden SAC and therefore has been assessed cumulatively at the previous request of the Environment Agency[129]:

- Eden Valley boreholes (Bowscar, Gamblesby, Tarn Wood)
- Ullswater drought permit
- Castle Carrock Reservoir dead water[130].

The EAR for the Eden Valley Boreholes drought permit concluded that cumulative hydrological impacts of all of the Eden Valley Boreholes drought option with the drought option at Ullswater are negligible (worst case in combination reduction of 0.08% of low flows). As the Castle Carrock Reservoir dead water option does not include any changes to abstraction from the River Gelt or River Eden (option relates to utilisation of the dead water storage held within the reservoir itself only), no cumulative effects of this option with any other options are anticipated.

Overall, no cumulative effects of implementing the River Eden schemes concurrently are anticipated.

5.7 UU'S WRMP SCHEMES

There are no resource management schemes identified within UU's Final WRMP24[131] that are due to be operational within the time period of the Drought Plan. The requirements of the Drought Plan 2022 were fully incorporated into both the WRMP calculations and the HRA for the Final WRMP24. As there have been no changes to the options proposed for the Drought Plan 2027, it is unlikely that there will be any additional cumulative effects between the Drought Plan and the Final WRMP24.

The Final WRMP24 includes drought measures and drought permit supply options and therefore complements, and is consistent with, the Drought Plan 2027. It is not anticipated that there would be any additional adverse cumulative effects from the implementation of the Drought Plan in-combination with the Final WRMP24. The demand measures included in the Final WRMP24 are designed to improve the levels of service for drought permits and reduce required abstraction at source, meanwhile reducing the need for temporary use bans. There is a suite of leakage reduction and network metering actions being implemented. The demand management actions have potentially positive effects, as they will ultimately result in reduced abstraction at source, across all resource zones.

5.8 ENVIRONMENT AGENCY DROUGHT PLANS

Assessment of the potential for cumulative impacts of supply side and drought permit options with drought options listed in Environment Agency drought plans has been undertaken.

The information used to carry out these assessments is considered to be the most up to date information available at time of writing, but the assessments should be reviewed at the time of drought option implementation to ensure that no changes to Environment Agency drought plans have been made in the intervening period, and that the assessment, therefore, remains valid.

[129] Olivier Barthélémy, Environment and Business Advisor - Water Resources, Environment Agency, pers. comm.

[130] Note the Environment Agency also requested consideration of any scheme with an impact on the River Gelt within this cumulative assessment, but no such scheme has been included as a drought option in UU's Drought Plan 2022.

[131] United Utilities (2024) Final Water Resources Management Plan 2024, December 2024. Available at: https://www.unitedutilities.com/corporate/about-us/our-future-plans/water-resources/water-resources-management-plan/ [Accessed February 2026]

The following Environment Agency Drought Plans were reviewed:

- North West Drought Plan (2025)

Drought actions and triggers are given in the Environment Agency Drought Plans. Actions described in the Plans include communications (internal and external), monitoring and drought orders. Of these actions, those which are applicable for cumulative assessment with UU's drought options are external communications and drought orders. The other actions in the Plans relate to drought planning and monitoring and are not direct actions which would physically result in cumulative effects.

The Environment Agency[132] have previously advised that SEA of Environment Agency Drought Plans has not been undertaken, as these Plans do not meet the legal requirements for SEA because of their voluntary status. However, the Environment Agency advised that when developing their plans they consider the principles behind SEA to help understand, assess and, where possible, mitigate the impacts of their drought management actions on the environment. Likewise, the Environment Agency advised that their Drought Plans do not contain actions / operations that could impact on a European site so have not undertaken HRA for their plans.

Drought Communications Plan (one of the actions in the Environment Agency's Drought Plans) may have positive cumulative effects with UU's drought publicity and campaign for water use restraint demand side options, as drought communication messages may reinforce each other, thereby resulting in increased demand savings.

Environment Agency drought order actions have the potential to have cumulative impacts with UU's drought options. The Environment Agency can apply to the Secretary of State for drought orders for environmental reasons, e.g. if low flow is posing a risk to the aquatic environment. Environmental drought orders can be used to vary the compensation flow discharged from reservoirs into the receiving rivers, provide measures to lower the controlled flow to conserve resources, or provide measures to reduce abstractions to ease demand on rivers and minimise the environmental effect of reduced support to river flow.

It is difficult to predict where environmental drought orders may be required. However, the likelihood of needing drought orders at compensation-only reservoirs (CORs) is considered low at most sites with the exception of Belmont Reservoir and Black Moss Reservoirs. UU is preparing shelf-copy EARs for these locations. Of the potential options, there is scope for cumulative effects between Belmont Reservoir drought order and UU's Delph and Jumbles drought permits. The combined impacts have been assessed within the relevant EARs and this information has been to used to inform the cumulative assessment. The assessments identify medium-magnitude impacts on the Bradshaw Brook, River Tonge and River Croal waterbodies. However, because the sensitivity of most receptors to changes along these pathways is relatively low, the predicted effects are generally of minor significance. The only exception is for certain fish species in Bradshaw Brook, where effects could reach moderate significance.

In summary, cumulative impacts between options in Environment Agency Drought Plans and UU's drought options are anticipated, however, due to the uncertainties of potential locations, and potential revisions to the Environment Agency Drought Plans this should be considered further at the time of any potential application for drought permits or drought orders by UU or the Environment Agency.

5.9 OTHER WATER COMPANY DROUGHT PLANS AND WRMPS

Assessment of the potential for in-combination effects of supply side and drought permit options with drought options listed in neighbouring water companies' DPs and WRMPs has been undertaken. Plans from the following water companies were reviewed as part of this process:

- Dŵr Cymru Welsh Water
- Severn Trent Water
- Yorkshire Water
- Northumbrian Water
- Scottish Water
- Hafren Dyfrdwy

It should be noted that all water company DPs and WRMPs are subject to review on timescales that may not be aligned with the timescale of UU's Drought Plan. The information used to carry out these assessments is

[132] Mike Stokes, Environment Agency email to Kat Liney, Cascade Consulting, 7 September 2011.

considered to be the most up to date information at available at time of writing, but the assessments should be reviewed at the time of drought option implementation to ensure that no changes to the neighbouring water company drought options has been made in the intervening period, and that the assessment, therefore, remains valid.

A supply side option aimed at augmenting flows in the River Dee was the only supply side measure included in the Hafren Dyfrdwy Drought Plan 2025-2030[133]. No drought permit options were included in Northumbrian Water's 2022 Drought Plan and all supply side options would be within existing licensed limits.

In England, the water companies have a statutory duty under the Water Act 2003 for the production of drought plans. Scottish Water currently has a duty under the Water (Scotland) Act 1980 to promote the conservation and effective use of the water resources of Scotland, and they are presently in the process of producing drought plans for their strategic sources which they will subsequently agree with the Scottish Environmental Protection Agency and Scottish Natural Heritage.

No potential for cumulative effects between UU's DP 2027 and other water company drought plans or WRMPs have been identified.

5.10 RIVER BASIN MANAGEMENT PLANS

Assessment of the potential for cumulative effects of supply side and drought permit options with drought options listed in the River Basin Management Plans has been undertaken.

The updated North West RBMP[134], published in October 2022, describes the planned steps to implement the measures required to achieve the environmental objectives of the Water Framework Directive (WFD). It provides the framework for protecting and enhancing the water environment.

The information used to carry out these assessments is considered to be the most up to date information available at the time of writing, but the assessments should be reviewed at the time of drought option implementation to ensure that no changes to the River Basin Management Plans have been made in the intervening period, and that the assessment, therefore, remains valid. SEA was carried out on the first and second cycles of RMBPs but not the third cycle as any changes were considered to be minor. For the fourth cycle, the Environment Agency are carrying out SEA as there is potential for more significant changes to the measures. A SEA Scoping Report[135] was prepared for consultation in November 2025 and confirmed a review of cumulative effects with other plans will be undertaken.

The RBMP and DP contain similar objectives around the protection, sustainable management and use of the water environment in terms of quality and quantity. The HRA[136] of the North West RBMP concluded that the risk of significant in-combination effects on Habitats sites with other plans is considered to be low, because the objectives and actions within the RBMP are aimed at improving the status of water bodies and achieving favourable conservation status for water dependent Habitats sites. Implementation of the RBMP with the Drought Plan may constrain the implementation of RBMP objectives, however, the plans may also provide opportunities to co-deliver actions.

5.11 NATIONAL POLICY STATEMENTS

National Policy Statement for Water Resources Infrastructure[137]; sets out the need and policies for development of nationally significant infrastructure projects (NSIPs) for water resources in England.

National Policy Statement for Wastewater[138]; states the policy of reducing demand for wastewater infrastructure by reducing domestic and industrial wastewater production and by implementation of

[133] Hafren Dyfrdwy (2025) Hafren Dyfrdwy Drought Plan 2025-2030
[134] Environment Agency (2022) North West river basin district river basin management plan: updated 2022. Available at: https://www.gov.uk/guidance/north-west-river-basin-district-river-basin-management-plan-updated-2022 [Accessed February 2026]
[135] Environment Agency (2025) North West River Basin Management Plan: Strategic Environmental Assessment scoping report: a consultation. Draft. November 2025.
[136] Environment Agency (2022) River basin management plan for the Thames River Basin District: Habitats Regulations Assessment, September 2022. Available at https://assets.publishing.service.gov.uk/media/635248048fa8f554cca7b226/Thames_river_basin_management_plan_2022_HRA.pdf [Accessed February 2026]
[137] Defra (2025) *National Policy Statement for water resources infrastructure*. July 2025.
[138] Defra (2012) *National Policy Statement for waste water*. March 2012.

Sustainable Urban Drainage Systems. Only two major infrastructure projects are put forward, both in the south east of the UK. No cumulative effects with UU's drought options have been identified.

National Policy Statement for Renewable Energy Infrastructure[139]**;** covers the following types of nationally significant renewable energy infrastructure in England; energy from biomass and/or waste (>50 megawatts (MW), pumped hydro storage (>50MW), solar photovoltaic (>100MW), offshore wind (>100MW) and onshore wind (>100MW), tidal stream (>100MW). No cumulative effects with UU's drought options have been identified.

National Policy Statement for Nuclear Energy Generation [140]**;** identifies potentially suitable sites for the deployment of new nuclear power stations in England and Wales. Two sites, Heysham and Sellafield, are located within the United Utilities Strategic Resource Zone. No cumulative effects with UU's drought options have been identified.

A number of NSIPs listed on the Planning Inspectorate website are located within the United Utilities supply area. No cumulative effects with UU's drought options have been identified.

5.12 SUMMARY

No significant adverse cumulative effects have been identified between UU's drought options, and actions in UU's WRMP24, Environment Agency Drought Plans, other water company Drought Plans or WRMPs or key National Policy Statements.

[139] Department of Energy Security and Net Zero (2025) *National Policy Statement for Renewable Energy Infrastructure (EN-3).* December 2025.
[140] Department of Energy and Climate Change (2025) *National Policy Statement for nuclear energy generation (EN-7).* November 2025.

6. MITIGATION AND MONITORING

6.1 OVERVIEW

Key stages of the SEA process comprise Task B5: Mitigating adverse effects, Task B6: Proposing measures to monitor the environmental effects of plan or programme implementation and Stage E: Monitoring the significant effects of the plan or programme on the environment (see **Section 1.6**, **Table 1-5**). The sections below describe how these tasks have been addressed and how UU intend to ensure that mitigation measures are implemented for any adverse effects that are identified and the means by which the environmental performance of the Drought Plan can be assessed.

6.2 MITIGATION

Mitigation may be defined as a measure to limit the effect of an identified significant impact or, through the most successful application, avoid the adverse impact altogether, the latter being the preferred option.

Consideration of mitigation measures has been an integral part of the SEA process. The methodology for the assessment of the drought options is provided in **Section 3**. The SEA appraisals have been based on residual impacts, i.e. those impacts likely to remain after the implementation of reasonable mitigation. Certain assumptions have been made regarding this:

- Where suitable mitigation measures are known and identified (e.g. as informed through EARs, where available (see **Section 1.5**) or UU's drought management option forms, within the Drought Plan, these have been taken into account, such that the resultant residual impact has been determined.
- In line with recommendations made in the UKWIR SEA Guidance[8], the SEA appraisals have assumed the implementation of reasonable mitigation, such as the use of good construction practice. This is particularly applicable to stood down supply side options which are currently non-commissioned, and which do not operate as 'business as usual', and would require recommissioning in the event of use as a drought option.
- Mitigation is an implicit component of abstraction licences which are issued and reviewed by the Environment Agency based on an assessment of the potential impacts on the environment. This is applicable to all supply side options which are actions within existing abstraction licence limits which have been subject to the Environment Agency's Review of Consents process.

As described in **Section 6.3**, during implementation of a specific drought option, appropriate monitoring will be undertaken to track any potential environmental effects which will in turn trigger deployment of suitable and practicable mitigation measures.

6.3 MONITORING

Monitoring is required to track the environmental effects to show whether they are as predicted, to help identify any adverse impacts and trigger deployment of mitigation measures.

As described in **Section 1.2.3**, Drought Plans encompass a basket of measures that will only be implemented if and when required because of the unpredictable occurrence of a drought event, and thus the actual impact of the plan over its life is subject to very significant uncertainties.

UU's Draft Drought Plan 2027 includes a range of possible measures to allow UU to respond to a particular drought in the most appropriate way. It is impossible to predict in advance which and how many of the measures will be required, and in which order of priority, to respond to each particular drought event. Correspondingly, it is therefore difficult to prescribe monitoring for the effects of the Drought Plan as a whole, and more appropriate to consider monitoring for drought options with significant environmental effects should these options be implemented during an actual drought.

EARs have been prepared for all of UU's drought permit options (see **Section 1.5**). These reports include an Environmental Monitoring Plan. Discussions between UU, the Environment Agency, Natural England and Natural Resources Wales have been held to agree the baseline, in-drought and post-drought monitoring required at each drought permit site (based on the Environmental Monitoring Plans contained within the Environmental Reports). EMPs for all sites are reviewed and shared with the EA annually.

As described in the Draft Drought Plan 2027, in the event of a drought requiring the implementation of drought option(s), UU will review the requirement for environmental monitoring in consultation with the Environment Agency, Natural England and Natural Resources Wales (as appropriate).

7. SUMMARY

7.1 INTRODUCTION

SEA of UU's Draft Drought Plan 2027 has been undertaken. The Drought Plan provides a comprehensive statement of the actions UU will consider implementing during drought conditions to safeguard essential water supplies to customers and minimise environmental impact.

Drought Plans encompass several drought options that will only be implemented if and when required. Each drought is different in terms of its severity, season, location and duration and each combination of these factors may require a bespoke reaction in terms of measures. In the context of drought planning, individual drought options are treated as reasonable alternatives. Given the operational and conditional nature of drought planning, the SEA does not identify a preferred option but provides a comparative assessment of the environmental performance of each drought option. UU's Draft Drought Plan 2027 comprises a total of 22 drought options (one supply side option, six demand options and 15 drought permit sites).

The purpose of SEA is to provide high level and strategic protection of the environment by incorporating environmental considerations into the preparation of plans and policy. The SEA assists in the identification of the likely significant environmental effects of UU's drought options and determines how any adverse impacts might be mitigated. The SEA also provides information on the relative environmental performance of alternatives and is intended to make the decision-making process more transparent. The SEA can, therefore, be used to support the timing and implementation of drought options within the Drought Plan.

SEA Screening confirmed that UU's Draft Drought Plan 2027 required both SEA and HRA. The HRA of UU's Draft Drought Plan 2027 has been undertaken in parallel with the SEA and is reported separately in the HRA Screening Report. The HRA screening process identifies whether each drought option in the DP (either alone, in combination or with other plans or projects) is likely to have significant effects on Habitat sites (as defined under the Habitats Regulations 2017), i.e. sites of international conservation importance. The findings of both the SEA and HRA have fed into the revision of the Drought Plan in an iterative process.

The SEA and HRA have been guided by a Project Steering Group of representatives from Natural England, the Environment Agency, Historic England, Natural Resources Wales and Cadw. A SEA Scoping Report was issued in January 2025, and provided an opportunity for the statutory consultees to provide views on the proposed scope and level of detail of this SEA Environmental Report. Issues raised by consultees have been considered in preparing this report.

The findings of the SEA are presented within this Environmental Report, which accompanies UU's submission of the Draft Drought Plan 2027 to Defra.

7.2 ASSESSMENT METHODOLOGY

The assessment has been 'objectives-led'. SEA objectives have been derived from environmental objectives established in law, policy or other plans and programmes, and from a review of the baseline information. The SEA objectives have been categorised under the following topic areas: biodiversity, flora and fauna; population and human health; material assets and resource use; water; soil, geology and land use; air and climate; archaeology and cultural heritage; landscape and visual amenity; and inter-relationships. The overall findings of the SEA describe the extent to which objectives for each topic are met by each of the drought options.

The outputs of the assessment are a completed appraisal framework table for each drought option, and a colour coded summary matrix (ranging from major beneficial impacts to major adverse impacts) which provides a comparative assessment of the residual environmental effects of implementing each drought option (i.e. those impacts remaining after the implementation of mitigation measures).

A cumulative, or in-combination, assessment has also been undertaken which has involved examining the likely significant effects of each of the drought options in combination with each other (both intra- and inter-WRZ) and in combination with the implementation of other relevant plans and programmes.

7.3 FINDINGS OF THE ASSESSMENTS

The findings of the SEA of each drought option are summarised below.

7.3.1 Supply side options

Minor construction works are required to bring Castle Carrock back into operation and few residual environmental effects are anticipated. Operationally, the supply side option is within existing licensed abstraction limits, and it is assumed that the existing abstraction licence would not have been granted if these options resulted in unsustainable abstraction. Overall, most of the impacts of implementing this option are anticipated to be negligible or minor adverse, with minor beneficial impacts associated with benefits to security of public water supply and climate change adaptation.

7.3.2 Demand side options

Demand side measures serve to reduce pressure on water resources by reducing customer demand for water, therefore reducing the abstraction at source. This will in turn contribute to reducing the amount of energy needed for water abstraction, treatment and distribution. Overall, impacts for these drought options are considered to be negligible to major beneficial. Adverse impacts on population and human health were associated with options involving water restrictions.

7.3.3 Drought permit options

The magnitude of impacts on SEA objectives for drought permit options (i.e. where there is modification to the conditions of an existing abstraction licence) varies between and within the options, ranging from major beneficial for the SEA objective for population and human health, to moderate adverse for the SEA objective for biodiversity, flora and fauna. The latter were associated with adverse changes to surface water levels and flows.

7.4 CUMULATIVE IMPACTS

The cumulative, or in-combination, assessment identified the potential for adverse impacts if two drought options were to be implemented at the same time, either intra- or inter- WRZ. In the majority of combinations, no impacts are considered likely, however, in some cases, impacts have been identified where, for example, both options draw on the same water resource (e.g. same groundwater catchment or same river). Due to the uncertainty of timing of implementation of drought options, assessments of each drought option with each other drought option have been undertaken with the intention that in the event of a drought, the findings of the SEA be reviewed and a cumulative assessment made of the options proposed for implementation at that time, based on the findings of the one-on-one assessments.

Assessment of UU's Draft Drought Plan 2027 with other plans and programmes, including UU's WRMP, Environment Agency Drought Plans, other water company Drought Plans and WRMPs and National Policy Statements, concluded that no significant cumulative, or in-combination, effects are anticipated.

7.5 MITIGATION AND MONITORING

Consideration of mitigation measures has been an integral part of the SEA process. The SEA appraisals have been based on residual impacts, i.e. those impacts likely to remain after the implementation of reasonable mitigation.

During implementation of one or more drought options, appropriate monitoring will be undertaken to track any potential environmental effects which will in turn trigger deployment of suitable and practicable mitigation measures. Prior to implementation, UU will review the specific requirements for environmental monitoring in consultation with the Environment Agency, Natural England and the Natural Resources Wales (where required).

7.6 NEXT STEPS

The Draft Drought Plan 2027 and the SEA Environmental Report will be issued for public consultation. Comments received through this consultation will be incorporated in a Revised Draft Drought Plan, and, where appropriate to do so, these changes will be assessed using the approach to SEA set out in this report. The Revised Draft Drought Plan will subsequently be published as a Final Drought Plan and an SEA post-adoption statement prepared. When the Drought Plan is implemented during an actual drought event, UU will monitor its effects on the environment, helping to ensure that the potential impacts identified in the SEA are considered in practice.

APPENDICES

APPENDIX A: SUMMARY OF CONSTRUCTION ACTIVITIES REQUIRED FOR SUPPLY SIDE DROUGHT OPTIONS

This Appendix provides a summary of the construction activities required in order to bring each of the supply side drought options into operation.

This Appendix consists of two tables.

Table A1 outlines the key work elements required for each drought option, including an 'Activity Reference'.

Table A2 provides construction details relating to each 'Activity Reference', including plant and vehicle movements and the basic materials required.

Table A1 Summary of Construction Activities for Supply Side Option

Site	Scope	New borehole pumps /rising main	New mechanical and electrical works	Disinfection plant	UV plant	Acid dosing	Filter plant	Temporary pumping station	Existing WTW refurbishment	New Pipeline	Slipline maintenance	Activity Ref (see Table A2)
Carlisle Resource Zone												
Castle Carrock Reservoir dead water storage	Install temporary pumping equipment into reservoir in order to utilise dead storage (170 Ml) below Trigger 4, new pumps and rising main, modifications to include a temporary filter plant at the front of the works						X	X				7,8

Table A2 Construction Activities

Activity Ref	Activity	Scope	Traffic	Materials
1	New borehole pumps /rising main	Removal of existing borehole pump and rising main and replacement/renewal as needed. Use of mobile crane.	General construction (e.g. transit pick-up truck): 4 trips per day for 1 week Mobile crane: on-site for 1 week Pipe delivery: 1 HGV visit Pump delivery: 1 HGV visit	Pipes: length of rising main, assume 150mm diameter PE Borehole pump(s)
2	New mechanical and electrical works	Replacement or relocation of power supply/starter panel.	General construction (e.g. transit pick-up truck): 4 trips per day for 2 days Panel delivery: 1 HGV visit	Starter panel
3	Disinfection only plant > 5 Ml/d	Construction of concrete base and temporary building (~6mx4m) including access track. Installation of disinfection rig including tapping into existing pipework.	General construction (e.g. transit pick-up truck): 4 trips per day for 3 weeks Excavator (e.g. JCB): on site 2 weeks Sub-base delivery: 2 HGV visits Concrete delivery: 2 HGV visits Building/Rig delivery: 1 HGV visit Mobile crane: on-site for 1 week	Hardcore: ~ 20t Concrete: ~10m^3 Temporary building (6mx4m) Disinfection rig including control equipment Hypochlorite storage
4	Disinfection and UV plant Up to 5 Ml/d	Construction of concrete base and temporary building (~3mx4m) including access track. Installation of disinfection/UV rigs including tapping into existing pipework.	General construction (e.g. transit pick-up truck): 4 trips per day for 3 weeks Excavator (e.g. JCB): on site 2 weeks Sub-base delivery: 2 HGV visits Concrete delivery: 2 HGV visits Building/Rig delivery: 2 HGV visits Mobile crane: on-site for 1 week	Hardcore: ~ 15t Concrete: ~10m^3 Temporary building (3mx4m) Disinfection/UV rigs including control equipment Hypochlorite storage
5	Disinfection and UV plant > 5 Ml/d	Construction of concrete base and temporary building (~6mx4m) including access track. Installation of disinfection and UV rigs including tapping into existing pipework.	General construction (e.g. transit pick-up truck): 4 trips per day for 4 weeks Excavator (e.g. JCB): on site 2 weeks Sub-base delivery: 3 HGV visits Concrete delivery: 3 HGV visits Building/Rig delivery: 2 HGV visits Mobile crane: on-site for 2 weeks	Hardcore: ~ 25t Concrete: ~12m^3 Temporary building (6mx4m) Disinfection/UV rigs including control equipment Hypochlorite storage

Activity Ref	Activity	Scope	Traffic	Materials
6	Acid dosing	Construction of concrete base for dosing rig/M&E and building (~3mx4m) including access track. Installation of acid rig including tapping into existing pipework.	General construction (e.g. transit pick-up truck): 4 trips per day for 2 weeks Excavator (e.g. JCB): on site 2 weeks Sub-base delivery: 2 HGV visits Concrete delivery: 2 HGV visits Building/Rig delivery: 2 HGV visit Mobile crane: on-site for 1 week	Hardcore: ~ 20t Concrete: ~10m^3 Temporary building (3mx4m) Disinfection rig including control equipment Chemical storage
7	Filter plant	Construction of concrete base for pre-fabricated filtration plant and M&E building (~3mx4m) including access track. Installation of acid rig including tapping into existing pipework.	General construction (e.g. transit pick-up truck): 4 trips per day for 4 weeks Excavator (e.g. JCB): on site 3 weeks Sub-base delivery: 4 HGV visits Concrete delivery: 4 HGV visits Building/Rig delivery: 10 HGV visit Mobile crane: on-site for 1 week	Hardcore: ~ 30t Concrete: ~10m^3 Temporary building (3mx4m) Filtration plant including control equipment Chemical storage
8	Temporary Pumping Station	Construction of concrete base and temporary building (~3mx4m) including access track. Installation of pump-sets/M&E including tapping into existing pipework.	General construction (e.g. transit pick-up truck): 4 trips per day for 2 weeks Excavator (e.g. JCB): on site 1 week Sub-base delivery: 3 HGV visit Concrete delivery: 1 HGV visit Building/Pump/Generator delivery: 3 HGV visit Mobile crane: on-site for 1 week	Hardcore: ~ 30t Concrete: ~5m^3 Temporary building (3mx4m) Generator Pumps
9	Existing water treatment works refurbishment	Refurbish slipline/ filters/media/chemical dosing at existing works.	General construction (e.g. transit pick-up truck): 4 trips per day for 6 weeks General materials delivery: 12 HGV visits Mobile crane: on-site for 3 weeks	Filter media Pipework/dosing equipment
10	Temporary pipeline and pumping station	Installation and removal of temporary overland PE pipeline (3km 180mm PE). Temporary diesel pumps.	General construction (e.g. transit pick-up truck): 4 trips per day for 6 weeks Excavator (e.g. JCB): on site 3 weeks Sub-base delivery: 10 HGV visits Concrete delivery: 4 HGV visits Pump/fittings delivery: 2 HGV visits Pipe/fittings delivery/removal: 30 visits Mobile crane: on-site for 1 week	3km 180mm diameter PE80 pipe Diesel pumps 30 l/s @ 77m head Temporary fencing: 250m Sub-base material: ~ 50t Concrete: ~ 20m3

Activity Ref	Activity	Scope	Traffic	Materials
11	New Main	Construction of new supply pipeline.	General construction (e.g. transit pick-up truck): 4 trips per day for 6 weeks Excavator (e.g. JCB): on site 6 weeks Pipe surround deliveries/removal: 100 HGV visits Concrete delivery: 6 HGV visits Pipe/fittings delivery: 12 visits	

APPENDIX B: STATUTORY CONSULTEE RESPONSES TO THE SEA SCOPING REPORT

Ref	Consultee	Paragraph/Section Reference	Issue/ Comment	Action (if applicable)	Response to Comment / How and where will comment be addressed
1	Natural England	1.3.3 UU's Drought Options – Drought Levels	We would appreciate further explanation of how the order and timing of the measures delivered at each level maximise their effectiveness in reducing demand and protecting the environment as well as supply ahead of drought.	N/A	The order and timing of the measures delivered at each drought level are most effective in reducing demand because they are designed to gradually escalate restrictions, ensuring that water conservation efforts start early and intensify as conditions worsen. This staged approach maximises water savings while maintaining public trust, regulatory compliance, and environmental protection:
2	Natural England	1.3.3 UU's Drought Options	NE would welcome further information about the modelling used to prepare the Drought Plan and its options. How it relates (or not) to previous modelling undertaken, e.g. for the WRMP, what climate change and development pressures are included within individual Resource Zones.	N/A	Information on the modelling work undertaken to develop our Drought Plan is included in the technical appendices of our submission. Within these documents details can be found regarding how we have developed new drought levels and the scenarios used to test that our plan is robust.
3	Natural England	1.3.3.1 Supply side options	Is it possible at this stage to provide a potential list of where any additional supply side options might be, in addition to Castle Carrock Dead Water Storage?	N/A	At present, Castle Carrock's dead water storage is our only identified supply-side option ahead of any emergency measures. At Level 2, our focus within the Strategic Resource Zone is expected to be on drought permit applications. The potential use of other supply-side options—such as reintroducing unused sources—would need to take into account possible impacts under the Water Framework Directive and would be considered in consultation with the Environment Agency, if progressed
4	Natural England	1.3.3.1 Supply side options "existing licensed abstractions (i.e., sources not included within the Drought Plan), supply side options and drought permit/order options on Natura 2000 sites will be included within the HRA screening assessment"	Further information on how this will be carried out would clarify how the impacts of existing with potential new sources would be integrated.	N/A	The HRA of the drought plan will assess the impact of options in UU's drought plan which covers a 5 year period. Assessment of any potential new sources would be included in the HRA, which supports the WRMP and would assess the impact of those new sources with options in UU's drought plan.
5	Natural England	1.3.3.2 Demand side options Table 1.2: Demand side options in UU's 2022 Drought Plan (all WRZs)	NE would appreciate a better understanding of the effectiveness of the demand side options listed in recent dry weather events, how they relate to the new drought levels and how this will influence their use in the new plan	N/A	As part of this drought plan update, we have reviewed the suitability and effectiveness of demand action benefit assumptions included in our Drought Plan 2022. Information on the effectiveness of demand actions and how they relate to our drought levels is included in the technical appendices of our submission. Within these documents details can be found regarding how we have calculated demand action benefits and how they influence the new plan.
6	Natural England	1.3.3.3 Drought Permit / Order Options	NE would welcome information on the approach to CoRs, for example whether the position wrt the modelling of resilience for Borrans and Dubbs CORs (as part of the River Kent SAC) has changed since the previous plan?	N/A	As part of our broader Hydrology strategy, we have developed new rainfall-runoff models for both supply and compensation-only reservoirs (CoRs). Our current modelling (in combination with recent historic data) is not showing any change in resilience for Borrons and Dubbs reservoir (which is a low risk of requiring a drought order in the future)
7	Natural England	1.3.3.3 Drought Permit / Order Options	Can UU confirm the full list of CORs for the purposes of this Drought Plan?	N/A	We have finalised the list of compensation-only reservoirs and identified the higher risk reservoirs that would more likely require a drought order. For those that are confirmed as higher risk, we'll carry out an Environmental Assessment Report (EAR). This update can be found in our Compensation Only Reservoirs technical report.
8	Natural England	Table 2.1: List of Policies, Plans and Programmes Reviewed (in alphabetical order from International to Local)	2023 Environment Improvement Plan is missing from the list of National Plans and Policies Water Resources West Plans are missing from Regional plans Designated Sites Conservation Objectives are missing from Sub Regional/Local Plans (although SIPs and NCAs are referenced)	N/A	We will review Table 2.1 and Appendix A and add the missing policies, plans and programmes highlighted to the relevant sections in the Environmental Report.

Ref	Consultee	Paragraph/Section Reference	Issue/ Comment	Action (if applicable)	Response to Comment / How and where will comment be addressed
9	Natural England	Table 2.2: Key Policy Messages	Lack of reference to availability of water resources as a key limiting factor the transition to a low carbon economy, which is particularly an issue in the NW (Hynet etc)	N/A	We will review the key policy messages and baseline information in relation to water resource availability and the transition to a low carbon economy and make reference to this where relevant in the Environmental Report.
10	Natural England	Figure 2.2: National and Local Nature Conservation Designations in the UU Supply Area and North Wales	MCZ are missing from this diagram	N/A	We have updated Figure 2.2 to include MCZs in the Environmental Report.
11	Natural England	2.3.4.2 Future Baseline "Current trends in data have shown that there has been very little change in the area of SSSIs in favourable condition since 2016"	Overall, SSSI condition has declined by 10% across all categories since 2016.	N/A	We have reviewed the available information and updated this section in the Environmental Report.
12	Natural England	2.3.4.2 Future Baseline Climate change is anticipated to have an impact on wildlife in the future	Climate change is having an impact on biodiversity already	N/A	We have changed the wording to 'continue to have an impact on wildlife in the future'.
13	Natural England	Table 2.5 Key WRZ Data for UU 2021/22	Could further detail be provided to explain why the average per capita use so much higher in the North Eden Zone?	N/A	We have a high proportion of rural properties, which are unmeasured. During AMP8, we will increase smart metering in North Eden.
14	Natural England	2.3.9 Air and Climate 2.3.9.1 Baseline	Air quality issues are not just related to industrial sources, as increasing issues come from agricultural sources, deposition that is known to occur on designated sites causing damage to designated sites	N/A	We have added further detail to the equivalent Section 2.3.9 in the Environmental Report to improve the environmental baseline around this topic.
15	Natural England	3.2.2 Secondary, cumulative and synergistic environmental effects	To what extent will this include the NWT and other related RAPID schemes? Will the neighbouring water company options be based on former drought plan options or ones in current development?	N/A	Plans and projects (including SROs) with the possibility of coinciding with the temporal scope of the Drought Plan (2027-2032) will be reviewed for potential cumulative effects. This will be based on available information at the time of assessment. As the Drought Plans across England are being prepared concurrently it may not be possible to complete a full cumulative assessment with the current options in development and we may need to rely on the current published Drought Plans for this information. However, this assessment would be reviewed between Draft and Final to ensure the latest information has been captured.
16	Environment Agency	Section 2.3	Section 2.3 of the SEA Scoping Report outlines the relevant baseline information, around the SEA topics outlined in the regulations. Key issues are identified for each topic and future trends in baseline are identified (although for some topics this is not regionally specific). Data limitations and assumptions have been set out in section 2.3.2. It is recognised that impacts could extend beyond NW study area for the Drought Plan (e.g. North Wales) and therefore baseline information for these areas is included where relevant (section 2.3.3). Condition of the baseline is included for some topics e.g. waterbody status and some biodiversity receptors, but limited for other topics. Some maps are included for most topics, but not all. UU study area boundary is included on maps where provided, but it would be advisable to show SEA study area on the maps too, to show any buffers/zone of influence applied to SEA topics. Further depiction of the SEA study area would be advised within the SEA to show any buffers/zone of influence applied to study area.	There is a potential risk that not all relevant environmental baseline is considered in the SEA assessment and therefore not all potential impacts of the drought plan are identified through the SEA. You should provide further information around buffers/zones of influence in the SEA baseline (including maps).	The zones of influence for the Drought Plan will be dependent on the options included in the plan, which had not been finalised at the time of Scoping. When it comes to assessing the drought options, the potential zone of influence will be reviewed for each option (using information from the EARs for drought permit/order options) which will determine the buffers used in the assessment. The maps are intended as a visual aid only and following the removal of the Vyrnwy option from the plan we have not updated to include a specific SEA study area as this is assumed to be contained within the UU supply area.
17	Environment Agency	Table 2.1, Table 2.2 and Section 2.4	Neighbouring water company Water Resources Management Plans, Drought Plans are all noted in the PPP review, but there is no reference to UU WRMP24, Drainage and Wastewater management plans,	There is a risk that key issues from these plans may not be considered in the SEA framework.	Table 2.1 and Appendix A has been updated with these plans in the equivalent sections of the Environmental Report.

Ref	Consultee	Paragraph/Section Reference	Issue/ Comment	Action (if applicable)	Response to Comment / How and where will comment be addressed
			Strategic Resource Options (where applicable), UU final Business Plan / Final Determination, UU WINEP for PR24/AMP8, WR West draft regional plan and SoR, relevant NAV company WRMP/drought plans, Severn RBMP (given Vyrnwy is in the Severn catchment).	You should include some/all of these key documents in the review/assessment.	
18	Environment Agency	Section 3.1	Section 3.1 of the SEA Scoping Report states that all SEA topics have been scoped into the assessment. There is one reference to flood risk being scoped out of the SEA Water topic in section 'Flooding is not viewed as a key issue for the SEA water topic in relation to the Drought Plan because none of the drought management measures are likely to involve the construction of permanent physical infrastructure within areas at risk of flooding or contribute to an increase in flood risk.' Therefore, justification is given for this. No further subtopics have been scoped out. You should consider whether any further subtopics within SEA topics could be scoped out of the assessment.	This could result in excess information being taken through into the assessment that is not relevant to the Drought Plan. Consider any further scoping of issues across SEA topics.	We have reviewed the SEA topics and determined no further sub-topics could be scoped out of the assessment.
19	Environment Agency	Section 1.3.2	In Section 1.3.2, it is not set out which specific action(s) in the plan led to a “yes” in the flowchart (Figure 1.2). It is unclear how the decisions have been made in this flow chart during screening.	You should include information on how and why decisions were made in the SEA screening route.	We have revised Section 1.3.2 to make the screening route for SEA clearer in the Environmental Report.
20	Environment Agency	Table 1.3	In Table 1.3 of the drought permit/order options in the drought plan, the permits/orders are referred to as ‘potential’.	We would expect you to have made decisions on your supply side permit/order options around now in order to complete necessary work ahead of draft plan submission.	We are currently reviewing and finalising all drought permits and orders for DP27 and do not expect to identify any new ones for this plan.
21	Environment Agency	Table 2.1	In the list of policies, plans and programmes reviewed, some of these are very old and are likely to have been superseded in the meantime or won’t be current Government policy (for example, 2004 Defra Rural Strategy).	You should review and use the most up to date policies, plans, and programmes in your assessment.	We have reviewed Table 2.1 and Appendix A and updated accordingly in the equivalent sections of the Environmental Report.
22	Environment Agency	Section 2.3.6	The key data for UU presented in these tables and diagrams is the outturn data for 2021/22. We are unsure why this has been used when 2023/24 is available and was submitted last June.	You should update the baseline data to use the up to date outturn data from 2023/24.	We have updated the baseline data to use 2023/24 data.
23	Environment Agency	General point		You should consider the SEA-related feedback we gave on the WRMP24 SEA scoping and environmental reports (i.e. Recommendation 9 in our representation on the draft WRMP24) to ensure the drought plan SEA will not draw similar feedback from us.	We have reviewed the Environment Agency's feedback for SEA during WRMP24.
24	Environment Agency	Page number 41, paragraph 3	There is the statement that in the NW there has been a notable increase in the population of otter, salmon and trout. Agree on the comment re otters but need to factcheck the claim for salmon and trout. Later on page 43 paragraph 2, it states salmon are in decline. This could also make reference to the decline in water vole here. Also, the continued threat to eel populations, problems with lack of habitat and barriers to eel passage.	You should factcheck the claim on salmon and trout population increasing. You could also make a reference to the decline in water vole and the continued threat to eel populations. You should also mention white clawed crayfish and the NW being a stronghold for remaining UK populations. Threat from non-native signal crayfish and the need for good biosecurity including care when carrying out UU water transfers. This section also states that the NW has seen an improvement in the condition of habitats. Which habitats have improved and where?	We have reviewed the baseline information and update accordingly in the Environmental Report. We have also made mention to white clawed crayfish and threat from signal crayfish.
25	Environment Agency	Page number 43, paragraph 2	This states that salmon are in decline, but eels are increasing slowly.	You should check and reference this statement as the salmon comment contradicts earlier statement on page 41 that salmon are increasing.	As above

Ref	Consultee	Paragraph/Section Reference	Issue/ Comment	Action (if applicable)	Response to Comment / How and where will comment be addressed
26	Environment Agency	Page number 43, paragraph 6	The text uses the term “particularly protected sites designated for nature conservation"	Instead of limiting the statement to this, you could use the term water dependant priority species and habitats instead. Broader and allows action outside of just designated sites.	We have amended this text.
27	Environment Agency	Page number 65, paragraph 3	Agree that we need to protect water dependant heritage site during drought conditions including wetland areas, but this objective needs to be linked through to the biodiversity section, not just in the heritage section. The text mentions “important” wetland areas, where we are unsure on the meaning of this	You should include local wildlife sites in addition to designated wetlands such as SSSIs, SACs, and SPAs. You should explain the definition of what is meant by the reference to important wetland areas in this context	We have amended these sections accordingly in the Environmental Report.
28	Environment Agency	Page number 80, paragraph 2	In the soil and land use section, there could be more information on soil quality and carbon emissions.	You should check that your drought plan implementation does not dry out/degrade peat soils (upland and lowland) contributing to reduced soil quality and increased carbon emissions.	We have reviewed the baseline information and updated this section accordingly in the equivalent section of the Environmental Report.
29	Natural Resources Wales	-	We welcome the information identified as part of the review of relevant plans and programmes as well as the baseline evidence and analysis presented within your scoping report. However, we consider that, for Wales, the designations around Vyrnwy need to be referenced in more detail than they are in the report.		The Vyrnwy Drought Order has been removed from the Plan therefore we no longer consider this to be required.
30	Natural Resources Wales	-	When considering the drought order for Vyrnwy you should consider the in combination assessment with both Severn Regulation and any future trade with Severn Trent Water. Any Drought order considered for Vyrnwy must cover the functional linkage with the Severn Estuary / Môr Hafren SAC and the Severn estuary Ramsar site.		The Vyrnwy Drought Order has been removed from the Plan therefore we no longer consider this to be required.
31	Natural Resources Wales	-	The SEA should include consideration of the proposed new National Park in north east Wales which is based on the Clwydian Range and Dee Valley Areas of Outstanding Natural Beauty (AONB) and includes Lake Vyrnwy Wales’s New National Park Proposal - https://ymgynghori.cyfoethnaturiol.cymru/north-east-gogledd-ddwyrain/new-national-park-proposal-information-page-wales/		We have updated the baseline in the Environmental Report to reference this.
32	Natural Resources Wales	-	Whilst we acknowledge there are no drought actions proposed in your drought plan in relation to the River Dee, an explanation of the Dee General Directions and Dee Drought Directions should be provided with particular reference as to how you will follow these directions during a drought.		We have provided an explanation of the Dee General Directions and Dee Drought Directions in the draft main document (see section 2.6.3 River Dee).
33	Natural Resources Wales	-	References to "Biodiversity net gain" are not applicable where your plan is within or affecting Wales. It is not a requirement of the Environment (Wales) Act in respect to your biodiversity and resilience of ecosystems duty for Wales. For Wales you should follow: (Ecosystem Resilience in a Nutshell 1: what is ecosystem resilience? https://cdn.cyfoethnaturiol.cymru/media/696279/ecosystem-resilience-in-a-nutshell-1-what-is-ecosystem-resilience.pdf). Further background information can be found here Section 6 - https://www.gov.wales/section-6-biodiversity-and-resilience-ecosystems-duty-summary-report-2022-html		Following the removal of the Vyrnwy Drought Order from the DP we no longer consider this to be required.

Ref	Consultee	Paragraph/Section Reference	Issue/ Comment	Action (if applicable)	Response to Comment / How and where will comment be addressed
34	Natural Resources Wales	-	There is no mention of soil carbon and organic matter in the proposed assessment framework. Soil carbon is number 13 of the National Well-being Indicators (Wales) - https://www.gov.wales/wellbeing-wales-national-indicators. The uplands of Wales are a significant and important national carbon store. Therefore, for the SEA objective in respect to soil and land use “the need to conserve and enhance soil quality and function (including carbon sequestration)” - you should include the maintenance of existing carbon stores and an increase where appropriate.		We have reviewed and updated the baseline where required in the Environmental Report.
35	Natural Resources Wales	-	There is a reference to ‘Climate Change Act 2008’. You also need to ensure that you have considered the targets as set out by the Welsh Government in respect to the Climate Change (Wales) Regulations 2021.		We have reviewed and updated the baseline where required in the Environmental Report.
36	Natural Resources Wales		List of some of the main plans and programmes for Wales which may be helpful: Agriculture (Wales) Act 2023 Agriculture (Wales) Act 2023 | GOV.WALES - https://www.gov.wales/agriculture-wales-act-2023 The Environmental Permitting (England & Wales) Regulations (2016) Welsh Government’s Well-being of Wales National Indicators Waterwise - Water Efficiency Strategy for UK (2022) Natural Resources Wales – Area Statements and Opportunity Catchments State of Natural Resources Report (2020) National Strategy for Flood and Coastal Erosion Risk Management in Wales | GOV.WALES (2020) - Climate Change (Wales) Regulations 2021 - Climate Change Wales Health Impact Assessment (2023) Catchment scale improvements, River Restoration and Sustainable Fisheries opportunities in Wales (see RBMP Annex’s for more information) Natural Resources Wales Corporate Plan - Valued and Resilient: The Welsh Government's Priorities for Areas of Outstanding Natural Beauty and National Parks World Soil Charter - the 1982 United Nations Food and Agriculture Organisation World Soil Charter (revised in 2015) contains key principles and guidelines to benefit most soil stakeholders to identify the necessary policy and action approaches to guarantee global sustainable soil management Voluntary Guidelines for Sustainable Soil Management - the 2017 United Nations Food and Agriculture Organisation Voluntary Guidelines for Sustainable Soil Management are reference guidelines for technical and policy recommendations for sustainable soil management goals for a range of different stakeholders National Peatland Action Programme .Natural Resources Wales / The National Peatland Action Programme Planning Policy Wales (edition 12) Planning Policy Wales - Edition 12 (gov.wales)		We have reviewed and updated the baseline where required in the Environmental Report.

APPENDIX C: REVIEW OF POLICIES, PLANS AND PROGRAMMES

The findings of the review of policy, plans and programmes are set out in **Table C-1**. The purpose of the review and the key findings are set out in **Section 2.2** of this report. This table sets out the purpose and objectives of the policy, plans and programmes, their relationship with UU's Drought Plan and the implications of the plan objectives for the objectives of the SEA.

Table C-1: Summary of the Policy, Plans and Programmes reviewed and their link to the SEA

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
International	
Convention on Biological Diversity (2022) *Kunming-Montreal Global Biodiversity Framework (GBF)*	
The Kunming-Montreal Global Biodiversity Framework (GBF) is an outcome of the 2022 United Nations Biodiversity Conference and was adopted during COP15. The GGF contains four global goals and 23 targets, categorised into three areas; reducing threats to biodiversity, meeting people's needs through sustainable use and benefit-sharing and tools and solution or implementation and mainstreaming. Although not a legally binding treaty, the GBF is expected to have a major impact in countries as they endeavour to meet their targets, through development of new plans and regulations. For example, protected areas will be expanded and subsidies for ecologically destructive activities such as fishing will have to be redirected.	The SEA should seek to promote the protection and enhancement of biodiversity.
Council of Europe (1979) *The Convention on the Conservation of European Wildlife and Natural Habitats (The Bern Convention)*	
International convention which aims to ensure conservation of wild flora and fauna species and their habitats. Special attention is given to endangered and vulnerable species, including endangered and vulnerable migratory species specified in appendices. Enforced in European legislation through the Habitats Directive (92/43/EEC) and Birds Directive (79/409/EEC).	The SEA should seek to promote the protection and enhancement of biodiversity.
Council of Europe (1983) *The Convention on the Conservation of Migratory Species of Wild Animals (The Bonn Convention)*	
Aims to conserve terrestrial, marine and avian migratory species by protecting endangered, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger such species. Enforced in European legislation through the Habitats Directive (92/43/EEC) and Birds Directive (79/409/EEC).	The implementation of the DP may influence biodiversity in the North West and as such the SEA should seek to maintain or enhance the quality of habitats and biodiversity.
Council of Europe (1985) *Convention for the Protection of the Architectural Heritage of Europe* Granada Convention	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
To reinforce and promote policies for the conservation and enhancement of Europe's heritage.	The SEA should take into account the need to conserve heritage.
Council of Europe (1992) *Valletta Convention on Protection of Archaeology*	
The Valletta Convention is one of a series of Conventions for the protection of the cultural heritage produced by the Council of Europe over the last fifty years.	The SEA should take into account the need to conserve heritage.
Council of Europe (2000) *European Landscape Convention (Florence Convention)*	
The European Landscape Convention is an international convention focusing specifically on landscape. The UK Government signed the European Landscape Convention in 2006, and it became binding from March 2007.	The SEA should take landscape quality into account and include water quality in the assessment framework.
Council of Europe (2006), *European Landscape Convention*	
European Landscape Convention (ELC) is the first international convention to focus specifically on landscape. Natural England implements the European Landscape Convention in England. The aims of the 2009/10 action are: • Lead on improving the protection, planning and management of all England's landscapes • Raise the quality, influence and effectiveness of policy and practical instruments • Increase the engagement in and enjoyment of landscapes by the public • Collaborate with partners across the UK and Europe.	The implementation of the DP may influence landscape or the enjoyment of landscapes in the UU SEA study area and as such the SEA should consider the need to maintain or enhance the quality of the region's landscapes and the potential enjoyment of these landscapes.
Food and Agriculture Organisation of the United Nations (2015) Revised World Soil Charter	
This document contains key principles and guidelines to benefit soil stakeholders to identify the necessary policy and action approaches to guarantee global sustainable soil management	The SEA should take into consideration the principles laid out in the charter with regard to soils.
Food and Agriculture Organisation of the United Nations (2016) Voluntary Guidelines for Sustainable Soil Management	
These guidelines provide general technical and policy recommendations on sustainable soil management (SSM) for a wide range of committed stakeholders and how to translate them into practice.	The DP and SEA should take into account these guidelines.
EC 2001/42/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment (SEA Directive)	
The SEA Directive provides the following requirements for consultation:	The Directive sets the basis for SEA as a whole and therefore indirectly covers all objectives.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
• Authorities which, because of their environmental responsibilities, are likely to be concerned by the effects of implementing the plan or programme, must be consulted on the scope and level of detail of the information to be included in the Environmental Report. These authorities are designated in the SEA Regulations as the Consultation Bodies. • The public and the Consultation Bodies must be consulted on the draft plan or programme and the Environmental Report and must be given an early and effective opportunity within appropriate time frames to express their opinions. • EU Member States must be consulted if the plan or programme is likely to have significant effects on the environment in their territories. • The Consultation Bodies must also be consulted on screening determinations on whether SEA is needed for plans or programmes under Article 3(5), i.e. those which may be excluded if they are not likely to have significant environmental effects.	The SEA Directive has been transposed into UK Law through the SEA Regulations. Since the UK's exit from the EU, the SEA Directive no longer applies.
European Commission (2009), *Birds Directive (2009/147/EC)*	
The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. It sets broad objectives for a wide range of activities, although the precise legal mechanisms for their achievement are at the discretion of each Member State (in the UK delivery is via several different statutes).	The SEA should seek to protect and conserve important bird habitats.
European Commission (2024). Council Directive 1999/31/EC on the landfill of waste (consolidated version as of 4 August 2024).	
The Directive aims at reducing the amount of waste landfilled; promoting recycling and recovery; establishing high standards of landfill practice across the EU and preventing the shipping of waste from one Country to another. The objective of the Directive is to prevent or reduce as far as possible negative effects on the environment (in particular on surface water, groundwater, soil, air and human health) from the landfilling of waste, by introducing stringent technical requirements for waste and landfills.	The DP should take the effects on waste to landfill into account. The SEA assessment should consider the effects on water, soil, air, human health and waste.
ICOMOS (2011) *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties*	
This document provides guidance on the process of Commissioning Heritage Impact Assessments (HIAs) for World Heritage properties in order to evaluate effectively the impact of potential development on the Outstanding Universal Value (OUV) of properties. The guidance is addressed at managers, developers, consultants and decision-makers and is also intended to be relevant to the World Heritage Committee and States Parties. The concept of OUV underpins the whole World Heritage Convention and all activities associated with properties inscribed on the List.	The SEA Framework should include an objective on the conservation and enhancement of heritage.
IUCN (2013) *World Heritage Advice Note: Environmental Assessment*	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
This Advice Note provides States Parties and other stakeholders with guidance on how to identify, evaluate, avoid and mitigate potential impacts of development proposals on World Heritage values, before decisions are taken. It provides guidance on integrating natural World Heritage Sites within Environmental Assessments. It includes a set of World Heritage Impact Assessment Principles that can be applied to all types of environmental Assessments, a list of key questions to ask concerning World Heritage during the assessment as well as step-by-step guidance.	The WRMP should seek to contribute towards the protection of World Heritage Sites. The SEA assessment framework should include objectives and guide questions relating to the conservation of World Heritage Sites. The SEA assessment should also reflect/incorporate the principles of the guidance, where relevant.
Ramsar Convention (1971) *The Convention on Wetlands of International Importance*	
The Convention on Wetlands (Ramsar, Iran, 1971) (the "Ramsar Convention") is an intergovernmental treaty that embodies the commitments of its member countries to maintain the ecological character of their Wetlands of International Importance and to plan for the "wise use", or sustainable use, of all of the wetlands in their territories.	The impacts of the DP options on important wetland habitats must be considered as part of the SEA.
United Nations (1992), *Convention on Biological Diversity (CBD)*	
The main objectives are: • Conservation of biological diversity • Sustainable use of its components • Fair and equitable sharing of benefits arising from genetic resources	The commitment to conserving biological diversity must be considered in any DP options and the SEA should seek to promote the protection and enhancement of biodiversity.
United Nations Economic Commission for Europe (1998) *Aarhus Convention - Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters*	
The Aarhus Convention grants the public rights regarding access to information, public participation and access to justice, in governmental decision-making processes on matters concerning the local, national and transboundary environment. It focuses on interactions between the public and public authorities. The Aarhus Convention has been ratified by the European Community, which has begun applying Aarhus-type principles in its legislation, notably the Water Framework Directive (Directive 2000/60/EC).	The Convention is designed to improve the way ordinary people engage with government and decision-makers on environmental matters. It helps to ensure that environmental information is easy to get hold of and easy to understand. The SEA should seek to provide easily understood information to the public on the environmental implications of the DP and its constituent options.
United Nations (2002), *Commitments arising from the World Summit on Sustainable Development, Johannesburg*	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
The World Summit on Sustainable Development proposed broad-scale principles which should underlie sustainable development and growth. It included objectives such as: • Greater resource efficiency • Work on waste and producer responsibility • New technology development • Push on energy efficiency • Need for integrated water management plans • Minimise significant adverse effects on human health and the environment from chemicals by 2020.	These commitments are the highest-level definitions of sustainable development. The DP should be influenced strongly by all of these themes and should seek to take its aims into account. The SEA should seek to promote the achievement of the sustainable development objectives outlined in this plan.
United Nations (2015) *The 2030 Agenda for Sustainable Development*	
This Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom. The Agenda remains the world's roadmap for ending poverty, protecting the planet and tackling inequalities. The 17 Sustainable Development Goals (SDGs), the cornerstone of the Agenda, offer the most practical and effective pathway to tackle the causes of violent conflict, human rights abuses, climate change and environmental degradation and aim to ensure that no one will be left behind. The SDGs reflect an understanding that sustainable development everywhere must integrate economic growth, social well-being and environmental protection.	The DP should be influenced strongly by all of these themes and should seek to take the SDGs into account. The SEA should seek to promote the achievement of the sustainable development goals outlined in this plan.
United Nations (2016) The Paris Agreement (2016), Cancun Agreement (2011) and Kyoto Agreement (1997)	
The agreement represents key steps forward in capturing plans to reduce greenhouse gas emissions and to help developing nations protect themselves from climate impacts and build their own sustainable futures. It includes a shared vision to keep global temperature rise to below two degrees Celsius.	The SEA should consider the need for water companies to seek to promote a reduction in greenhouse gas emissions in carrying out its service activities.
World Commission on Environment and Development (1987) Our Common Future (The Brundtland Report)	
The Brundtland Report is concerned with the world's economy and its environment. The objective is to provide an expanding and sustainable economy while protecting a sustainable environment. The Report was a call by the United Nations: to propose long-term environmental strategies for achieving sustainable development by the year 2000 and beyond; to strengthen co-operation among developing countries and between countries at different stages of economic and social development to achieve common and mutually supportive objectives	The SEA and DP should seek to contribute to sustainable development

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
which take account of the interrelationships between people, resources, environment and development; to consider ways and means by which the international community can deal more effectively with environment concerns; and to help define shared perceptions of long-term environmental issues and the appropriate efforts needed to deal successfully with the problems of protecting and enhancing the environment, a long-term agenda for action during the coming decades, and aspirational goals for the world community.	
The World Heritage Convention (UNESCO) 1972 – a global instrument for the protection of cultural and natural heritage.	
A global instrument for the protection of cultural and natural heritage. Signatories commit themselves to refraining from 'any deliberate measures which might damage, directly or indirectly, the cultural and natural heritage' of their World Heritage Sites.	The DP and SEA should take account of the need to protect scheduled monuments and archaeological areas.
National	
Cadw, CCW and ICOMOS (UK) (International Council on Monuments and Sites) (2001), Register of Landscapes of Historic Importance	
Two-volume Register of Landscapes of Historic Interest in Wales. This advisory and non-statutory document highlights what are considered to be the best examples of different types of historic landscape in Wales and was the first step towards raising the profile of historic landscapes in Wales.	The DP and SEA should consider and take account of any potential impacts to heritage landscapes and assets.
Centre for Environment Fisheries and Aquaculture Science, Environment Agency and Natural Resources Wales (2023) Salmon Stocks and Fisheries in England and Wales 2023	
Annual reports on the status of salmon stocks and fisheries in England and Wales have been produced since 1997. These reports present a preliminary assessment for the most recent year to assist the International Council for the Exploration of the Sea (ICES) in providing scientific advice to the North Atlantic Salmon Conservation Organisation (NASCO) and to provide early feedback to fishery managers and anglers.	The DP should consider the information on salmon stocks and fisheries and the potential effects of DP measures on stocks and fisheries. The SEA should consider the effects of the DP on salmon stocks and fisheries and should include objectives and guide questions relating to the protection of salmon stocks and fisheries.
Climate Change Committee (2020) The path to Net Zero and progress on reducing emissions in Wales	
These documents are a series of reports on Wales's net zero carbon targets and ways in which Wales will achieve these targets. The December 2020 Advice Report: The path to a net zero Wales recommends that the Welsh Government revise targets and seek to reduce all greenhouse gas emissions to net zero by 2050.	The DP should seek to contribute to the reduction of the amount of carbon produced as much as possible and help towards achievement of net zero greenhouse gas emissions by 2050.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
One of the reports looks into how Wales is progressing against previous requirements to reduce its carbon footprint. Key to achieving these targets is: Adopting low-carbon solutions; Expanding low-carbon energy supplies; Reduce demand for high-carbon activities; and Transforming land away from agriculture	The SEA should have an objective relating to sustainable development that references the need to reduce greenhouse gas emissions.
Ancient Monuments and Archaeological Areas Act 1979	
This act addresses the protection of scheduled monuments including the control of works affecting scheduled monuments. It also addresses archaeological areas.	The DP and SEA should take account of the need to protect scheduled monuments and archaeological areas.
The Climate Change Act 2008	
This act sets carbon targets for 2050. Under The Climate Change Act 2008 (2019 Amendment) the UK is required to reduce all greenhouse gas emissions to net zero by 2050..	This target needs to be taken into account by the SEA.
Department for Culture, Media and Sport (DCMS) (2001) The Historic Environment – A Force for the Future *(archived)*	
This strategy outlines the Governments policy regarding the historic environment. The strategy has key aims and objectives that demonstrate the contribution the historic environment makes to the country's economic and social well-being.	The DP and the SEA should seek to ensure any adverse effects on heritage assets are minimised or avoided.
DCMS and Welsh Government (2007) Heritage Protection for the 21st Century	
The document has three core principles: • Developing a unified approach to the historic environment; • Maximising opportunities for inclusion and involvement; and • Supporting sustainable communities by putting the historic environment at the heart of an effective planning system.	The assessment framework should include objectives which take into account the principles of heritage protection.
DCMS (2013) Scheduled Monuments & Nationally Important but Non-Scheduled Monuments	
This policy statement sets out Government policy on the identification, protection, conservation and investigation of nationally important ancient monuments, under the provisions of the Ancient Monuments and	The DP should seek to avoid adverse impacts on scheduled and un scheduled monuments.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Archaeological Areas Act 1979. It includes principles relating to the selection of scheduled monuments and the determination of applications for scheduled monument consent.	The SEA assessment framework should include specific objectives relating to cultural heritage.
DCMS (2016) The Culture White Paper	
This white paper sets out how the government will support the cultural sectors over the coming years and how culture will play an active role in building a fairer and more prosperous nation. It includes four key themes: everyone should enjoy the opportunities culture offers, no matter where they start in life; the riches of our culture should benefit communities across the country; and the power of culture can increase our international standing. The white paper includes objectives relating to the development of the historic environment sector, and the protection of world heritage.	The DP should seek to protect cultural heritage assets. The SEA assessment framework should include an objective relating to cultural heritage.
Department for Energy Security and Net Zero (DESNZ) (2023) National Policy Statements for energy infrastructure	
Energy National Policy Statements provide planning guidance for developers of nationally significant energy infrastructure projects. The energy National Policy Statements cover: • the overarching needs case for different types of energy infrastructure • natural gas electricity generation • renewable electricity generation • gas and oil infrastructure • electricity networks • nuclear power generation The guidance makes it easier for decision makers, applicants and the wider public to understand: • government policy on the need for nationally significant infrastructure projects (NSIPs) • how applications for energy infrastructure will be assessed • the way in which impacts and mitigations will be judged	The DP must take account of the contents of the energy NPS. The impacts of the DP options on energy generation and NSIPs must be considered as part of the SEA.
DESNZ and BEIS (2020) Energy white paper: Powering our net zero future	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
The White Paper follows on from the Prime Minister's Ten Point Plan and the National Infrastructure Strategy. The Energy White Paper provides further clarity on the Prime Minister's measures and puts in place a strategy for the wider energy system that: • Transforms energy, building a cleaner, greener future for the country, its people and the planet • Supports a green recovery, growing the economy, supporting green jobs across the country in new green industries and leveraging new green export opportunities • Creates a fair deal for consumers, protecting the fuel poor, providing opportunities to save money on bills, providing warmer, more comfortable homes and balancing investment against bill impacts	The DP should consider if it can support the delivery of the aims of the white paper. The SEA should include objectives and guide questions relating to energy use and carbon emissions.
DESNZ and BEIS (2021) Heat and buildings strategy	
This strategy sets out how the UK will decarbonise our homes, and our commercial, industrial and public sector buildings, as part of setting a path to net zero by 2050. The heat and buildings strategy sets out the government's plan to significantly cut carbon emissions from the UK's 30 million homes and workplaces in a simple, low-cost and green way whilst ensuring this remains affordable and fair for households across the country. Like the transition to electric vehicles, this will be a gradual transition which will start by incentivizing consumers and driving down costs. There are about 30 million buildings in the UK. Heating these buildings contributes to almost a quarter of all UK emissions. Addressing the carbon emissions produced in heating and powering our homes, workplaces and public buildings can not only save money on energy bills and improve lives but can support up to 240,000 skilled green jobs by 2035, boosting the economic recovery, levelling up across the country and ensuring we build back better.	The DP should consider the impact of water supply and usage on carbon emissions from buildings. The SEA should include objectives and guide questions relating to energy use and carbon emissions.
Department for Energy and Climate Change (2021) Net Zero Strategy: Build Back Greener	
The Net Zero Strategy sets out policies and proposals for keeping the UK on track for carbon budgets, the Nationally Determined Contribution (NDC), and sets out our vision for a decarbonised economy in 2050. The Strategy sets out a delivery pathway showing indicative emissions reductions across sectors to meet targets up to the sixth carbon budget (2033-2037).	The DP should consider if it can support the delivery of the aims of the strategy. The SEA should include objectives and guide questions relating to energy use and carbon emissions.
Defra (2023) Unleashing Rural Opportunity	
The policy paper outlines a comprehensive plan to support growth and prosperity in rural areas. It focuses on four key priorities: growing the rural economy, enhancing connectivity, improving homes and energy, and strengthening communities.	The implementation of certain DP options may have an effect upon rural communities and the countryside. The SEA should also seek to ensure that the quality of the region's landscapes, natural resources and biodiversity are maintained or enhanced.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Defra (2024) Delivering rural opportunity: third report on rural proofing	
This policy paper provides an update on the implementation of rural-focused policies across England. Building upon the 2023 strategy "Unleashing Rural Opportunity," it evaluates progress in four key areas: growing the rural economy, enhancing connectivity, improving homes and energy, and strengthening communities	The SEA should also seek to ensure that the quality of the region's landscapes, natural resources and biodiversity are maintained or enhanced.
Defra (2005) Making space for water: taking forward a new government strategy for flood and coastal erosion risk management in England	
The strategy outlines how to manage the risks from flooding and coastal erosion in the UK. The strategy aims to reduce the threat of flooding to people and their property, and to deliver the greatest environmental, social and economic benefit, consistent with the Government's sustainable development principles.	The SEA should seek to ensure that flood risk in the region is not adversely affected by the implementation of the DP.
Defra (2006) Shoreline Management Plan Guidance	
A shoreline management plan (SMP) is a coastal defence management tool. It is a large-scale assessment of the risks associated with coastal processes and helps to reduce these risks to people and the developed, historic and natural environment. This guidance document sets out Defra 's and the Welsh Government's strategy for managing flooding and coastal erosion.	The SEA should take into account the effects of the DP on areas with a SMP.
Defra (2007) The Air Quality Strategy for England, Scotland and Wales	
This strategy identifies air quality objectives and policy options to further improve air quality in the UK from into the long term. The options are intended to provide important benefits to quality of life and help protect the environment as well as the direct benefits to public health.	The implementation of the DP may have some influence on air quality, either directly or indirectly through construction or operation activities. The SEA should seek to ensure that the region's air quality is maintained or enhanced, and that emissions of air pollutants are kept to a minimum.
Defra (2009) Safeguarding our soils – A Strategy for England	
The new Soil Strategy for England – Safeguarding our Soils – outlines the Government's approach to safeguarding our soils for the long term. It provides a clear vision to guide future policy development across a range of areas and sets out the practical steps that we need to take to prevent further degradation of our soils, enhance, restore and ensure their resilience, and improve our understanding of the threats to soil and best practice in responding to them. The Governments vision is that: By 2030, all England's soils will be managed sustainably and degradation threats tackled successfully. This will improve the quality of England's soils and safeguard their ability to provide essential services for future generations.	The SEA should seek to ensure that the quality of the regions soils and their management is protected or enhanced.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Defra (2009) The Groundwater (England and Wales) Regulations 2009	
The Groundwater Regulations are designed to implement a daughter directive to the European Water Framework Directive and prevent or limit the inputs of polluting substances into groundwater.	The SEA should include an objective relating to the effects of options on groundwater quality.
Defra, Department of the Environment (NI), Scottish Government and Welsh Assembly Government (2010) Air Pollution: Action in a Changing Climate	
This document highlights the health benefits that can be achieved through closer integration of air quality and climate change policies. Air pollution often originates from the same activities that contribute to climate change (notably transport and electricity generation), so linkages between these policy areas could help ensure that they are managed most effectively. Air quality/climate change co-benefits can be realised through actions such as promoting low-carbon vehicles and renewable sources of energy that do not involve combustion. The document aims to set ambitious but realistic air quality targets, and to ensure that climate and air quality targets are better aligned in future.	The DP should seek to ensure that air quality, climate change and human health are not adversely affected by the options/measures set out in the plan. The SEA should include guide questions relating to the effects of options on human health and the environment.
Defra (2011) UK National Ecosystem Assessment Defra (2014) UK National Ecosystems Assessment Follow on, Synthesis of Key Findings	
Ecosystems services from natural capital contribute to the economic performance of the nation. Information and tools to enable decision makers to understand the wider value of ecosystems and their associated services.	For the purposes of the readership integrating an ecosystems services approach into the SEA is not being undertaken. However, it is realised that through the 'Objective-led' approach, many of the services relevant to the DP can be considered through the objectives and key questions for example: Provisioning Services: Freshwater Provisioning Services: Biodiversity Regulating Services: Water Regulation Cultural services: Recreation and ecotourism Cultural services: Cultural heritage values Cultural services: Aesthetic The SEA should ensure the DP effects the related provisioning services in the least damaging way through informing the DP formulation and selection of DP options during times of Drought.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
	In the event of further guidance being issued on incorporating ESA into SEA, the anticipated approach is sufficiently flexible that it should be able to accommodate this (subject to timing).
Defra (2011) Mainstreaming Sustainable Development	
This document sets out the Government's vision for mainstreaming sustainable development in relation to the operation of its buildings and estates, including the goods and services that it buys and the policies it makes. It builds on the principles that underpinned the UK's 2005 sustainable development strategy and highlights that long term economic growth relies on protecting and enhancing the environmental resources that underpin it, and paying due regard to social needs. It sets out measures to achieve the mainstreaming of sustainable development, which include ministerial leadership and oversight; leading by example; embedding sustainable development in government policy; and transparency and independent scrutiny.	The DP should seek to be aligned with the principles of sustainable development. The SEA assessment framework should include objectives relating to the principles of sustainable development, including communities, economy, and environment.
Defra (2012) National Policy Statement for Waste Water	
This National Policy Statement (NPS) sets out Government policy for the provision of major waste water infrastructure. It will be used by the Infrastructure Planning Commission (IPC) to guide its decision making on development consent applications for waste water developments that fall within the definition of Nationally Significant Infrastructure Project (NSIP) as defined in the Planning Act 2008. As well as considering the general need for new waste water infrastructure, this NPS covers two NSIPs which have been assessed as required to meet this need although these do not fall within the UU operational area or neighbouring areas.	The DP should be compliant with the policies set out within the National Policy Statement. The DP should also consider any unforeseen NSIP proposals that come forward prior to adoption which may affect water resource management in UU area. The SEA should consider the cumulative effects of the DP and any unforeseen NSIP proposals that come forward which may affect water resource management in the UU area.
Defra (2013) What nature can do for you	
This guide is designed to help policy makers across Government to understand: • The value of what nature, • The costs and risks if take the value of nature's services are not considered in our decisions, • How to work with natural systems to help deliver efficiently in the future. The guide is focussed on helping policy makers to put this into practice and includes explanation of the principles of an ecosystems approach and details on how an ecosystems approach can help policy makers to take account of the value of the natural environment at every stage of the policy making process. A 'self-assessment' method is provided to help policy makers to see how they are doing already and what could be gained by doing more to understand how the natural environment interacts with their policy issue, Signposting is given to a range of detailed resources, case-studies and further reading on specific topics such as valuation and systematic thinking.	The DP should consider how to work with natural systems to provide efficient solutions with multiple benefits where possible, aiming to implement an ecosystems approach. The SEA should consider the effects of the DP on nature.

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Defra (2013) The National Adaptation Programme – Making the Country Resilient to a Changing Climate	
This Programme contains a mix of policies and actions to help adapt successfully to future weather conditions, by dealing with the risks and making the most of the opportunities. It sets out a number of objectives, including: To provide a clear local planning framework to enable all participants in the planning system to deliver sustainable new development, including infrastructure that minimises vulnerability and provides resilience to the impacts of climate change. To increase the resilience of homes and buildings by helping people and communities to understand what a changing climate could mean for them and to take action to become resilient to climate risks. To ensure infrastructure is located, planned, designed and maintained to be resilient to climate change, including increasingly extreme weather events.	The DP should ensure that proposals are resilient to the effects of climate change. Where possible, options should be considered that enhance resilience. The SEA should consider the effects of options on climate change resilience.
Defra (2015) The Great Britain Invasive Non-native Species Strategy	
The Strategy is intended to provide a strategic framework, updated from the 2008 framework, within which the actions of government departments, their related bodies and key stakeholders can be better co-ordinated. Its overall aim is to minimise the risks posed, and reduce the negative impacts caused, by invasive non-native species in Great Britain.	The implementation of the DP may influence biodiversity in the north west and as such the SEA should seek to maintain or enhance the quality of habitats and biodiversity.
Defra (2018) The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting	
The National Adaptation Programme (NAP) sets the actions that government and others will take to adapt to the challenges of climate change in the UK. It sets out key actions for the next 5 years. Flooding and pressure on water services are considered to be cross cutting risks. The report also details how the third cycle of adaptation reporting will be managed, forming part of the five-yearly cycle of requirements laid down in the Climate Change Act 2008.	The DP should ensure that proposals are resilient to the effects of climate change. Where possible, options should be considered that enhance resilience. The SEA should consider the potential to include adaptive measures for climate change.
Defra (2025) Drought Plan Direction 2025	
Sets out the timescales for water companies to develop and consult on Drought Plans.	The DP SEA will take account of the statutory requirements of this Direction, where relevant.
Defra (2012) The UK Climate Change Risk Assessment 2012 Evidence Report	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Five themes are identified that form the priorities for adaptation in the UK.	The SEA should take into account the need for climate change adaptation.
Defra (2009) Safeguarding our soils – A Strategy for England	
The new Soil Strategy for England – Safeguarding our Soils – outlines the Government's approach to safeguarding our soils for the long term. It provides a clear vision to guide future policy development across a range of areas and sets out the practical steps that we need to take to prevent further degradation of our soils, enhance, restore and ensure their resilience, and improve our understanding of the threats to soil and best practice in responding to them. The Governments vision is that: By 2030, all England's soils will be managed sustainably and degradation threats tackled successfully. This will improve the quality of England's soils and safeguard their ability to provide essential services for future generations.	The SEA should seek to ensure that the quality of the regions soils and their management is protected or enhanced.
Defra (2025) Environmental Improvement Plan 2025	
The Environmental Improvement Plan 2025 (EIP25) is the UK Government's statutory update to the Environmental Improvement Plan 2023, as mandated by the Environment Act 2021. It is a cross-government plan designed to restore nature, improve environmental quality and security, build a circular economy, and increase public access to nature. It sets out 10 long-term environmental goals, updated targets, and, for the first time, detailed Environment Act Target Delivery Plans, clarifying how each goal will be achieved, by whom, and how progress will be monitored. The plan comprises ten Environmental Goals with specific targets, grouped into five thematic chapters: • Restored Nature (Goal 1: Thriving plants and wildlife) • Environmental Quality (Goals 2-4: Clean air, Clean and plentiful water, Managing exposure to chemicals and pesticides) • Circular Economy (Goal 5: Maximise our resources, minimise our waste and Goal 6: Using resources from nature sustainably) • Environmental Security (Goal 7: Mitigating and adapting to climate change, Goal 8: Reduced risk of harm from environmental hazards and Goal 9: Enhancing biosecurity) • Access to Nature (Goal 10: Enhanced beauty, heritage, and engagement with the natural environment)	The SEA should ensure that the goals included in the plan are also reflected in the SEA objectives.
Defra (2026) A new vision for water: white paper	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
The 2026 White Paper provides a comprehensive reform blueprint, aiming to: • Rebuild the water sector's infrastructure, • Restore the environment, • Strengthen regulation, • Improve customer fairness, and • Create a more coherent, efficient and accountable water system for the long term.	The DP and SEA must take into account the objectives of the white paper and align with any reforms as they are implemented.
Defra (2026) Enabling a Natural Capital Approach guidance	
This guidance is intended for those looking to learn about natural capital and how to apply it. It forms part of a suite of Defra resources collectively called 'Enabling a Natural Capital Approach' (ENCA). ENCA is recommended for use by HM Treasury's Green Book: appraisal and evaluation in central government (2026) and represents supplementary guidance to the Green Book. Natural capital has a wide range of applications and so this guidance aims to meet the needs of various users.	The SEA must consider the principles of natural capital and the impact the drought plan could have on this.
Defra and Environment Agency (2019) How to Write and Publish a Drought Plan, Consultation draft.	
This sets out how to assess the environmental effects of actions to maintain supply and how to mitigate. An environmental assessment must include details of changes as a result of actions to: • Water flow or level regimes • Water quality • Ecology (sensitive features, habitats and species) • Designated sites (habitats and species) • Fish populations (in particular migratory fish) Additionally, an assessment must include effects on WFD status and consider effects on river basin management plans. Assessments should also take into account the Handbook for Scoping Projects: Environmental Assessment and the EcIA Guidelines. For SEAs of a DP, guidance should be followed in the DCLG (2005) Practical Guide to the Strategic Environmental Assessment Directive and UKWIR (2012) Strategic Environmental Assessment and Habitats Regulations Assessment: WRMPs and DPs. Need to identify what needs to be done to mitigate or reduce adverse effects and provide compensation for effects that remain following mitigation. This includes the identification of pre-drought, in-drought and post drought mitigation actions.	The SEA must take into account the approach to environmental assessment and what needs to be done to mitigate or reduce adverse effects and provide compensation for effects that remain following mitigation.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Environment Agency (2025) Environmental assessment for water company drought planning supplementary guidance	
This supplements the guidance provided on how to write and publish a drought plan. It provides technical guidance on how to develop an environmental assessment for supply side drought management actions to support a Drought Plan. It includes the need to consider whether an SEA is required for a drought plan.	The Drought Plan and SEA need to take account of the guidance provided by the Environment Agency
Natural Resources Wales (2024) Water company drought plan – technical guidance	
This is the guidance on how to write and publish a drought plan in Wales. Provides technical guidance for water companies and New Appointments and Variation (NAV) companies to assist with the production of statutory water company drought plans. It also covers requirements for water retailers for informing these plans.	This guidance provides technical guidance on how to write and publish a drought plan.
Natural Resources Wales - Our corporate plan to 2030: nature and people thriving together	
This plan sets out Wales's vision of nature and people thriving together. The collective action put forward in this plan pertains to: • nature's recovery • resilience to climate change • minimising pollution through the sustainable management of our natural resources.	The DP should align with the NRW's goal to ensure the sustainable management of resources in Wales.
Natural Resources Wales (2020) National Peatland Action Programme	
This is a 5-year plan for peatland restoration in Wales. The programme has six priority areas: Peatland erosion Peatland drainage Sustainable management of blanket peats Sustainable management of lowland peats The restoration of afforested peatlands The gradual restoration of our highest carbon-peatlands	The DP and the SEA should ensure that peatland areas in Wales are protected and maintained.
Natural Resources Wales (2020) Area Statements and Opportunity Catchments	
Natural Resources Wales has prepared Area Statements for seven separate diverse parts of the country including the South East, South Central, South West, Mid, North East and North West Wales. These statements set out the challenges in these parts and how they can be managed for future generations.	The Drought Plan should seek to support the outcomes of these regional statements where relevant.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Defra (2016) Guiding principles for water resources planning for water companies operating wholly or mainly in England	
This identifies the key policy priorities to be addressed in WRMPs. This includes protecting and enhancing the environment and the promotion of efficient water use and reducing leakage.	The DP is closely aligned to the DP, and the SEA needs to take account of this guidance.
Department for Transport (2022) UK Electric Vehicle Infrastructure Strategy	
This strategy sets out the Department for Transport's vision and action plan for the rollout of electric vehicle charging infrastructure in the UK, ahead of the phase out dates. They intend: to end the sale of new petrol and diesel petrol and diesel vehicles by 2030 for all new cars and vans to be fully zero emission at the tailpipe by 2035	The DP should consider use of zero emission vehicles when delivering options where applicable. The SEA should also promote the use of renewable energy, where relevant
Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government) (2014) National Planning Policy for Waste	
Sets out detailed waste planning policies for local authorities. States that planning authorities need to: Use a proportionate evidence base in preparing Local Plans Identify sufficient opportunities to meet the identified needs of their area for the management of waste streams Identify suitable sites and areas for waste facilities	The DP may need to consider the potential impact of options on waste generation and on waste management facilities in the DP area. The SEA should consider the effects of the DP on waste generation and management capacity.
Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2015) Renewable and Low Carbon Energy	
Increasing the amount of energy from renewable and low carbon technologies will help to make sure the UK has a secure energy supply, reduce greenhouse gas emissions to slow down climate change and stimulate investment in new jobs and businesses. Planning has an important role in the delivery of new renewable and low carbon energy infrastructure in locations where the local environmental impact is acceptable.	The DP should, where possible, contribute towards increasing the proportion of energy from renewable energy sources. The SEA assessment framework should include consideration of the use of energy from renewable energy sources.
Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local (2023) National Planning Policy Framework	
The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. The National Planning Policy Framework constitutes guidance for local planning authorities and decision takers both in drawing up plans and as a material consideration in determining applications. At the heart of the NPPF is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking. The NPPF requires that the planning system should be genuinely plan-led and that plans should:	The DP and SEA should take account of the key components of sustainable development and consider the three dimensions to sustainable development: economic, social and environmental.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
be prepared with the objective of contributing to the achievement of sustainable development; be prepared positively, in a way that is aspirational but deliverable; be shaped by early, proportionate and effective engagement between planmakers and communities, local organisations, businesses, infrastructure providers and operators and statutory Consultees; contain policies that are clearly written and unambiguous, so it is evident how a decision maker should react to development proposals; be accessible through the use of digital tools to assist public involvement and policy presentation; and serve a clear purpose, avoiding unnecessary duplication of policies that apply to a particular area (including policies in this Framework, where relevant).	
Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local (various) Planning Practice Guidance	
Planning Practice Guidance (PPG) is designed to support the NPPF. It reflects the objectives of the NPPF which are not repeated here. PPG provides additional planning guidance on a number of topics. Those that are particularly relevant to the DP include: Air quality; Appropriate assessment; Climate change; Effective use of land; Flood risk and coastal change; Healthy and safe communities; Historic environment; Natural environment; Open space, sports and recreation facilities, public rights of way and local green space; SEA and sustainability appraisal; and, Water supply, wastewater and water quality.	The DP should take into consideration guidance set out in the PPG insofar as it relates to the area covered by the DP.
Environment Agency (2013), *Managing Water Abstraction*	
This sets out how the EA manages water resources in England and Wales.	The SEA should consider the range of impacts that changes to abstractions could have on the environment, including water bodies, biodiversity, and water users.
Environment Agency (2011) National Flood and Coastal Risk Management Strategy for England	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
This strategy provides the overarching framework for future action by all risk management authorities to tackle flooding and coastal erosion in England, building on existing approaches. Risk should be managed in a co-ordinated way within catchments and along the coast and balance the needs of communities, the economy and the environment. This strategy will form the framework within which communities have a greater role in local risk management decisions and sets out the Environment Agency's strategic overview role in flood and coastal erosion risk management (FCERM).	The SEA should ensure the DP contributes to the reduction in flood risk and coastal erosion
Environment Agency (2010), *Water Resources Action Plan for England and Wales*	
The strategy has four main aims: • Adaptation to and mitigation of climate change; • A better water environment; • Sustainable planning and management of water resources; • People valuing water and the water environment.	The SEA should seek to ensure that strategy objectives are also reflected in the SEA objectives particularly regarding the sustainable management of water resources and protecting the environment.
Environment Agency (2009), *Water Resources Strategy for England and Wales*	
Launched on 30 March 2009, covering the actions that the Environment Agency believes need to be taken to ensure that there is enough water for people and wildlife in the face of future pressures. These include: • climate change • population growth • diffuse pollution • water for wildlife and wetlands The strategy looks at resource management for Wales to 2050 and beyond.	The SEA should seek to ensure that strategy objectives are also reflected in the SEA objectives, particularly around water resource use and availability in the region.
Environment Agency (2007) Soil: A Precious Resource	
The soil strategy identifies the Environment Agency's priorities, sets out their role and says what action is to be taken to protect, manage and restore soil. Damaged soil structure can lead to flooding, water pollution and can affect the landscape and archaeological features. The strategy also outlines the part managing soils can play in mitigating climate change.	The DP should ensure the sustainable management of soil resources. SEA objectives should reflect and consider relevant priorities from the Soil: A Precious Resource publication.
Environment Agency (2004) *Catchment Flood Management Plans: Guidelines – Volume 1 Policy*	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
These guidelines support the EA's strategy for flood risk management and work towards achieving the government's strategy for flood and coastal erosion flood risk management. The aims of Catchment Flood Management Planning are: • To promote sustainable flood risk management measures • To reduce the sources of flooding and harm to people, and the natural, built and historic environment caused by floods • To support the delivery of the Government's and others' policies and targets, and the Environment Agency's environmental vision.	The DP links to this plan where it affects flood risk or land management, for example through changes in abstraction or water storage. The SEA should consider how the DP may affect flood risk across the region.
Environment Agency and Natural Resources Wales (2018), *Water Resources Planning Guideline: Interim update*	
Technical guidelines published jointly by the Welsh Government, NRW, Defra, Environment Agency and Ofwat for the 2019 Water Resource Management Plans for England and Wales.	The SEA should seek to ensure that water supplies and resources are maintained or enhanced in line with the Water Resources Planning Guidelines.
Environment Agency, *Shoreline Management Plans*	
A large-scale assessment of the risks associated with coastal processes with the aim to help reduce these risks to people and the developed, historic and natural environments. Coastal processes include tidal patterns, wave height, wave direction and the movement of beach and seabed materials. The second generation of Shoreline Management Plans (SMPs) are in production, covering the entire 6000 kilometres of coast in England and Wales. This generation of plans aim to incorporate sea level rise resulting from climate change and current defences with limited life and improvement requirements.	The SEA should seek to promote a reduction of the risks identified in the Shoreline Management Plans.
Environment Agency (undated), *WFD River Basin Characterisation Project: Technical Assessment Method - River abstraction and flow regulation*	
This paper describes the method used to assess the likelihood of river water bodies achieving the relevant WFD objectives as a result of artificial influences on low river flows.	Implementation of the DP may impact river water quality. The SEA should seek to promote the protection and enhancement of biodiversity and river water quality across the region.
Environment Agency (undated) Hydroecology: Integration for modern regulation	
This paper describes clear way forward in terms of hydroecology and a strategic direction to its development and application.	The DP and SEA should ensure relevant ecological considerations are integral to water resource evaluation and management decisions across the range of temporal and spatial scales.

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Environment Agency Wales (now Natural Resources Wales), Salmon Action Plans	
The Environment Agency and Natural Resources Wales have prepared a series of action plans, based on river catchments, setting out what needs to be done to support and restore salmon populations. A total of 63 plans were being prepared for salmon rivers in England and Wales by 2002 as part of the Agency's National Salmon Management Strategy. The Plans identify and cost a series of actions designed to help safeguard and improve Salmon populations. A revised approach for the protection of wild salmon has been determined by Natural Resources Wales, and an action plan is being developed.	The SEA should seek to maintain or enhance the quality of habitats and biodiversity particularly those of Salmon identified in the Action Plans. The SEA will cover fish passage as an element of at least one sustainability objective.
Welsh Government (2016) Environment Act (Wales)	
Puts in place legislation needed to plan and manage Wales's natural resources in a more proactive, sustainable and joined-up way. This positions Wales as a low carbon, green economy, ready to adapt to the impacts of climate change. Key parts of the act include: • Sustainable management of natural resources. • Climate change - powers to put in place statutory emission reduction targets (including at least an 80% reduction in emissions by 2050) and carbon budgeting. • Improvements to waste management processes. • Fisheries, shellfish and marine licensing. • Clarifications regarding flood risk management and land drainage. Section 6 contains Biodiversity and resilience of ecosystems duty and states public authorities must seek to maintain and enhance biodiversity in the exercise of functions and promote the resilience of ecosystems.	The SEA should seek to ensure that this legislation is reflected in the SEA objectives particularly regarding biodiversity and the sustainable management of natural resources.
English Heritage, now known as Historic England (2016) Heritage at Risk	
Heritage at Risk is a national project that aims to identify the endangered sites (historic buildings and places with increased risks of neglect and decay) and then help secure them for the future. Regional Heritage at Risk Registers were most recently published in 2017.	The SEA should seek to protect and enhance heritage and landscape.
English Heritage, now known as Historic England (2008) Climate Change and the Historic Environment	
Sets out the current thinking on the implications of climate change for the historic environment. It is intended both for the heritage sector and also for those involved in the wider scientific and technical aspects of climate	The SEA should seek to assess the implications of the DP in combination with climate change and the potential impacts on heritage and the historic environment.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
change; in the development of strategies and plans relating to the impact of climate change; or in projects relating to risk assessment, adaptation and mitigation.	
Flood and Water Management Act, 2010 as amended	
The Flood and Water Management Act 2010 aims to provide better, more comprehensive management of flood risk for people, homes and businesses. It aims improve efficiency in the water industry, improve the affordability of water bills for certain groups and individuals, and help ensure continuity of water supplies to the consumer.	The SEA should seek to ensure that flood risk in the region is not adversely affected by the implementation of the DP and that water supplies across the region are maintained.
Historic England (2015) Historic Environment Good Practice Advice in Planning Note 3	
This provides guidance on managing change within settings of heritage assets. This includes archaeological remains, historic buildings, sites, areas and landscapes.	The SEA should take into account effects on settings of heritage assets.
Historic England (2013) Strategic Environmental Assessment, Sustainability Appraisal and the Historic Environment	
Guidance for addressing the historic environment in Strategic Environmental Assessment or Sustainability Appraisal. It identifies the recommended list of plans, programmes and policies for review, approach to baseline review, potential sustainability issues.	The SEA should consider the potential effects of the DP on the historic environment, particularly designated assets and their settings, and to important wetland areas with potential for paleo-environmental deposits. Historic characterisation can supplement information about designations. Sustainability issues, objectives and indicators identified in this document should be taken into account in the SEA.
HM Government (1975) Reservoirs Act	
The Reservoirs Act 1975 provides a legal framework to ensure the safety against failure of large, raised reservoirs. The act applies to reservoirs that hold at least 25,000 cubic metres of water above natural ground level. Safety legislation for reservoirs in the United Kingdom was introduced in 1930 after several reservoir disasters had resulted in loss of life. This law was superseded by the Reservoirs Act 1975. Under the Reservoirs Act 1975 reservoir owners (undertakers) have ultimate responsibility for the safety of their reservoirs. Reservoir owners must appoint a panel engineer (a specialist civil engineer who is qualified and experienced in reservoir safety) to supervise the design and construction of the reservoir, to continuously supervise the reservoir when built (supervising engineer) and to carry out periodic inspections (inspecting engineer).	The DP should consider any effects of options on reservoirs capacity, functioning and downstream flows.
HM Government (1975) Salmon and Freshwater Fisheries Act 1975	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
The act encompasses fishing regulation, as well as illegal obstruction of migratory pathways and prohibited modes of destroying fish. The act allows the salmon to maintain an environmentally stable population and support the fishing industry.	The SEA and DP should consider the protection of salmon and freshwater fish.
HM Government (1979) Ancient Monuments and Archaeological Areas Act 1979	
The Act defines sites that warrant protection as ancient monuments. They can be a Scheduled Monuments or "any other monument which in the opinion of the Secretary of State is of public interest by reason of the historic, architectural, traditional, artistic or archaeological interest attaching to it".	The DP is unlikely to impact on Scheduled Monuments; however, the SEA assessment framework should include consideration of Scheduled Monuments
HM Government (1981) *Wildlife and Countryside Act, 1981*	
The Act is the principal mechanism for providing legislative protection of wildlife in Great Britain. Species listed in Schedule 5 of the Act are protected from disturbance, injury, intentional destruction or sale. Other provisions outlaw certain methods of taking or killing listed species. This Act is brought up to date regularly to ensure the most endangered animals are on the schedule. The Act also improved protection for the most important wildlife habitats.	Some aspects of the DP may have effects on habitats and species in the UU supply area and beyond. The SEA should seek to maintain or enhance the quality of habitats and biodiversity and take regard of protected species and habitats.
HM Government (1990) Planning (Listed Buildings and Conservation Areas) Act 1990	
This addresses listed buildings including prevention of deterioration and damage and preservation and enhancement of conservation areas.	The DP and SEA should take account of the need to protect listed buildings and conservation areas.
HM Government (1990) Environmental Protection Act	
The Act defines the legal framework for England, Wales and Scotland regarding environmental protection, including the duty of care for waste, contaminated land, and statutory nuisance. Under the Act, Local Authorities or private individuals may take action to secure abatement of any such nuisance, such as noise, and only one person need be affected for action to be possible. It also specifies offences related to the storage, movement, treatment or disposal of controlled waste, and sets out the regime for identifying and remediating contaminated land.	The DP must ensure compliance with the Act. The SEA assessment framework should include waste and nuisance.
HM Government (1990) Town and Country Planning Act 1990	
The Town and Country Planning Act controls and consents development, which is defined as building, engineering, mining or other operations in. on, over or under land, or the making of any material change in the use of any building or land.	The DP must ensure full compliance with the Act. The SEA should include objectives and guide questions relating to biodiversity, land use, and landscape.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
HM Government (1991) Water Industry Act 1991 was amended by the commencement of Section 36 of the Flood and Water Management Act 2010	
This makes provision for general duties of water undertakers including those associated with Water Resources Management Plans and sets out supply duties.	The DP must take into account this legislation.
HM Government (2009) Water Resources Act, 1991 (Amendment) (England and Wales) Regulations 2009 SI3104	
Amends Water Resources Act 1991 by extending the use of Water Protection Zones and Works Notices, in particular to deal with harm to aquatic ecosystems caused by the physical characteristics of a water course or lake, such as quantity, structure and substrate of river/lake bed. Aligns the Water Resources Act with the hydromorphological requirements of the WFD	The SEA should include objectives that cover hydromorphological aspects and seek to ensure that hydromorphological features within the plan are maintained or enhanced.
HM Government (1991 and 1994) Land Drainage Act	
The Land Drainage Act 1991 requires that a watercourse be maintained by its owner in such a condition that the free flow of water is not impeded. The riparian owner must accept the natural flow from upstream but need not carry out work to cater for increased flows resulting from some types of works carried out upstream, for example a new housing development. If a riparian owner fails to carry out his responsibilities under the Land Drainage Act, or if anyone else causes a watercourse to become blocked or obstructed, the County and District Councils have powers of enforcement by serving a notice under the Act. If this is ignored, the Council concerned may carry out the necessary itself and then recharge the person responsible for the full cost incurred. The District Council normally implements these powers but the County Council will deal with problems that affect the highway. The person responsible may also be prosecuted for nuisance under the Public Health Act 1936. The 1994 Act amends the Land Drainage Act of 1991 in relation to the functions of internal drainage boards and local authorities.	The DP should be prepared in accordance with the act.
HM Government (1994) The Conservation (Natural Habitats, &c.) Regulations 1994	
These regulations transposed European Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) into national law. The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.	The DP should seek to protect European sites and species. The SEA assessment framework should include objectives and guide questions relating to the protection of European sites and species, as well as biodiversity more generally.
HM Government (1994) Urban Waste Water Treatment (England and Wales) Regulations 1994	
The Regulations transposed the requirements of the Urban Waste Water Treatment Directive 91/271/EEC (as amended). The Regulations impose requirements for: collection systems for treated urban waste wate;	The DP should reflect the requirements set out in the regulations.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
discharges from treatment plants and sets out methods for monitoring; and makes provisions with regard to discharges of industrial wastewater and the dumping of sludge from ships.	
HM Government (2000) The Countryside and Rights of Way (CROW) Act, 2000	
The Act provides for increased public access to the countryside and strengthens protection for wildlife. The main provisions of the Act are as follows: • Extends the public's ability to enjoy the countryside whilst also providing safeguards for landowners and occupiers • Creates new statutory right of access to open country and registered common Land Use Consultants • Modernises Right of Way system • Gives greater protection to SSSIs • Provides better management arrangements for National Landscapes • Strengthens wildlife enforcement legislation.	The DP may have an effect on public access to the countryside. The SEA should include objectives that take into account public access, protection of SSSIs and the management of relevant landscape designations.
HM Government (2002) The National Heritage Act 2002	
This Act builds on the preceding National Heritage Acts of 1980, 1983 and 1997. All four Acts define the way in which National heritage assets are managed and protected. The 2002 Act extended the powers of the Historic Buildings and Monuments Commission to include underwater archaeology within the territorial waters of the United Kingdom.	The DP should be compliant with the Act. The SEA should include objectives relating to the protection of heritage features.
HM Government (2006) Climate Change and Sustainable Energy Act 2006	
The Act was enacted after the publication of the UK Climate Change Programme (2006). It places an obligation on the government to report to Parliament on greenhouse gas emissions in the UK and action taken by Government to reduce these emissions.	The DP should take into account carbon emissions associated with the measures. The SEA could include an objective/guide question in the assessment framework to reduce greenhouse gas/carbon dioxide emissions. Consider whether the monitoring arrangements can be utilised to monitor the effects of the DP.
HM Government (2007) Water Resources Management Plan Regulations 2007	
These Regulations set out the process for the preparation of WRMPs.	The DP should consider these regulations, where relevant.
HM Government (2008) Planning Act 2008	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
This Act introduced a new system for nationally significant infrastructure planning, alongside further reforms to the Town and Country Planning system.	The DP should consider any unforeseen NSIP proposals that come forward prior to adoption which may affect water resources in the region. The SEA should consider the cumulative effects of the DP and any unforeseen NSIP proposals that come forward which may affect water resources in the region.
HM Government (2009) Marine and Coastal Access Act 2009	
The Marine and Coastal Access Act sets out a number of measures, including the establishment of Marine Conservation Zones (MCZs) and Marine Spatial Plans.	The DP should have regard to effects on coastal areas. The SEA should take into account the effects of the measures of coastal environments where relevant.
HM Government (2009) The UK Renewable Energy Strategy	
The Strategy sets out to: Put in place the mechanisms to provide financial support for renewable electricity and heat worth around £30 billion between up to 2020; Drive delivery and clear away barriers; Increase investment in emerging technologies and pursue new sources of supply; and Create new opportunities for individuals, communities and business to harness renewable energy.	The DP should contribute towards increasing the proportion of energy from renewable energy sources, where possible. The SEA assessment framework should include consideration of the use of energy from renewable energy sources.
HM Government (2011) Localism Act 2011	
The Localism Act provides greater devolved powers to councils and neighbourhoods and gives local communities more control over housing and planning decisions.	The DP and the SEA Environmental Report will be subject to public consultation.
HM Government (2011) UK Marine Policy Statement	
The Marine Policy Statement (MPS) sets out the framework for preparing Marine Plans and taking decisions affecting the marine environment, supporting the delivery of the following high-level marine objectives:	The DP should take into account its effects on coastal areas.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Achieving a sustainable marine economy; Ensuring a strong, healthy and just society; Living within environmental limits; Promoting good governance; Using sound science responsibly. Does not contain any targets.	The SEA assessment should take into account the effects of the actions on the coast/marine environment where relevant.
HM Government (2013) The Energy Act 2013	
This provides the legislative framework for delivering secure, affordable and low carbon energy. It includes provisions for decarbonisation,	The implementation of the DP may have an influence upon UU' total energy use. The SEA should seek to promote energy efficiency, as well as seeking to reduce the effects of climate change through greenhouse gas emissions. The SEA should also promote the use of renewable energy, where relevant.
HM Government (2015) Infrastructure Act 2015	
The Infrastructure Act (inter alia) gives environmental authorities new powers to require landowners to take action on invasive non-native species or permit others to enter the land and carry out those operations.	The SEA assessment framework should include guide questions relating to invasive species.
HM Government (2015) The Nitrate Pollution Prevention Regulations 2015	
These regulations consolidate and revoke previous regulations on Nitrate Pollution Prevention (namely the 2008 Nitrate Pollution Prevention Regulations and subsequent amendments). The continue to provide for the implementation of EU Directive 91/676/EEC on the protection of waters against pollution by nitrates from agricultural sources, and Decision 2009/431/EC granting a derogation under that directive, in England. The regulations: provide for the designation of land as nitrate vulnerable zones; impose annual limits on the quantity of nitrogen from organic manure that may be applied or spread in a holding in a nitrate vulnerable zone; establish requirements relating to the amount of nitrogen to be spread on a crop, and requires an occupier to plan in advance how much nitrogen fertiliser will be spread; require an occupier to provide a risk map of the holding; impose conditions on the spreading of nitrogen fertiliser; establish closed periods during which the spreading of nitrogen fertiliser is prohibited; and, makes provision for requirements for storage of nitrogen fertiliser and the keeping of records.	The DP should have regard to the requirements of the regulations. The DP and the SEA should consider potential effects of DP plan measures on Nitrate Vulnerable Zones (NVZs).
HM Government (2015) Ozone-Depleting Substances Regulations 2015	
The 2015 ODS Regulations implementation of EU Ozone Depleting Substances Regulations (1005/2009). The principal objective is to phase out and control remaining uses of ozone depleting substances (ODS). ODSs	The DP should have regard to the requirements of the regulations.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
commonly include chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and halons, which were typically used as refrigerants, air-conditioning systems, and fire-fighting equipment. The Regulations place controls and phase-out dates on the Manufacture and supply of ODSs. The Regulations also require ODSs to be removed from refrigeration equipment before such appliances are scrapped. The Regulations specify minimum qualifications for those working on the recovery, recycling, reclamation or destruction of ODS.	The SEA assessment framework should include emissions to air.
HM Government (2016) Environmental Permitting (England and Wales) Regulations 2016 (as amended 2018)	
Provides a system for environmental permits and exemptions for industrial activities, mobile plant, waste operations, mining waste operations, water discharge activities, groundwater activities and radioactive substances activities. It also sets out the powers, functions and duties of the regulators.	The DP should accord with these Regulations.
HM Government (2017) Conservation of Habitats and Species Regulations 2017	
These regulations consolidate all the various amendments made to the Conservation (Natural Habitats) Regulations 1994 in England and Wales. The regulations provide for the designation and protection of 'European sites', the protection of 'European species', and the adaptation of planning and other controls for the protection of European Sites. They are the principal means by which the Habitats Directive is transposed in England and Wales as such its main objective is to promote the maintenance of biodiversity.	The DP must fully comply with the Regulations. The impacts of the DP options on biodiversity and protected species and sites must be considered as part of the SEA.
HM Government (2017, updated 2019) UK Clean Growth Strategy: Leading the way to a low carbon future	
This document affirms the UK's need to pursue de-carbonisation and provides information on how the UK is performing against its targets to become carbon neutral. The document highlights that continued emission reduction needs to continue in the fields of: Power Sector; Buildings; Industry; Natural Resources; Transport; and, Devolved Administrations.	The SEA should have an objective/guide questions relating to sustainable development that references the need to reduce carbon emissions across all sectors.
HM Government (2018) The Water Supply (Water Quality) Regulations 2018	
These regulations address the quality of water supplied by water undertakers, who supply areas mainly or wholly in England. The new Regulations implement Directive 98/83/EC on the quality of water intended for human consumption.	The DP should consider the Regulations. The SEA should take into account potential effects of the measures on drinking water quality

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Under these Regulations, water undertakers are required to identify the areas that are to be water supply zones on an annual basis. A water supply zone cannot exceed 100,000 in terms of population before the beginning of each year of the supply. The standards of wholesomeness are set out, in respect of water for human consumption, be that through drinking, washing, food preparation or cooking and food production. In order to qualify as wholesome, the water cannot contain any: micro-organism, other than those listed in the full text of Schedule 1 to the Regulations, or parasite; or substances, other than those listed in the full text of Schedule 1 to the Regulations.	
HM Government (2019) the Invasive Alien species (Enforcement and Permitting) Order 2019	
This Order allows for the enforcement of the EU Invasive Alien Species Regulation 1143/2014 on the prevention and management of invasive alien plant and animal species in England and Wales, including the relevant licenses, permits and rules for keeping invasive alien species.	The SEA should seek to address any potential issues or effects on existing measures to address invasive alien species.
HM Government (2020) The Agriculture Act 2020	
The Bill provides the legislative framework for replacement agricultural support schemes to replace the European schemes after UK's exit from the EU and the EU's Common Agricultural Policy (CAP). The Bill provides powers to implement new approaches to farm payments and land management. In England, farmers will be paid to produce 'public goods' such as environmental or animal welfare improvements. The Bill also includes wider measures, including on improving fairness in the agricultural supply chain and on the operation of agricultural markets.	The DP should consider the implications of the act.
HM Government (2020) Energy White Paper: Powering our Net Zero Future	
The White Paper follows on from the Prime Minister's Ten Point Plan and the National Infrastructure Strategy. The Energy White Paper provides further clarity on the Prime Minister's measures and puts in place a strategy for the wider energy system that: • Transforms energy, building a cleaner, greener future for the country, its people and the planet • Supports a green recovery, growing the economy, supporting green jobs across the country in new green industries and leveraging new green export opportunities • Creates a fair deal for consumers, protecting the fuel poor, providing opportunities to save money on bills, providing warmer, more comfortable homes and balancing investment against bill impacts	The DP should consider if it can support the delivery of the aims of the white paper. The SEA should include objectives and guide questions relating to energy use and carbon emissions.
HM Government (2021) The Environment Act 2021	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
The Act seeks to set legislation to improve air and water quality, tackle waste, increase recycling, halt the decline of species, and improve the natural environment. Amongst its provisions, The Act places a duty enshrined in law to ensure water companies secure a progressive reduction in the adverse impacts of discharges from storm overflows. New duties will also require the government to publish a plan to reduce sewage discharges from storm overflows by September 2022 and report to Parliament on the progress towards implementing the plan. The Environment Act also includes a legally binding target on species abundance for 2030, to help reverse declines of species like the hedgehog, red squirrel and water vole.	The DP should seek to protect and enhance the natural environment, taking into consideration the principals and guidance set out through the Environment Bill.
HM Government (2022) UK Climate Change Risk Assessment 2022	
This report outlines the UK government and devolved administrations' position on the key climate change risks and opportunities that the UK faces today. As required by the Climate Change Act 2008, the UK government has undertaken the third five-year assessment of the risks of climate change on the UK. This is based on the Independent Assessment of UK Climate Risk, the statutory advice provided by the Climate Change Committee (CCC), commissioned by the UK government and devolved administrations. The risk assessment considers sixty-one UK-wide climate risks and opportunities cutting across multiple sectors of the economy and prioritises eight risk areas for action in the next two years.	The DP and the SEA should take into consideration the climate risks identified by the assessment.
HM Treasury (2015) Fixing the Foundations: creating a more prosperous nation.	
This document sets out a 15-point plan that the government will put into action to boost the UK's productivity growth, centred around two key pillars: encouraging long-term investment, and promoting a dynamic economy. It sets out the government's long-term strategy for tackling the issues that matter most for productivity growth.	The DP should have regard to the points included in the plan
JNCC (2024) UK Biodiversity Framework 2024	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
The UK Biodiversity Framework (UKBF) has been developed in response to the Kunming-Montreal Global Biodiversity Framework (GBF), agreed at the Fifteen Conference of the Parties (COP15) of the Convention on Biological Diversity (CBD) in December 2022. The UK Biodiversity Framework has been produced through the Four Countries' Biodiversity Group (4CBG), which is the lead governance body for the UKBF, and which includes representatives from DAERA, Defra, Scottish Government, and Welsh Government, with JNCC providing an independent secretariat role. Through the UKBF, the four countries will agree on activities where joint action between them four countries is required to implement the GBF.	The DP should support the protection and enhancement of biodiversity. The SEA assessment should include criteria relating to the protection of species and habitats.
National Infrastructure Commission (2018) Preparing for a Drier Future, England's Water Infrastructure Needs	
This paper sets out a range of measures that the NIC believe government, water companies and the regulator should take to increase investment in supply infrastructure and encourage more efficient use of water, with the aim to halve leakage by 2050, extend metering and develop plans for a national water network.	The DP should take these measures into account where possible and aim to improve water efficiency.
HM Government (2006) Natural Environment and Rural Communities Act, 2006	
This Act makes provision about bodies concerned with the natural environment and rural communities in connection with wildlife, sites of special scientific interest, National Parks and the Broads. The Natural Environment and Rural Communities Act has a general purpose to ensure the natural environment is conserved, enhanced and managed for the benefit of present and future generations, thereby contributing to sustainable development. Section 40 places a duty to conserve biodiversity on public authorities which may include enhancing, restoring or protecting a population or habitat. This duty extends to the list of species and habitats published in Section 41 of the Act and also applies to Local Wildlife Sites.	The SEA should seek to maintain or enhance the quality of habitats and biodiversity. The impacts of the DP on any designated features, as highlighted in the Natural Environment and Rural Communities Act, should be addressed.
HM Government (1975) Salmon and Freshwater Fisheries Act, 1975	
The Act lays down the present basic legal framework within which salmon and freshwater fisheries in England are regulated. Proposals have been made to extend the legislation to apply to more fish species e.g. coarse fish, eel and lamprey species. These proposals are currently under review. The Act covers legislation on fishing methods and related offences, obstructions to fish passage, salmon and freshwater fisheries administration and law enforcement. Proposed extensions to the legislation (under review) include the provision of fish passes and screening of water abstraction and discharge points for coarse fish, eel and lamprey species.	The Act Provides statutory requirements for maintaining fish passage. The SEA will cover fish passage as an element of at least one sustainability objective. The SEA should seek to address any potential issues or effects on existing measures to address fish passage.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
HM Government (2015) The Environmental Damage (Prevention and Remediation) (England) Regulations 2015	
These regulations amend the 2009 regulations and provide additional protection to habitats and species identified on Annexes 1 and 2 of the EC Habitats Directive (92/43/EEC), SSSIs and, in some cases, classified waterbodies from environmental damage where an operator has intended to cause damage or been negligent to the potential for damage. Applies to the most serious categories of environmental damage, including: • Contamination of land that results in a significant risk of adverse effects on human health • Adverse effects on surface water or groundwater consistent with a deterioration in the water's status • Adverse effects on the integrity of a Site of Special Scientific Interest (SSSI) or on the conservation status of species and habitats protected by EU legislation outside SSSIs.	The SEA should seek to ensure that the guidance provided by the regulations is considered when assessing the DP.
HM Government (2009) The Eel (England and Wales) Regulations 2009	
Implement European Council Regulations 1100/2007 establishing measures for the recovery of the stock of European eel. The Regulations will help implement delivery Eel Management Plans. They address eel records and re-stocking, close season and reduction of fishing effort, passage of eels and entrainment. The key objective is to ensure that at least 40% of the potential production of silver eels returns to the sea to spawn. This will be achieved by reducing exploitation of all life-stages of the eel and restoration of their habitats.	The SEA should seek to maintain or enhance the quality of habitats and biodiversity, and take regard of protected species identified. This should include migratory fish species and their migratory passage.
Natural England (2016) Conservation 21: Natural England's conservation strategy for the 21st century	
Conservation 21 sets out how Natural England will work to protect England's nature and landscapes for people to enjoy and for the services they provide, in support of Defra's ambitions for the environment.	The DP should take into account the contents of this strategy.
HM Government (2003) The Water Act 2003	
The Water Act 2003 is in three Parts, relating to water resources, regulation of the water industry and other provisions. The four broad aims of the Act are: • The sustainable use of water resources • Strengthening the voice of consumers • A measured increase in competition • The promotion of water conservation.	The implementation of the DP may have an effect through its role in maintaining supplies of water. The SEA should seek to promote sustainable use of water resources.
HM Government (2017) The Water Environment (Water Framework Directive) (England and Wales) Regulations	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
The Water Framework Directive (WFD) established a legal framework for managing the water environment across Europe. The requirements of this are set out in domestic law under these regulations. The overall aims are the sustainable use of water, preventing deterioration of water body status and the protection and improvement of inland surface waters, groundwater and transitional and coastal waters. River Basin Management Plans set out how these requirements will be delivered.	The SEA should seek to promote the protection and enhancement of all water resources. The SEA should seek to maintain, protect and improve water quality across the region and ensure efficient use of resources.
Natural England (2011) *UK Geodiversity Action Plan*	
The UKGAP sets out of framework for geodiversity action across the UK. It provides a shared context and direction for the protection and enhancement of geodiversity through a common aim, themes, objectives and targets which link national, regional and local activities. The UKGAP consists of six broad themes: 1. Furthering our understanding of geodiversity 2. Influencing planning policy, legislation and development design 3. Gathering and maintaining information on our geodiversity 4. Conserving and managing our geodiversity 5. Inspiring people to value and care for our geodiversity 6. Sustaining resources for our geodiversity	The DP should have regard to the aims and objectives of the UKGAP. The SEA framework should consider effects of options on geodiversity and outline enhancement and mitigation opportunities where these are identified.
Natural England (2015) Conservation objectives for land-based protected sites in England: how to use the site advice	
Designated sites, like Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), have conservation objectives to guide their management and protect their qualifying features. These objectives specify the targets for species and/or habitat types within the site, aiming to maintain or restore their favourable conservation status at national and biogeographical levels. These objectives aim to: Conserve and restore the sites including preventing deterioration of habitats and species from human activity or natural changes. Prevent disturbance by focussing on minimising impacts on qualifying features and ensuring the site continues to support the biodiversity it's designated to protect. Meet specific targets tailored to the unique characteristics of each site, ensuring they contribute to the broader conservation goals for the relevant species and habitats.	The SEA assessment should include criteria relating to the protection of designated sites.
Natural England (2025) Natural England's Strategy: Recovering Nature for Growth, Health and Security	
Natural England's 2025 strategy sets out how the organisation will shift from simply protecting nature to delivering systemic, large-scale recovery, recognising nature as essential national infrastructure for economic growth, public health, and national security.	The DP should have regard to the objectives set out in the Strategy.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
The strategy is built around four core strategic outcomes, each supported by evidence and case studies: 1. Recovering nature 2. Building better places 3. Improving health and wellbeing 4. Delivering security through nature	The SEA should assess how the proposed options may affect nature, as well as how they may influence the relationship between nature, health and wellbeing.
National Assembly for Wales (2015) *Well-being and Future Generations (Wales) Act 2015*	
This makes provision for sustainable development and a well-being duty on public bodies.	Well-being objectives need to be taken into account in the SEA.
Natural Resources Wales (2024) Water company drought plan – technical guidance	
Water companies in England and Wales are required to prepare and maintain drought plans under the Water Industry Act 1991, as amended by the Water Act 2003. A drought plan sets out how water companies will supply water to their customers during periods of low rainfall when water supply becomes depleted, whilst minimising any negative impacts of their actions during a drought. It should set out the short-term operational steps they will take before, during and after a drought. The technical guideline for water companies wholly or mainly in Wales (produced by NRW) to follow when preparing their drought plans.	UU may include options in Wales in their DP therefore must take account of the NRW guideline.
Ofwat (2016) Water 2020	
This document sets out Ofwat's decisions on the design of its water and wastewater services regulatory framework in England and Wales. The approach aims to deliver the following benefits: • Greater customer engagement and understanding • A sustainable investment model and a fair balance of risk and reward • Choice where possible, and ensuring markets are effective for customers • A focus on the long-term, targeted and risk-based • Support for sustainable improvements in the environment.	The DP should take account of the regulatory framework. The SEA assessment should include criteria relating to the provision of water to customers and environmental protection.
Ofwat (2017) Resilience in the Round	
The report identifies that the water sector has historically invested in options which enhance capacity, especially operational capacity and that whilst additional capacity has an important role in delivering resilience against some threats, companies should start looking at a wider set of factors in order to deliver "smarter" options for the future, including:	The DP should consider the content of the report.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
• Addressing multiple threats through a single intervention. For example, enhancing network connectivity to reduce the number of customers reliant on a single source of supply. This type of approach can provide water supply resilience to multiple threats such as outages, drought and contamination. • Recognising that any intervention will have its own embedded vulnerabilities to future threats. Understanding the vulnerabilities of option types will be critical to planning respective roles in delivering the planned level of resilience. For example, water transfers between areas of surplus and deficit can be a good option but might be vulnerable to wider scale drought impacts and/or contamination.	
UKCIP (2018) UK Climate Projections UKCP18	
The UKCP18 Projections provide a basis for studies of impacts and vulnerability and decisions on adaptation to climate change in the UK over the 21st century. Projections are given of changes to climate, and of changes in the marine and coastal environment; recent trends in observed climate are also discussed. The methodology gives a measure of the uncertainty in the range of possible outcomes; a major advance beyond previous national scenarios. The Projections will allow planners and decision-makers to make adaptations to climate change. In order to do so they need as much good information as possible on how climate change will evolve. They are one part of a UK government programme of work to put in place a new statutory framework on, and provide practical support for, adaptation.	The DP does take account of UKCP09 projections as its formulation through the DP process which takes account of climate change in its supply and demand projections. The SEA should also use UKCP09 projections in the broader assessment of climate change effects and any potential cumulative effects. For example, the ecological requirements of aquatic habitats that may be affected by the DP will also be influenced by climate change.
UKTAG: Phase 3 Review of Environmental Standards	
UKTAG prepares technical guidance designed to facilitate consistent implementation of the WFD in the UK. This report identifies standards for certain chemicals known as specific pollutants, developments in assessments of risk to groundwater, non-native species, standards for flows in rivers, standards for levels in lakes, standards for acidity in rivers and standards in intermittent discharges.	The SEA should seek to ensure that the guidance provided by the plan are considered when assessing the DP, especially with respect to objectives relating to ecology, water quality and water quantity. The SEA should also ensure the guidance in the plan is used in relation to other related regulations for example the Habitats Directive. The guidance could contribute to the formulation of any criteria for assessing significance of effects.
Waterwise (2022) Water Efficiency Strategy for the UK	
The document sets out a strategy for achieving the vision of a water efficient UK. It suggests policy, regulatory and practical actions that can help in the process of achieving water efficiency.	The DP should take into account their possible impacts on water efficiency and aim to improve water efficiency. The SEA objectives should reflect the need improve water efficiency
Water UK (2022) Water 2050 – A White Paper	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Water UK has developed this White Paper on behalf of 16 water companies that operate in England. This White Paper describes: • Future challenges, opportunities and gaps and the priority areas for change • Our Vision for 2050 • Why and what we need to change: Delivering more environmental impact more efficiently • Why and what we need to change: Protecting long-term customer interests through the right investments at the right time • How we will make the change happen	The DP should have regard to the water White Paper.
Welsh Government (2021) Climate Change (Wales) Regulations 2021	
This is the second set of climate change regulations made under Part 2 of the Environment (Wales) Act 2016. The 2021 Regulations form part of the wider statutory framework for the reduction of emissions in Wales, set out in Part 2 of the Act. These regulations represent Wales's commitment to tackling climate change through a structured, long-term approach to emissions reduction, aligning with broader UK and global climate objectives.	The DP should align with the long-term goals and objectives set out the regulations.
Welsh Government (2022) Net Zero Wales	
This emissions reduction plan sets the foundations for the journey to make Wales net zero and greener, stronger and fairer by 2050. The areas where there is intent for action include: Commitment to Net Zero or Action on Climate Emergency Understanding and Reducing Carbon Footprint Education, Engagement & Capacity Building Energy & Reducing Energy Demand Homes and Housing Circular Economy Waste Enriching our Natural Resources	The DP should seek to contribute to the reduction of the total amount of carbon produced as much as feasible and help towards attainment of net zero greenhouse gas emissions by 2050. The SEA should have an objective pertaining to sustainable development that emphasises the need to minimise greenhouse gas emissions.
Welsh Government (2022) Sustainable Farming Scheme	
This is a key part of the Welsh Government's vision for transforming agriculture in the country. It is designed to reward farmers for adopting environmentally sustainable practices that deliver a range of public goods, such as enhancing biodiversity, improving water and soil quality, and mitigating climate change. The scheme is	The DP and SEA should seek to ensure the sustainable management of agricultural soils Wales.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
closely linked to the Agriculture (Wales) Act 2023 and is fundamental to achieving the goals of Sustainable Land Management (SLM)	
Welsh Government (2012) Energy Wales: A Low Carbon Transition	
Energy Wales sets out what the Welsh Government intend to do to achieve a low carbon economy whilst delivering economic benefits and jobs, ensure real community benefits and manage the interface with the natural environment.	The DP should seek to incorporate low carbon energy and energy efficiency. The SEA should include a guide question relating to climate change.
Welsh Government (2018) Valued and Resilient: The Welsh Government's Priorities for Areas of Outstanding Natural Beauty and National Parks	
This statement provides the goals for National landscapes in Wales. These goals include: Valued places Resilient environments Resilient communities Resilient ways of working	The DP should maintain or enhance the national landscapes in Wales. The SEA framework should seek to ensure that the national landscapes are not adversely impacted by the implementation of the DP.
Welsh Government (2023) Agriculture (Wales) Act 2023	
This Act establishes a framework for agricultural policy in Wales. The overarching aim of the Act is to support sustainable farming practices, environmental protection, and rural community development in Wales.	The DP and SEA should seek to support the sustainable management of agricultural soils in Wales.
Welsh Government (2015) Water Strategy for Wales	
This Strategy is set within the context of our long-term policy direction to improve our natural resource management and covers a broad range of matters relating to the management of our water systems, including all inland waters, estuaries and coastal waters. Six key themes were identified for the strategy; 1. Water for nature, people and business 2. Improving the way we plan and manage our water services 3. Delivering excellent services to customers 4. Protecting and improving drinking water quality 5. 21st century sewerage and drainage systems 6. Supporting delivery	The DP should have regard to the key themes of the Water Strategy for Wales. The SEA should include an objective relating to water resources.
Welsh Government (2017) Technical Advice Note 24 the Historic Environment	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
This technical advice note sets out guidance on how to consider the historic environment in development plans and planning decisions. It includes guidance on the following: • world heritage sites • scheduled monuments • archaeological remains • listed buildings • conservation areas • historic parks and gardens • historic landscapes • historic assets of special local interest	The DP and SEA should consider the impact of any proposed developments on the historic environment of Wales.
Welsh Government (2023) Public Health Wales Climate Change in Wales: Health Impact Assessment	
The strategic and comprehensive assessment of the possible effects of climate change on population health in Wales is presented in this report. It encourages the implementation of programmes and policies that can safeguard and advance everyone's health and well-being in Wales, as well as in the demographic segments and geographic regions most vulnerable to adverse effects.	The SEA should have objectives/guide questions relating to climate change and the well-being of the population's health.
Welsh Government (2022) Soil Management	
This guidance sets out Wales's vision for the sustainable use and management of agricultural soils for future generations.	The DP and SEA should seek to ensure the sustainable management of agricultural soils Wales.
Welsh Government (2024) Sustainable Farming Scheme	
The Welsh Government's new Sustainable Farming Scheme (SFS), set to launch in 2026, aims to support farmers in adopting sustainable practices that address climate change and biodiversity loss. The scheme encourages voluntary participation and focuses on actions such as improving livestock health, enhancing soil management, and maintaining habitats.	The DP and SEA should consider the impact of any proposed developments on the soil and habitats.
Welsh Government (2020) Ecosystem Resilience in a Nutshell 1: What is ecosystem resilience?	
This document emphasizes the importance of maintaining and enhancing biodiversity as a fundamental component of ecosystem resilience. The DECCA framework, comprising Diversity, Extent, Condition, Connectivity, and other Aspects, highlights biodiversity as a key attribute contributing to an ecosystem's ability to resist, recover from, or adapt to disturbances. The principles outlined support actions that enhance	The SEA should have objectives/guide questions relating to ecosystem resilience.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
biodiversity and ecosystem resilience. This approach aligns with broader environmental goals of ensuring that development and land management practices result in a net positive impact on biodiversity	
Welsh Government (2015) Well-being of Future Generations (Wales) Act 2015 and National indicators and national milestones for Wales	
The Act includes 7 goals that all public bodies should work towards: • A prosperous Wales • A resilient Wales • A healthier Wales • A more equal Wales • A Wales of cohesive communities • A Wales of vibrant culture and thriving Welsh Language • A globally responsible Wales The Act establishes a statutory Future Generations Commissioner for Wales, whose role is to act as a guardian for the interests of future generations in Wales, and to support the public bodies listed in the Act to work towards achieving the well-being goals. The Act also establishes Public Services Boards (PSBs) for each local authority area in Wales. Each PSB must improve the economic, social, environmental and cultural well-being of its area by working to achieve the well-being goals. The National indicators and national milestones for Wales guidance sets out 50 national indicators and 17 milestones to be achieved in Wales by 2050/	The Drought Plan should consider how it can contribute to the seven well-being goals set out in the Act and should take into consideration the national indicators and milestones to achieve these goals. The SEA Framework should reflect the seven well-being goals.
Welsh Government (2017) Natural Resources Policy	
The Natural Resources Policy (NRP) is the second statuary product of the Environment 9Wales) Act. The NRP focuses on the sustainable management of Wales natural resources, to maximise their contribution to achieving goals set out in the Well-being of Future Generations Act. The three National Priorities included in the policy are: 1. Delivering nature-based solutions 2. Increasing renewable energy and resource efficiency 3. Taking a place-based approach.	The DP should take into account the National Priorities in the NRP. The SEA should include assessment criteria relating to protection and enhancement of the environment, ecology, soils, flooding and climate change.
Welsh Government (2018) Priorities for the Historic Environment of Wales	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
This document outlines Welsh Government's plans to protect our unique historic sites, in partnership with others, and to encourage more people to visit them.	The DP and SEA should consider the impact of any proposed developments on the historic environment of Wales.
Welsh Government (2021) Planning Policy Wales (Edition 12)	
Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. PPW, the TANs, MTANs and policy clarification letters comprise national planning policy. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation and resultant duties such as the Socio-economic Duty.	Measures recommended in the DP will need to conform to LDPs. The SEA objectives should reflect the Welsh Government's commitments to sustainable development.
Welsh Government (2020) State of Natural Resources Report (SoNaRR) for Wales 2020	
This report sets out the state of Wales's natural resources. It assesses the extent to which natural resources in Wales are being sustainably managed, and recommends a proactive approach to building resilience, whilst also linking to the well-being of the people of Wales. The report identifies risks, threats and opportunities for integrates solutions that provide multiple benefits, including; social, economic, environmental and cultural.	The DP should take into account opportunities to address the risks and threats identified in the report. The SEA should have regard to risks, threats and opportunities identified in the report.
Welsh Government (2020) Historic Environment and Climate Change in Wales	
Some of Wales's most iconic historic sites and landscapes are threatened by warmer temperatures, rising sea levels, changing rainfall patterns and more frequent extreme weather events. The plan highlights the need for collaboration and action across all sectors that will improve understanding; build adaptive capacity and increase the resilience of the historic environment – so that it can be enjoyed by future generations.	The DP and SEA should consider the impact of any proposed developments on climate change and the historic environment of Wales.
Welsh Government (2020) Future Wales: The National Plan 2040	
The National Development Framework (NDF) will help deliver sustainable places across Wales by 2040 and will replace the spatial plan. The NDF will cover big issues important to Wales's prosperity and well-being, such as the economy, housing, transport, energy and the environment. Outcomes of the NDF include a Wales where people live… • And work in connected, inclusive and healthy places • And work in towns and cities which are a focus and springboard for sustainable growth • In places that sustainable manage their natural resources and reduce pollution • In places with biodiverse, resilient and connected ecosystems	The DP should have regard to the intended outcomes of the NDF. The SEA should take into account the outcomes of the NDF.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
• In places which are decarbonised. A working draft was published in September 2020 and covers a 20-year period up to 2040.	
Welsh Government (2021) National Strategy for Flood and Coastal Erosion Risk Management in Wales	
This strategy sets out how the Welsh Government intend to manage risks from flooding and coastal erosion across Wales. It sets objectives and measures for all partners to work towards.	The DP should contribute to the reduction in flood risk and coastal erosion where possible. The SEA should include an objective/guide question relating to flooding.
Welsh Government (2021) Planning Policy Wales (Edition 11)	
Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. PPW, the TANs, MTANs and policy clarification letters comprise national planning policy. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Wellbeing of Future Generations (Wales) Act 2015 and other key legislation and resultant duties such as the Socio-economic Duty.	Measures recommended in the DP will need to conform to LDPs and the policies of the PPW. The SEA objectives should reflect the Welsh Government's commitments to sustainable development.
Regional	
Canal & River Trust (2015) *North West Waterway Fisheries & Angling Action Plan*	
The action plan sets out several issues of importance to the local angling communities across the North West. Addressing these issues aims to improve the angling experience, fish stocks and the water environment. The actions are grouped under 10 themes, which include: • Develop & improve access to the fishery. • Fish passage and migration. • Predation & non-native species • Fisheries and water quality and quantity.	The DP should seek to avoid harm to fisheries. The SEA assessment framework should include the protection or enhancement of factors affecting fisheries.
Environment Agency (undated), Managing Drought in the North West	
The document sets out the measures that the North West Region drought team will take to plan for and manage droughts.	The supply of water resources in the region may be affected by future drought; therefore this plan is linked closely with the DP.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
The drought plan's main aims are to: • Give a structured and flexible framework to deal with droughts of different type (for example, groundwater or surface-water) and severity; and • Set out a system of monitoring and reporting to identify and track the onset and progress of drought.	The SEA should seek to address the causes of drought and include objectives which seek to address the causes of drought, and where possible ensure that the symptoms of droughts are minimised.
Environment Agency (2025) North West Drought Plan	
This plan is designed to be used as a reference manual for EA staff involved in the operational response to a dry weather event or drought. This document details how Cumbria and Lancashire (CLA) and Greater Manchester Merseyside and Cheshire (GMMC) areas will jointly plan for and manage drought in the North West Area. Both areas are largely served by UU but other water companies also supply small areas of the NW. This plan sets out: • North West characteristics and drought vulnerabilities • Monitoring, indicators and triggers – summary of the monitoring the EA undertake in the North West and the indicators and triggers the EA use to determine when to move between drought stages • Actions the EA will take at each drought stage • Communication and engagement – how the EA will communicate during a drought	The supply of water resources in the region may be affected by future drought; therefore this plan is linked closely with the DP. The SEA should seek to address the causes of drought and include objectives which seek to address the causes of drought, and where possible ensure that the symptoms of droughts are minimised.
Historic England (2023) Heritage at Risk 2023 Registers: North West and Midlands	
Historic England's Heritage at Risk registers aim to reduce the risk to heritage assets. In order to achieve this aim, HE is working to: • Better understand the nature and extent of risk • Encourage others to save and re-use heritage at risk • Build the capacity of the sector to deliver solutions for heritage at risk • Provide advice and grants to help remove heritage from the register	It is unlikely the DP will have an effect on the Heritage at Risk Register.
Natural Resources Wales, Drought Plan	
Natural Resources Wales produces a drought plan which describes the indicators currently used to classify the different stages of drought.	The supply of water resources in the region may be affected by future drought; therefore this plan is linked closely with the DP.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
	The SEA should seek to address the causes of drought and include objectives which seek to address the causes of drought, and where possible ensure that the symptoms of droughts are minimised.
Transport for the North (2019) Strategic Transport Plan	
The Strategic Transport Plan outlines the need for investment in transport across the North and identifies the priority areas for improved connectivity and outlines Transport for the North's vision for the future. The objectives of the Strategic Transport Plan are: Transforming economic performance Increasing efficiency, reliability, integration, and resilience in the transport system Improving inclusivity, health, and access to opportunities for all Promoting and enhancing the built, historic, and natural environment	The DP should seek to contribute to the objectives of the plan, where possible and appropriate to do so. The SEA should consider the potential effects of the DP on transport and infrastructure.
UU (2023) Business Plan 2025-2030	
The business plan sets various pledges from UU for the period 2025-2030. The commitments and targets relate to; provision of water, disposal of wastewater, value for money, customer service and environmental protection.	The DP should seek to support the delivery of the Business Plan. The objectives and guide questions that comprise the SEA Framework should, where appropriate, reflect the priorities set out in this Business Plan.
UU (2024) Area of representation: New WINEP	
UU August 2024 update on the Water Industry National Environment Programme (WINEP) highlights new environmental obligations that add £279 million to their AMP8 investment plans. Key changes include accelerated improvements at Windermere and a doubling of required storm overflow investigations. The company urges Ofwat to account for these evolving requirements in its final decisions to support timely environmental progress.	The DP will take into account the objectives of the programme into account.
UU Ltd (2024), *Final Water Resources Management Plan 2024*	
See WRMP.	The DP will take into account the objectives of UU's WRMP.
Water Company (various) Drought Plans adjacent to supply area	
This looks at the management of water resources to maintain service to customers during drought in the surrounding areas. The plans considered include; • Hafren Dyfrdwy Drought Plan 2020-2025	Assessment of the potential for cumulative impacts of supply side and drought permit/order options with drought options listed in neighbouring water companies' drought plans has been undertaken.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
• Dŵr Cymru Welsh Water Final Drought Plan 2020 • Severn Trent Drought Plan 2022-2027 • Yorkshire Water Drought Plan 2022 • Northumbrian Water Drought Plan 2022	The assessments should be reviewed at the time of drought option implementation to ensure that no changes to the neighbouring water company drought option have been made in the intervening period, and that the assessment, therefore, remains valid.
Water Resources Management Plans from adjacent water companies	
These set out the plans to manage water resources by companies in adjacent areas, including: • Hafren Dyfrdwy Draft Water Resources Management Plan 2024 • Dŵr Cymru Welsh Water Revised Draft Water Resources Management Plan 2024 • Severn Trent Revised Draft Water Resources Management Plan 2024 • Yorkshire Water Revised Draft Water Resources Management Plan 2024 • Northumbrian Water Draft Water Resources Management Plan 2024	The DP should not conflict with the other water company operations especially drought options that may be operated simultaneously.
Water Company (various) Drainage and Wastewater management plans	
UU Drainage and Wastewater Management Plan 2023 Hafren Dyfrdwy Draft Drainage and Wastewater Management Plan 2023 Dŵr Cymru Welsh Drainage and Wastewater Management Plan 2023 Severn Trent Drainage and Wastewater Management Plan 2023 Yorkshire Water Drainage and Wastewater Management Plan 2023 Northumbrian Water Drainage and Wastewater Management Plan 2023	The DP should not conflict with the other water company drainage and wastewater operations especially drought options that may be operated simultaneously.
Water Resources West (2025) Final Regional Plan	
This plan presents an updated assessment of the region's water needs, reflecting growth, climate change, and environmental objectives. It outlines proposed solutions to meet these needs, including water transfer schemes designed to supply water from the North West to the South East of England.	The Drought Plan should align with this plan, particularly in areas where the two are interdependent and influence one another during drought conditions.
Water Resources West (2023) Draft Regional Plan - Statement of Response	
The Water Resources West (WRW) Statement of Response, published in July 2023, addresses feedback from the consultation on its draft regional water resources plan covering 2025 to 2085. Key feedback areas included the need for accelerated environmental improvements and demand reduction strategies. The revised plan will reflect a collaborative approach, incorporating insights from various stakeholders to better align with regional and national water resource objectives.	The Drought Plan should align with updates made to the 2022 Draft Regional Plan.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Sub-regional	
National Landscapes (formerly known as AONBs) (various) *AONB Management Plans*	
The following National Landscapes (formerly AONBs) are present in the UU area: Arnside and Silverdale; Forest of Bowland; North Pennines and the Solway Coast. The management plans for National Landscapes contain actions to ensure the protection and enhancement of the landscape.	The SEA should consider the effects of options on landscapes, including designated landscapes.
Cheshire and Warrington Combined Authority Shadow Board (2025) Sustainable and Inclusive Economic Strategy 2025–2045. Cheshire and Warrington LEP.	
The Sustainable and Inclusive Economic Strategy (SIES) sets out Cheshire and Warrington's long-term vision to become the healthiest, most sustainable, inclusive, and fastest-growing economy in the UK by 2045. It provides a regional blueprint for clean growth, nature recovery, improved health outcomes, and economic transformation.	The implementation of the DP and the future availability of water resources may have an effect upon community cohesion, wellbeing and continued prosperity within a sustainable environment. The SEA should seek to maintain and improve welfare and community infrastructure and maximise positive social impacts.
Cumbria Tourism (2024) A Destination Management Plan (DMP) for Cumbria	
A strategic approach to destination management brings benefits for all and Cumbria Tourism has been working with a range of public and private sector organisations to help shape a five-year Destination Management Plan (DMP) for the county. The DMP includes a range of collective objectives and priorities – alongside a comprehensive action plan – to manage Cumbria's visitor economy and support the county's future growth as a great place to live, work, visit and study. The key objectives of Cumbria's DMP are to: • Drive economic growth: Increasing the value and productivity of our visitor economy. • Responsible and Sustainable: Supporting tourism that benefits our environment and vibrant communities. • Inclusive and Accessible: Ensuring everyone can enjoy our destination. • Resourced to deliver: Ensuring Cumbria has the infrastructure and support to deliver.	Implementation of the DP may have effects on tourism and recreation and therefore should have regard to the DP. The SEA framework should include the potential for effects on tourism and recreation.
Defra (2010), *Eel Management Plans for the United Kingdom*: Dee River Basin District; Eel Management Plans for the United Kingdom: Northwest River Basin District	
These plans aim to achieve an escapement of silver eel to the spawning population that equals or exceeds a target set at 40 per cent of the potential biomass that would be produced under conditions with no anthropogenic disturbance due to fishing, water quality or barriers to migration. The aim of each Eel Management Plan is to describe the nature of the eel population and fishery in the RBD, to assess whether the stock is meeting its 40 per cent escapement target, and to present management actions that will ensure the long-term viability of the eel population.	The SEA should consider the potential impacts of the DP on eel populations and escapement targets.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Environment Agency (2022) River Basin Management Plans: updated 2022	
River Basin Management Plans (RBMPs) set out how the water environment will be managed and provides a framework for more detailed decisions to be made. RBMPs set out a more integrated approach to river basin management based on the following principles: Integrate and streamline plans and processes; Set out a clear, transparent and accessible process of analysis and decision-making; Focus at the river basin district level; Work in partnership with other regulators; Encourage active involvement of a broad cross-section of stakeholders; Make use of the alternative objectives to deliver sustainable development; Use Better Regulation principles and consider the cost effectiveness of the full range of possible measures; Seek to be even handed across different sectors of society and sectors of industry; Seek to be even handed and transparent in the management of uncertainty; Develop methodologies and refine analyses as more information becomes available. RBMPs relevant to the UU area are the North West, Solway Tweed and Dee.	The DP should reflect the broad targets set out in the RBMPs. The SEA objectives should reflect the need to manage water resources on a catchment basis in a sustainable manner to help improve the quality of water resources.
Environment Agency (various) ALS (Catchment Abstraction Management Strategies (CAMS) process)	
This Licensing Strategies set out how the EA will manage the water resources of a catchment and contribute to implementing the WFD. It provides information about where water is available for further abstraction and an indication of how reliable a new abstraction licence may be. Strategies within the UU area include: • Derwent and West Cumbria • Eden and Esk • South Cumbria • Lune and Wyre • Ribble, Douglas and Crossens • Lower Mersey and Alt • Northern Manchester • Upper Mersey • Weaver and Dane • Dee	The DP should consider the ALS/CAMS process. The SEA framework should include objectives relating to sustainable water use.
Greater Manchester Combined Authority (2025) Together we are Greater Manchester: *Greater Manchester Strategy 2025-2035*	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
To create a thriving city region where everyone can live a good life, the Strategy will focus on: • Healthy homes for all • Safe and strong communities • A transport system for a global city region • A clear line of sight to highquality jobs • Everyday support in every neighbourhood • A great place to do business • Digitally connected places and people	There could be some social, economic and environment effects associated with the implementation of the DP that may have effect with a particular focus upon a number of social, health and infrastructure related issues in the Greater Manchester area.
Greater Manchester Combined Authority (2024) Places for Everyone Joint Development Plan	
Places for Everyone is a long-term plan of nine Greater Manchester districts (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan) for jobs, new homes, and sustainable growth. It has been published by the GMCA on behalf of the nine districts. The plan is a joint development plan of the nine districts which determines the kind of development that takes place in their boroughs, maximising the use of brownfield land and urban spaces while protecting Green Belt land from the risk of unplanned development. It also ensures all new developments are sustainably integrated into Greater Manchester's transport network or supported by new infrastructure. This plan: • sets out how the nine boroughs should develop up until 2039; • identifies the amount of new development that will come forward across the 9 districts, in terms of housing, offices, and industry and warehousing, and the main areas in which this will be focused; • supports the delivery of key infrastructure, such as transport and utilities; • protects the important environmental assets across the city region; • allocates sites for employment and housing outside of the existing urban area; and • defines a new Green Belt boundary for Greater Manchester	The DP is unlikely to result in the development of new water resources infrastructure. Nevertheless, the SEA should have regard of the development plan.
Lake District National Park Authority (2021) Local Plan	
The Local Plan 2020 to 2035 sets out the strategy for all new development in the Lake District. It provides a practical framework within which decisions on planning applications can be made with a high degree of predictability and efficiency. Local Plans are where some of the big decisions on planning for the future of our communities and use of land are made. The Local Plan provides planning policies which steer development decisions and guide planning applications. This Plan sets out the strategic policies we consider necessary to address the strategic priorities within the	The DP should have regard of the Local Plan. The SEA assessment framework should consider the effects of the DP on the achievement of the Plans' visions.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Lake District. These do not extend to detailed matters that are more appropriately dealt with through neighbourhood plans. As well as providing guidance to assess day to day planning applications, it also identifies where and how many new homes should be built, the locations where businesses need more land to expand or to create new jobs and which areas should be protected from development.	
Lake District National Park Authority (2024) Biodiversity Supplementary Planning Document, Draft for consultation	
The purpose of this Supplementary Planning Document (SPD) is to provide advice and guidance about how biodiversity can be protected and enhanced and to guide developers, planners, and consultants about how biodiversity net gain will be integrated into the development process to ensure that legislation, policy, and best practice standards are met. The objectives of this SPD are to provide guidance to support the understanding of: • Local Plan Policy 04: Biodiversity and Geodiversity • The biodiversity information required when submitting a planning application. • How to apply the mitigation hierarchy to all development proposals; and • How offsite compensation can be secured.	The drought options included in the DP have the potential for effects on biodiversity. The SEA framework should seek to protect and enhance biodiversity in line with the supplementary guidance document.
Liverpool City Region Combined Authority Plan for Prosperity	
The Plan sets out our ambitions and priorities designed to address the key challenges we face, together with a common narrative for how we intend to position ourselves both nationally and globally to maximise our contribution to levelling up and the UK's economic prosperity. The plan provides a strategic framework for our future priorities, policy and investment decisions, and for our conversations with Government about how we work together, through devolution, to increase prosperity for all people and communities in our region. The Plan for Prosperity explains how the Liverpool City Regional will build on our unique economic strengths, tackle the challenges our region faces, and develop transformational policies to unlock economic growth and be a catalyst for the development of a clean and inclusive economy.	The implementation of the DP may have effects on local communities. The SEA should seek to protect the priorities set out the plan.
Liverpool City Region Combined Authority (2023) Five Year Climate Action Plan 2023-2028	
This Plan sets out actions for the Combined Authority to 2028. These actions will be critical in helping ensure that the City Region achieves its 2040 net zero carbon emissions target.	The DP may involve increased energy usage and emissions and should consider the actions set out in the Climate Action Plan.
Local Nature Recovery Strategies (various)	
Local Nature Recovery Strategies (LNRS) are a statutory system introduced in England to drive coordinated, place-based action for nature recovery. Their core objectives are: • To identify priorities for nature recovery in each local area • Map existing habitats	The DP may have an effect on LNRS objectives. The SEA should include objectives that take into account the objectives of the LNRS where relevant (e.g. conservation designation status).

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
• Specify practical, achievable actions for nature recovery • Target action where it will have greatest benefit • Provide a shared, collaborative framework for all stakeholders • Guide investment and support delivery of national environmental targets LNRS have been or are being developed for the North West region for the following areas: • Lancashire LNRS (published January 2026) • Greater Manchester LNRS (in preparation) • Liverpool City Region LNRS (in preparation) • Cheshire LNRS (in preparation)	
Local Planning Authority (various) Land Use Plans	
The UU area covers a large number of Local Planning Authorities. Additionally, Local Development Plans prepared by local authorities in Wales may also be relevant to the DP and SEA. The main objectives of the existing and emerging Land Use Plans in these areas are related to the sustainable development of the area.	SEA should seek to ensure the DP options should be consistent with the Land Use Plans of those local authorities that will be affected by the option.
Local Geodiversity Action Plans (LGAPs)	
Local Geodiversity Action Plans (LGAPs) set out actions to conserve, enhance and promote the geodiversity of a particular area. They aim to identify, conserve and enhance the best sites that represent the geological history of an area. They also aim to promote geological sites, provide a local geodiversity audit and influence local planning policy. Currently, LGAPs exist or are in development for Cheshire Region, Cumbria, Greater Manchester, Lancashire, West Yorkshire, North Pennines and Clwydian Range.	DP options should take into account the aims of the LGAPs. The SEA assessment should consider effects of options on geodiversity and outline enhancement and mitigation opportunities where these are identified.
Local Planning Authority (various) Local Plans/Local Development Plans	
The UU assessment area includes a large number of Local Planning Authorities, identified as: - Cheshire East - Cheshire West and Chester; - Halton Borough Council; - Warrington Borough Council; - Allerdale Borough Council; - Copeland Borough Council; - Barrow In-Furness Borough Council; - Carlisle City Council; - Cumbria County council; - Eden District Council; - South Lakeland District Council; - Bolton Metropolitan Borough Council; - Bury Metropolitan Borough Council;	The DP should take into account the Local Plans and emerging Local Plans. The SEA assessment framework should consider the effects of the DP on the achievement of the Plans' visions and the effects of options on sustainable land use.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
- Manchester City Council; - Oldham Metropolitan Borough Council; - Rochdale Metropolitan Borough Council; - Salford City Council; - Stockport Metropolitan Borough Council; - Tameside Metropolitan Borough Council; - Trafford Metropolitan Borough; - Wigan Metropolitan Borough Council; - Blackburn with Darwen Borough Council; - Blackpool Council; - Burnley Borough Council; - Chorley Borough Council; - Fylde Borough Council; - Hyndburn Borough Council; - Lancashire County Council; - Lancaster City Council; - Pendle Borough Council; - Preston City Council; - Ribble Valley Borough; - Rossendale Borough Council; - South Ribble Borough Council; - West Lancashire Borough Council; - Wyre Borough Council; - Knowsley Metropolitan Borough Council; - Liverpool City Council; - Sefton Council; - St. Helens Metropolitan Borough Council; - Wirral Metropolitan Borough Council; - Bradford District Council; - Calderdale Metropolitan Borough Council; - Craven District Council; - High Peak Borough Council; - Kirklees Metropolitan Borough Council; - Newcastle-under-Lyme Borough Council; - Richmondshire District Council; - Staffordshire Moorlands District Council; - Lake District National Park Authority;	
Local Wildlife Trust Strategies (various)	
There are a number of local Wildlife Trusts in the UU area, including: • Cumbria Wildlife Trust • Lancashire Wildlife Trust	The DP should take into account the key objectives of Wildlife Strategies and protect local wildlife.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
• Cheshire Wildlife Trust • Derbyshire Wildlife Trust	The SEA assessment framework should consider the effects of options on biodiversity.
Natural England, Site Improvement Plans (SIPs) for Natura 2000 Sites (various)	
Site Improvement Plans (SIPs) have been developed for each Natura 2000 site in England as part of the Improvement Programme for England's Natura 2000 Sites (IPENS). The plan provides a high-level overview of the issues (both current and predicted) affecting the condition of the Natura 2000 features on the site(s) and outlines the priority measures required to improve the condition of the features. It does not cover issues where remedial actions are already in place or ongoing management activities which are required for maintenance. There are a number of Natura 2000 sites within the UU operational area.	The DP should seek to avoid contributing to any issues affecting the condition of Natura 2000 site features and contribute to their improvement where appropriate. The SEA should include an objective and guide questions related to the protection of biodiversity and designated species and habitats
Natural England and Environment Agency (various) River Restoration and Water Level Management Plans	
Cumbria River Restoration Strategy The Cumbria River Restoration Strategy was developed to help deliver the joint Natural England/Environment Agency drivers to improve the quality and function of three riverine SSSI/SAC sites; the Eden, Derwent and Kent catchments. River restoration interventions reinstate natural river processes that provide benefits to both people and wildlife.	The DP should seek to support the delivery of the aims of the strategy, where appropriate. The SEA should include an objective and guide questions related to the protection of biodiversity, designated species and habitats and restoration of rivers.
Natural England National Character Area (NCA) Profiles	
There are over 30 NCAs within UU operating boundary. Each of these have individual objective relating to specific landscapes, habitats and species. • Generalised objectives for each of these include: • Conserve characteristic historic structures • Protect the area's rich and diverse archaeology • Protect the area's high levels of tranquillity • Protect, manage and enhance the good rights of way network • Manage and enhance existing habitats • Encourage the maintenance of traditional land management practices • Protect, and encourage sympathetic management	The DP may have an effect on NCAs. The SEA should include objectives that take into account the objectives of the NCAs where relevant (e.g. manage and enhance existing habitats).

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
• Protect and manage geological features • Plan for climate change mitigation and adaptation	
National Park Management Plans (various)	
The following National Parks/management plans are present in the UU area: • Lake District National Park Partnership – The Management Plan 2025-2030 • Peak District National Park Management Plan 2023-2028 • Yorkshire Dales National Park Management Plan 2025-2030 • Eryri National Park Partnership Plan 2020 The management plans for National Parks contain actions to ensure the protection and enhancement of the landscape and natural environment of these areas.	DP options within the National Parks should be consistent with the respective management plan. The SEA assessment framework should consider the effects of options on landscapes and the natural environment, including designated areas. Proposed extensions to the National Park boundaries should also be recognised where appropriate.
Nutrient Neutrality North West	
Nutrient Neutrality North West brings together organisations from a range of sectors with the breadth of expertise and influence needed to bring about action. The partnership project comprises members from Cumberland Council, Environment Agency, Lake District National Park Authority, Natural England, UU and Westmorland and Furness Council, and is supported by the Planning Advisory service. The aim of the project is to: • **Identify and promote delivery of practical mitigation options** in four catchments (including pipeline of offsetting sites) to enable local planning authorities to achieve Nutrient Neutrality with new developments. • **Establish a process to offer mitigation options**/possibilities through credit trading. • **Identify and deliver opportunities for training of Development Management teams** to ensure planning and validation officers have the skills needed to assess and determine planning casework in accordance with the Habitat Regulations in the long-term.	The DP should have regard to the aims of the Nutrient Neutrality North West project. The SEA assessment framework should consider the effects of options on biodiversity and ecosystems, particularly with regards to nutrients.
Outline Water Cycle Studies (Various)	

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
Water cycle studies identify tensions between growth proposals, particularly housing development, and environmental requirements, and identify potential solutions to addressing them. Outline Water Cycle Studies have been prepared for Mid Mersey (Warrington Borough Council, Halton Borough Council and St. Helens Council), Cheshire West and Chester and Central Lancaster and Blackpool Councils have jointly prepared an Outline Water Cycle Study. The strategic objectives for Outline Water Cycle Studies are to: • Identify whether environmental resources can cope with further development, with particular reference to Water Framework Directive targets and UKCP09 climate change projections (i.e. Can growth be accommodated without breaching water quality and abstraction limits); • Identify any potential impacts of development on the specially designated conservation sites and watercourses in the specified areas and other sites or features of significant nature conservation importance resulting from additional abstraction and wastewater discharge;	The DP should take into account any water cycle studies completed for identified growth areas (Mid Mersey, Cheshire West and Chester, Central Lancashire and Blackpool). The SEA assessment framework should include an objective relating to the efficient management of water.
Public Rights of Way Improvement Plans (ROWIPs)	
Objectives include those associated with each local authority's rights of way improvement plans.	The DP operation may have the potential to affect the objectives of the ROWIPs. The SEA will include objectives that consider the objectives of the ROWIPs where relevant.
River Restoration and Water Level Management Plans	
Natural England and Environment Agency, Cumbria River Restoration Strategy	The DP may have an effect on River Restoration Plans for non-Natura 2000 sites. The SEA should include objectives that consider the objectives of these sites where relevant.
West Lancashire Partnership	
The West Lancashire partnership involves several organisations working together to improve the health, care and wellbeing of people living in West Lancashire, superseding the One West Lancs Partnership, which was formed in April 2013, and is a partnership of local voluntary, public and business sectors. The partnership is working towards a common vision: 'A place where we help each other, ourselves and our communities to be the very best we can be.' The key aims of the West Lancashire Partnership are arranged into 4 categories: • Health and Wealth • Caring for You • Caring for Yourself	There may be some economic effects associated with the implementation of the DP and the future management of water resources in the North West. The DP may also have some effects upon recreational and leisure opportunities. This may have an impact upon some of the strategic ambitions set out in the objectives of the West Lancashire Partnership. The SEA should seek to address the potential effects upon the local economy.

Objectives identified in the Policy, Plan or Programme	Influences on the Drought Plan (DP) and the SEA objectives
• Place	
World Heritage Site Management Plans (various)	
World Heritage Sites are required to have a Management Plan, as part of their management system, that sets out why the place is special; what will be done to conserve and enhance it over a five-year period, and what will be done to explain its significance to visitors. The following World Heritage Sites are within the SEA study area: • Hadrian's Wall Partnership Board (2015) Hadrian's Wall Management Plan 2015-2019 • Blaenavon Industrial Landscape (Torfaen County Borough Council (2011)) • Pontcysyllte Aqueduct and Canal World Heritage Site – Management Plan 2019-2029 • Welsh Government (2018) Castles and Town Walls of King Edward in Gwynedd World Heritage Site: World Heritage Site Management Plan 2018 – 28. • Lake District National Park	The SEA should ensure that there are no negative direct or indirect impacts, for example during construction, on world heritage sites.

APPENDIX D: SEA APPRAISAL TABLES

Drought Plan Option Name: **Castle Carrock reservoir, dead water storage**

Drought Plan Option Description: **Installation of temporary submersible pumps to utilise dead storage (170 Ml) below Trigger 4, new pumps and rising main, modifications to include a temporary filter plant at the front of the works. The estimated deployable output from this option during a drought is 6.0 Ml/d.**

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium	**Construction** Assuming that works will be limited to within the footprint of the reservoir and associated infrastructure, with small land clearance or disturbance and minor construction work. There will be no loss of designated habitat due to the scheme as the construction footprint does not overlap any designated sites. Assuming best practice construction measures, impacts on nearby designated sites (including the North Pennine Moors SAC and River Eden SAC) will be negligible. Construction activities may result in localised disturbance to local habitats and species during the works. This disturbance is anticipated to be short-term, temporary and reversible and is expected to be of negligible impact. Assuming best practice construction and mitigation methods are implemented, the potential impacts of construction, including on the potential spread of invasive species, are considered to be minor adverse. **Operation** The drought option involves abstraction of dead water from Castle Carrock Reservoir only (which is not part of any area designated for nature conservation). This option involves accessing water below the normal draw-off level during drought conditions. The option is not dependent on abstraction from the River Eden i.e., the reservoir can be drawn down even if there is no abstraction from the river. As such, there are no impacts on the designated features of the River Eden SAC. There may be fish resident in the reservoir, and there may be impacts on this population dependent on the extent of drawdown. It is assumed any impacts on fish populations will be mitigated e.g., through fish rescues. This impact has been assessed as minor adverse. It is assumed any abstraction would be within license limits and would maintain any compensation flows.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium	**Construction** During construction, there may be a small land clearance or disturbance to the riparian vegetation and aquatic habitats along the reservoir margin, resulting in temporary habitat loss. Where biodiversity units are lost during construction, there are opportunities for compensatory planting and habitat enhancement which can lead to beneficial impacts. However, the small footprint provides limited opportunity for enhancement. **Operation** During operation in drought conditions, reservoir water levels may deplete further, leading to worsening conditions for water dependent species and habitats in the reservoir. At this drought planning stage, the scale and location of BNG measures and benefits can only be defined at a high level and are subject to refinement once scheme designs are finalised. As such, this assessment excludes any potential Biodiversity Net Gain benefits.	Minor adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Small	Medium	Short-term	Permanent	Low (adverse)	Low	**Construction** Assuming best practice construction and mitigation methods are implemented, the potential impacts of construction on the potential spread of invasive species are considered to be negligible. **Operation** Pumping and lower water levels could expose or mobilise INNS. Implementation of best practice biosecurity would mitigate these impacts.	Negligible adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	**Construction** Construction impacts are likely to be of a short-term and temporary nature. As they will be limited in scale, the impacts on the local community will be short-term, reversible and minor. During the construction phase, there will be no impact on security of supplies or quality of drinking water. **Operation** Implementation of this drought option would enable the continued supply of water if dry weather continues. The estimated deployable output during a drought would be 6.0 Ml/d. Without implementation of this drought option in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk.	Minor adverse	Minor beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	Medium	Short-term	Temporary	Low (adverse)	Low	**Construction** Construction impacts are likely to be of a short-term and temporary nature. Given that construction activities will take place within an existing site, negligible impacts are anticipated. It is assumed that public rights of way will be maintained during the construction phase. **Operation** The reservoir supports low impact recreational activities such as walking trails and angling. As a result of the reservoir drawdown, there may be some negligible adverse impacts on recreation including activities such as angling.	Negligible adverse	None
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	**Construction** Construction impacts are likely to be of a short-term and temporary nature. As they will be limited in scale, the impacts on the local community will be short-term, reversible and minor. During the construction phase, there will be no impact on security of supplies or quality of drinking water. **Operation** Implementation of this drought option would enable the continued supply of water if dry weather continues. Without implementation of this drought option in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk.	Minor adverse	Minor beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Permanent	Low (adverse)	Medium	**Construction** Construction requirements for the modifications to the filter plant and installation of the temporary pumping station include a concrete base for pre-fabricated filtration plant and M&E building (~3mx4m) and access track. Installation of an acid rig and pump-sets/M&E including tapping into existing pipework. A small volume of materials will be required, including 60t of hardcore and 20m^3 of concrete. **Operation** Changes to energy use are envisaged due to increased pumping of water from the reservoir.	Minor adverse	None
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	Medium	Short-term	Permanent	Low (beneficial)	Medium	**Operation** Using dead water storage will enhance the efficiency of water resource management to support the maintenance of essential public water supplies during drought conditions. The additional abstraction would be within the existing license.	None	Minor beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium	**Construction** Temporary submersible pumps would be required to pump the dead storage. The impact of installation of the pumps may be temporary localised minor impacts towards flows in the reservoir, which are anticipated to be negligible. **Operation** Abstraction of dead storage would result in increased drawdown of the reservoir by an estimated additional 6m below the normal operational drawdown limit. Abstraction would remain within existing abstraction license, no additional impacts on flow. This impact has been assessed as minor adverse, temporary and reversible.	Minor adverse	None
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium	**Construction** Temporary submersible pumps would be required to pump the dead storage. The impact of installation of the pumps may be temporary minor impacts due to disturbance of reservoir margins, mobilising sediments and increasing turbidity. There is also potential for construction run off to contaminate the reservoir. Assuming best practice construction and mitigation methods are implemented, the potential impacts of construction are considered to be minor adverse. **Operation** Abstraction of dead storage would result in increased drawdown of the reservoir by an estimated additional 6m below the normal operational drawdown limit. This may lead to concentration of nutrients and lowering of dissolved oxygen (DO), which can stress aquatic ecology present in the reservoir. Abstraction would remain within existing abstraction license.	Minor adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Small	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	**Construction** Temporary submersible pumps would be required to access the dead storage. The installation impacts are expected to be short-term and localised, with a potential minor adverse effect on reservoir water quality. **Operation** Abstraction of dead storage would result in increased drawdown of the reservoir by an estimated additional 6m below the normal operational drawdown limit. However, it is noted that the reservoir is a storage reservoir and not a natural water body. Using dead water storage will enhance the efficiency of water resource management to support the maintenance of essential public water supplies during drought conditions. Abstraction would remain within existing abstraction license. No risk to WFD status is anticipated.	Minor adverse	Minor beneficial
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	This action will not contribute to the long-term improvement in water efficiency as it is a short-term emergency measure.	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	**Construction** There would be no major land use changes associated with this option, and works are within the existing United Utilities site. Installation of the pumps in the reservoir may result in small localised reversible changes to geomorphology (due to any disturbance of bed material). This impact has been assessed as negligible. **Operation** Reservoir drawdown and exposure of shoreline margins may result in temporary and reversible geomorphological impacts. Overall, the impacts on soil, geology and land use are summarised as negligible.	Negligible adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	This option is a technical supply-side measure, not a land management strategy. There would be no major land use changes associated with this option, and works are within the existing United Utilities site.	None	None
Air and climate	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	Small	Low	Short-term	Temporary	Low (adverse)	Low	**Construction** A mobile crane, excavator and numerous HGV vehicles used in construction of this option will cause emissions affecting air quality. The area is not within any areas designated for air quality management. Due to the anticipated small scale of works associated with this option and assumed best practice, low levels of dust and other emissions are anticipated. **Operation** Vehicle movements for maintenance purposes during operation are anticipated to be minimal.	Negligible adverse	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Air and climate	6.2 Reduce greenhouse gas emissions.	Small	Medium	Short-term	Permanent	Low (adverse)	Medium	**Construction** The installation of the pumps will require delivery of plant and materials to site, resulting in an increase in CO_2 emissions. **Operation** Increase in energy use for pumping water from dead storage and through the rising main and therefore CO_2 emissions are envisaged anticipated. This impact has been assessed as minor adverse.	Minor adverse	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium	**Operation** Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change. The use of renewable energy has not been confirmed at this stage.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	**Construction** The construction phase is restricted to the area within the existing site, and as such, it is not anticipated that any sites of archaeological or cultural heritage importance will be affected. Construction impacts on archaeology and cultural heritage are anticipated to be negligible. **Operation** Additional drawdown of the reservoir is not anticipated to impact any sites of archaeological or cultural heritage importance, or palaeo-environmental remains.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Small	Medium	Short-term	Temporary	Low (adverse)	High	**Construction** There may be an impact to landscape and visual amenity during installation of the temporary pumps, due to plant and vehicles on site. This impact is temporary and reversible and has been assessed as minor adverse (as the site is within the North Pennines National Landscape). **Operation** The increased drawdown of the reservoir (by an estimated additional 6m below the normal operational drawdown limit) is anticipated to have temporary minor adverse effects on landscape and visual amenity due to changes in exposure of the reservoir shoreline. The new buildings are relatively small in size and within the existing site area. As the option would most likely be used during peak tourist season and the site is within the North Pennines National Landscape, the impact of the drought option on landscape and visual amenity is considered to be moderate adverse but temporary.	Moderate adverse	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	**Construction** No significant inter-relationships have been identified during the construction phase. **Operation** Key inter-relationships between topics include reservoir level impacts on biodiversity, flora and fauna, soil, geology and land use and landscape and visual amenity. Overall these have been summarised as minor adverse.	Minor adverse	None

Drought Plan Option Name: **Drought Publicity**

Drought Plan Option Description: **On reaching Level 1 United Utilities would enhance their water conservation/efficiency publicity programme to customers. At each subsequent level the communications to customers would reflect the actions associated with that trigger (e.g. at Level 1, a campaign for voluntary water use restraint may commence using our Agile communications approach). Concurrent actions could include rezoning of water supplies. A combination of increased publicity and a campaign for voluntary water use restraint could result in a saving of 2% of the average dry weather demand expected during a drought period (up to 3 Ml/d per year). During the winter, publicity will focus on providing advice to customers to use water wisely inside the home and to lag their pipes to prevent bursts in freezing temperatures. Whereas in the spring/summer, publicity would concentrate on the use of water for garden watering etc.**

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium / high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Drought publicity is assumed to be communicated through radio, internet/social media and newspaper advertisements. Such methods of publicity are considered to have no impact on biodiversity, flora or fauna, other than to acknowledge that reduced consumer demand for water will result in reduced requirement for abstraction at source (and therefore, potential for beneficial impacts on flow-dependent sensitive habitats/species). Overall, the impact of this action on biodiversity has been summarised as minor beneficial.	None	Minor beneficial
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Drought publicity will have no adverse effect on natural resources or ecosystem services. As this action will reduce consumer demand for water there will be less abstraction from United Utilities water sources. This may result in beneficial effects on sustainable natural resources. This action is unlikely to provide or deliver Biodiversity Net Gain.	None	Minor beneficial
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Drought publicity is considered to have no impact on the introduction or spreading of INNS.	None	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	Drought publicity will result in water savings (up to 3Ml/d), which will contribute towards improving the security of supply of water in United Utilities' supply region. There is potential for the media/water efficiency campaign to raise awareness of the importance and value of water environment for health and well-being.	None	Minor beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Large	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	Drought Publicity may increase awareness of and promote sustainable tourism activities and sites. There is potential for changes in public perception of water-based recreation (e.g., swimming, boating, angling), reduction in visitor numbers at water-dependent recreational sites (e.g., reservoirs, lakes), or reduced maintenance at facilities like public pools, water parks, or fountains, especially during heightened drought messaging.	Negligible adverse	Negligible beneficial
Population and human health	2.3 To promote a sustainable economy with the provision of access to essential services, including a resilient, high quality, sustainable and affordable supply of water.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	Drought publicity will result in water savings (up to 3Ml/d), which will contribute towards improving the security of supply of water in United Utilities' supply region. The impact of this action has been summarised as minor beneficial and temporary, taking into account the potential for reduced water consumption.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Low	Drought publicity will not involve any increased material resource use and waste production. Drought publicity will result in increased awareness of the public of water resource consumption and waste (water) resulting in less energy waste associated with water treatment and pumping, as reduced demand leads to lower operational loads, and decreased pressure on infrastructure. This action will reduce the amount of water used in the region. Impacts have been summarised as negligible beneficial and temporary.	None	Negligible beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	Drought publicity will result in increased awareness of water resource consumption and waste (water). This action will reduce the amount of water used in the region. Impacts have been summarised as minor beneficial and temporary.	None	Minor beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium / high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Drought publicity is assumed to be communicated through radio, internet/social media and newspaper advertisements. Such methods of publicity are considered to have beneficial impact on water, acknowledging that reduced consumer demand for water will result in reduced requirement for abstraction at source, maintaining natural flow regimes. Overall, the impact of this action on water has been summarised as minor beneficial.	None	Minor beneficial
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Reductions in demand for water due to this drought plan action would result in a reduced requirement for abstraction from United Utilities' sources, reducing associated abstraction impacts on surface water and groundwater quality in drought conditions.	None	Minor beneficial
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	Drought publicity is assumed to be communicated through radio and newspaper advertisements. Such methods of publicity are considered to have beneficial impact on water, acknowledging that reduced consumer demand for water (2% of the average dry weather demand expected during a drought period) will result in reduced requirement for abstraction at source. This, in turn, should help maintain ecological flow requirements, prevent over-abstraction, and achieve good ecological and chemical status in WFD waterbodies. Overall, the impact of this action on water has been summarised as minor beneficial.	None	Minor beneficial
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	Large	Medium	Short-term/Medium-term	Temporary	Low (beneficial)	Medium	The drought publicity are considered to have beneficial impact on water via reduced consumer demand for water. This may have short to medium-term impacts on consumer behaviours and water usage through information provision and providing information to the public regrading water efficiency methods.	None	Minor beneficial
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on soils, geology and land use are anticipated as a result of this drought action.	None	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on catchment land management are anticipated as a result of this drought action.	None	None
Air and climate	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on air quality are anticipated as a result of this drought action.	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	Medium	Medium	Short-term/Medium-term	Temporary	Low (beneficial)	Low	This action would lead to reduced water use at household level through behaviour change, resulting in less energy required for water treatment and pumping and associated emissions.	None	Negligible beneficial
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Large	High	Short-term	Temporary	Low (beneficial)	Medium	Demand measures are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change. Drought publicity will inform, engage, and prepare communities for the ongoing and future impacts of climate change through responsible water use and reduce demand during periods of scarcity.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Drought publicity is considered to have no direct impact on the historic environment, heritage assets and their settings and archaeologically important sites.	None	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	N/A	N/A	N/A	N/A	N/A	N/A	Drought publicity is considered to have no direct impact on landscape and visual amenity.	None	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	Reduction in water use (Material Assets and Resource Use) has the potential to positively affect other topics including Biodiversity, Flora and Fauna and Water due to reduced requirement for abstraction at source. This impact has been summarised as minor beneficial.	None	Minor beneficial

Drought Plan Option Name: **Increased leakage detection and repair activity**

Drought Plan Option Description: **Savings made through enhanced leakage detection and repair will vary across the region and will depend upon the situation in other regions of the country, the location and severity of the drought, the timescale for implementation of the action etc. Potential saving of up to 8.9 Ml/d, however enhanced leakage detection and repair may not result in a reduction in leakage levels, but rather reduce the increase that would otherwise have occurred.**

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Medium	Short-term (adverse) Long-term (beneficial)	Temporary (adverse) Permanent (beneficial)	Low (adverse) Low (beneficial)	Medium	Construction activities associated with leakage detection and repair activities may result in disturbance to local habitats and species during the works, however, most infrastructure is assumed to be located in urbanised areas where habitat sites are limited. The disturbance is anticipated to be short-term, temporary and reversible. It is acknowledged that reduction in water lost through leakage will result in reduced requirement for abstraction at source (and therefore, potential for minor beneficial impacts on flow-sensitive habitats/species). Assuming good practice construction methods, adverse effects on biodiversity have been summarised as negligible adverse.	Negligible adverse	Negligible beneficial
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term (adverse) Long-term (beneficial)	Temporary (adverse) Permanent (beneficial)	Low (adverse) Low (beneficial)	Medium	Construction activities associated with leakage detection and repair activities may disturb local habitats and species. This is anticipated to be short-term, temporary and reversible. Additionally, these works are presumed to take place along existing disturbed infrastructure corridors using maintenance access routes, and be carried out with good practice construction methods. Where pipes are fixed there may be long-term benefits associated with water savings, lessening the need for abstraction, which can enhance sustainable natural resources and enhance ecosystem services. At this drought planning stage, the scale and location of Biodiversity Net Gain (BNG) measures and benefits can only be defined at a high level and are subject to refinement once scheme designs are finalised. As such, this assessment excludes any potential BNG benefits.	Minor adverse	Minor beneficial
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low	Leak detection and repair may have minor effects on the spread of INNS through limited vehicle and equipment movement and ground disturbance. Appropriate biosecurity measures should be implemented.	Negligible adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	Medium	Short-term (adverse) Long-term (beneficial)	Temporary (adverse) Permanent (beneficial)	Low (adverse) Medium (beneficial)	Medium	Construction activities associated with leakage detection and repair activities may result in nuisance effects associated with traffic and noise. However, these will be short-term at any one location (along existing disturbed infrastructure corridors using maintenance access routes) and assuming best practice construction methods, effects will be minimal. Leakage detection and repairs will provide water savings of up to 8.9Ml/d which will contribute towards improving the security of supply of water in the United Utilities' supply region. Drinking water quality will not be affected by the leakage detection and repair.	Negligible adverse	Moderate beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Large	Low	Short-term (adverse)	Temporary (adverse)	Low (adverse)	Low	Construction activities associated with leakage detection and repair activities may result in temporary nuisance effects associated with traffic and noise. However, these will be short-term at any one location (along existing disturbed infrastructure corridors using maintenance access routes) and assuming best practice construction methods, effects will be minimal. It is assumed that public rights of way will be maintained during repair activities and there will be no effects on recreational opportunity.	Negligible adverse	None
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Large	Medium	Short-term (adverse) Long-term (beneficial)	Temporary (adverse) Permanent (beneficial)	Low (adverse) Medium (beneficial)	Medium	Works associated with leak repairs may result in some localised, short term and temporary noise and dust nuisance impacts, as well as temporary disruptions of services or access/disturbance and disruption of economic activities. Leakage detection and repairs will provide water savings of up to 8.9Ml/d which will contribute towards improving the security of supply of water in the United Utilities' supply region.	Negligible adverse	Moderate beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	High	Short-term (adverse) Long-term (beneficial)	Temporary (adverse) Permanent (beneficial)	Low (adverse) Low (beneficial)	Low	The intervention involves the repair of existing infrastructure, minimising the need for new construction. Where repairs require the use of raw materials, it is assumed these will be sourced locally to reduce transport impacts and support the local economy. Any waste generated would be managed as per standard good practice. Leakage detection and repairs will result in the reduction of water lost in the supply network (of up to 8.9Ml/d).	Negligible adverse	Negligible beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Large	Medium	Long-term	Permanent	Medium (beneficial)	Low	Leakage detection and repairs will result in the reduction of water lost in the supply network (of up to 8.9Ml/d). The impact of this action has been summarised as minor beneficial.	None	Minor beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Medium	Long-term	Permanent	Low	Medium	The drought option will not directly result in, or modify any abstraction (surface water or groundwater) and therefore will not affect surface water or groundwater levels. However, the reduction in water lost through leakage will result in reduced requirement for abstraction at source, resulting in a minor beneficial effect.	None	Minor beneficial
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	Medium	Short-term (adverse) Medium to Long-term (beneficial)	Temporary (adverse) Permanent (beneficial)	Low (adverse) Low (beneficial)	Medium	Leakage detection/repair construction activities may impact local surface and groundwater quality. The works associated with this option would be limited to existing infrastructure corridors and maintenance routes. Assuming best practice construction methods, impacts on the construction phase are anticipated to be negligible. The reduction in water lost through leakage will result in reduced requirement for abstraction at source, and therefore also mitigate any surface water quality effects associated with abstraction.	Negligible adverse	Negligible beneficial
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Large	Medium	Medium to Long-term (beneficial)	Permanent (beneficial)	Low	Medium	The works associated with this option would be limited to existing infrastructure corridors and maintenance routes. As such, no adverse impacts on water resources are anticipated. Reduction in water lost through leakage will result in reduced requirement for abstraction at source. Overall, the impacts have been assessed as minor beneficial.	None	Minor beneficial
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	Large	Medium	Long-term	Permanent	Medium (beneficial)	Medium	The action will improve the efficiency of the water supply network in the long term by preventing the unnecessary loss of water that has already been abstracted, treated, and pressurised. This enhances overall system efficiency by ensuring more of the water supplied reaches end-users.	None	Moderate beneficial
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low	Construction activities associated with leakage detection and repair activities may result in localised disturbance to soils and geology during the works. As leakage detection and repair activity will take place along existing disturbed infrastructure corridors using maintenance access routes, this disturbance is anticipated to be short-term, temporary and reversible.	Negligible adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	Large	Medium	Short-term (adverse) Medium to Long-term (beneficial)	Temporary (adverse) Permanent (beneficial)	Low (adverse) Medium (beneficial)	Low	Construction activities associated with leakage detection and repair activities may lead to soil disturbance, sediment runoff and habitat disruption, which could conflict with catchment-wide land management objectives. As leakage repair activity would be small-scale and would occur on pipelines already in situ, the disturbance is anticipated to be short-term, temporary and reversible with the overall impact assessed as negligible. Leakage detection and repair supports catchment objectives by reducing water loss, preventing soil saturation and erosion, and lowering pollution risks, contributing to sustainable land management.	Negligible adverse	Minor beneficial
Air and climate	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	Small	Low	Short-term	Temporary	Low (adverse)	Low	Vehicle trips necessary for leakage detection and repair will cause emissions affecting air quality, including some within Air Quality Management Areas in United Utilities' supply area. Due to the anticipated small scale of works associated with this option, low levels of dust and other emissions are anticipated. Leakage detection and repairs will result in the reduction of water lost in the supply network and long term energy savings associated with this reduction (decreased CO_2 emissions associated with decreased need for water treatment and pumping). Given these long term benefits, the beneficial impacts on air and climate are anticipated to be negligible.	Negligible adverse	Negligible beneficial
Air and climate	6.2 Reduce greenhouse gas emissions.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	Excavation works and repair activity will require the use of plant and vehicles, which will result in temporary increase in GHG emissions in the short term, associated with construction activities. Leakage detection and repairs will result in the reduction of water lost in the supply network and long term energy savings associated with this reduction (decreased CO_2 emissions associated with decreased need for water treatment and pumping). Given these long term benefits, the impacts on air and climate are anticipated to be negligible.	Negligible adverse	Negligible beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Medium	High	Long term	Permanent	Medium (beneficial)	Medium	Demand measures are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change. Leakage reduction increases system resilience to more frequent and severe droughts by preserving water within the network.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	Leakage detection and repair activity will take place along existing disturbed infrastructure corridors using maintenance access routes, and as such, it is not anticipated that any sites of archaeological or cultural heritage importance will be affected. Impacts are anticipated to be negligible.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Small	Medium	Short-term	Temporary	Low (adverse)	Low	Although there will be some temporary, short-term impacts of leakage detection and repair activity upon localised landscapes, the effect of the leakage detection and repair is not anticipated to have any long term impacts upon landscape, as the works will take place along existing disturbed infrastructure corridors using maintenance access routes. It is acknowledged that reduced consumer demand for water will result in reduced requirement for abstraction at source, potentially reducing any impacts of drought related landscape or visual impacts. Impacts on landscape and visual amenity are anticipated to be negligible.	Negligible adverse	Negligible beneficial
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Large	Medium	Long-term	Permanent	Low (beneficial)	Medium	Reduction in water lost (Material Assets and Resource Use) has the potential to positively affect other topics including Biodiversity, Flora and Fauna, Water, and Landscape and Visual Amenity due to reduced requirement for abstraction at source. This impact has been summarised as minor beneficial.	None	Minor beneficial

Drought Plan Option Name: **Campaign for voluntary water use restraint**

Drought Plan Option Description: **In order to encourage a reduction in customer demand for water, United Utilities will commence a campaign for voluntary water use restraint at drought level 1. The message will be conveyed through the use of press releases and coverage on our website and social media channels. The saving associated with a campaign for voluntary water use restraint has been estimated to be 3-5% of the average dry weather demand expected during the drought period.**

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Campaign for voluntary water use restraint is assumed to be communicated through the use of press releases and coverage on the United Utilities website and social media channels. Such methods of publicity are considered to have no impact on biodiversity, flora or fauna, other than to acknowledge that reduced consumer demand for water will result in reduced requirement for abstraction at source (and therefore, potential for beneficial impacts on flow sensitive habitats/species). Overall, a negligible beneficial impact is assessed.	None	Negligible beneficial
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Campaign for voluntary water use restraint will have no adverse effect on natural resources or ecosystem services. As this action will reduce consumer demand for water there will be less abstraction from United Utilities water sources. This may result in negligible beneficial effects on sustainable natural resources. This action is unlikely to provide or deliver Biodiversity Net Gain.	None	Negligible beneficial
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Drought publicity is considered to have no impact on the introduction or spreading of INNS.	None	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	The saving associated with a campaign for voluntary water use restraint has been estimated to be 1-2% of the average dry weather demand expected during the drought period, which will contribute towards improving the security of supply of water in United Utilities' supply region. There is potential for the media/water efficiency campaign to raise awareness of the importance and value of water environment for health and well-being and embed sustainable water use into consumers. As the campaign depends on voluntary uptake, a minor beneficial effect is assessed.	None	Minor beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Large	Medium	Short-term	Temporary	Low (beneficial)	Low	Campaign for water use restraint may enhance opportunities for recreation through encouraging sustainable water usage. If effective, less usage should mean less abstraction and consequently, healthier water sources for recreational activities.	None	Negligible beneficial
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	The saving associated with a campaign for voluntary water use restraint has been estimated to be 1-2% of the average dry weather demand expected during the drought period, which will contribute towards improving the security of supply of water for businesses in United Utilities' supply region. As the campaign depends on voluntary uptake, a minor beneficial effect is assessed.	None	Minor beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Campaign for voluntary water use restraint is assumed to be communicated through the use of press releases and coverage on our website and social media channels and as such will not involve any increased material resource use. The action will result in increased awareness of the public of water resource consumption and waste (water). This action will reduce the amount of water used in the region, 1-2% of the average dry weather demand per year. Impacts have been summarised as minor beneficial and temporary.	None	Minor beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	Campaign for voluntary water use restraint will result in increased awareness of the public of water resource consumption and waste (water). This action will reduce the amount of water used in the region, 1-2% of the average dry weather demand per year.	None	Minor beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Campaign for voluntary water use restraint is assumed to be communicated through the use of press releases and coverage on our website and social media channels. Such methods of publicity are considered to have beneficial impact on water, acknowledging that reduced consumer demand for water (1-2%) will result in reduced requirement for abstraction at source. Overall, the impact of this option on water has been summarised as minor beneficial.	None	Minor beneficial
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Reductions in demand for water due to this drought plan action would result in a reduced requirement for abstraction from United Utilities' sources, reducing associated abstraction impacts on surface water and groundwater quality in drought conditions. The savings are based on voluntary uptake and difficult to estimate, therefore impacts are anticipated to be negligible.	None	Negligible beneficial
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Large	Medium	Short-term	Temporary	Medium (beneficial)	Medium	Campaign for voluntary water use restraint is assumed to be communicated through the use of press releases and coverage on our website and social media channels. Such methods of publicity are considered to have beneficial impact on water, acknowledging that reduced consumer demand for water (1-2% of the average dry weather demand expected during a drought period) will result in reduced requirement for abstraction at source.	None	Minor beneficial
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	Large	Medium	Short-term/Medium-term	Temporary	Medium (beneficial)	Medium	Campaigns for voluntary water use restraint are considered to have beneficial impact on water via reduced consumer demand for water. The promotion of water efficiency measures may have short-medium term impacts on consumer behaviours and water usage through information provision and providing information to the public regrading water efficiency methods.	None	Moderate beneficial
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on soils, geology and land use are anticipated as a result of this drought action.	None	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	This drought option is aimed at demand reduction which has no direct impact on catchment land management.	None	None
Air and climate	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	Campaign for voluntary water use restraint is assumed to be communicated through the use of press releases and coverage on our website and social media channels and as such will not involve any increased resource use, or increased CO2 emissions. No impacts of the drought option on air and climate are anticipated.	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	Medium	Medium	Short-term/Medium-term	Temporary	Low (beneficial)	Medium	This action would lead to reduced water use at household level through behaviour change, resulting in less energy required for water treatment and pumping and associated emissions.	None	Minor beneficial
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Large	Medium	Short-term	Temporary	Medium (beneficial)	Medium	Demand measures are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Drought publicity is considered to have no direct impact on the historic environment, heritage assets and their settings and archaeologically important sites.	None	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	N/A	N/A	N/A	N/A	N/A	N/A	Campaign for voluntary water use restraint is considered to have no impact on landscape and visual amenity.	None	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Large	Medium	Long-term	Temporary	Low (beneficial)	Medium	Reduction in water use (Material Assets and Resource Use) has the potential to positively affect other topics including Biodiversity, Flora and Fauna and Water due to reduced requirement for abstraction at source. This impact has been summarised as minor beneficial.	None	Minor beneficial

Drought Plan Option Name: **TUB (Water use restriction)**

Drought Plan Option Description: **Option comprised of voluntary water use restrictions (applying to the general use of a hosepipe for domestic purposes) and statutory water use restrictions. The saving associated with water use restrictions has been estimated to be ~3% of the average dry weather demand expected during the drought period.**

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	The temporary use ban is considered to have no impact on biodiversity, flora or fauna, other than to acknowledge that reduced consumer demand for water will result in reduced requirement for abstraction at source (and therefore, potential for beneficial impacts on flow sensitive habitats/species). Overall, the impact of this option on biodiversity has been summarised as negligible.	None	Negligible beneficial
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	No construction associated with this action. TUB is considered to have no adverse impact on natural resources and ecosystem services. Reduced demand for water will result in reduced need for abstraction from United Utilities water sources and, therefore, there is potential for beneficial impacts to support better use of natural resources and support better use natural resources and support ecosystem services for longer. There is no scope to provide Biodiversity Net Gain	None	Negligible beneficial
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	The temporary use ban is unlikely to have impact on the introduction or spreading of INNS, with reduced abstraction requirements leaving more water in river systems.	None	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	The temporary use ban will provide water savings which will contribute towards improving the security of supply of water in the United Utilities' supply region. Drinking water quality will not be affected by the restrictions. Temporary restrictions on domestic water uses may reduce personal or community activities and may have a short-term impact on the standard of living.	Minor adverse	Minor beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	There may be potential for minor adverse impacts upon recreational opportunity due to restriction on filling of domestic swimming or paddling pools and water use in gardens and allotments etc. Beneficial effects include the potential for maintaining flow levels in watercourses to support recreational activities, and improving recreational amenity.	Minor adverse	Minor beneficial
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Large	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	The impact of the drought action would be restricted to domestic customers. It is assumed the temporary use ban would include an exemption for relevant businesses e.g. car wash/window cleaners. Vulnerable members of the population would also be exempt from the measures imposed under the temporary use ban. There may be some impact on the horticultural business sector in general, as plant buying patterns have the potential to change during the imposition of a temporary use ban, however this may also result in long term behaviour changes towards the use of more sustainable/water efficient planting. TUBs would safeguard water supplies for critical needs to maintain essential services during drought and would ensure economic sustainability.	Minor adverse	Minor beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	A hose-pipe ban will reduce the demand for water in the region, improving the efficiency of existing resource use. It will not result in any increase in the generation of waste.	None	Minor beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	Water use restrictions will reduce the demand for water in the region, improving the efficiency of existing resource use. Impacts have been summarised as moderate beneficial and temporary (i.e., while the restrictions are in place).	None	Minor beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	This action will not directly result in, or modify any abstraction (surface water or groundwater). Reduction in demand for water will result in reduced requirement for abstraction at source.	None	Minor beneficial
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	Low	Short-term	Temporary	Low (beneficial)	Medium	Reduced demand for water would result in reduced requirement for abstraction at source, reducing the risk of associated impacts on surface water quality in drought conditions.	None	Minor beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	This action will not directly result in, or modify any abstraction (surface water or groundwater). Reduction in demand for water will result in reduced requirement for abstraction at source.	None	Minor beneficial
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	Medium	Medium	Short-term/Medium-term	Temporary - Permanent	Medium (beneficial)	Medium	This action will have a beneficial impact on water, acknowledging that reduced consumer demand for water will result in reduced requirement for abstraction at source. This may have short to medium-term impacts on consumer water usage if it induces behavioural change which could have moderate beneficial impacts.	None	Moderate beneficial
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on soils, geology and land use are anticipated as a result of this drought action.	None	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on catchment land management are anticipated as a result of this drought action.	None	None
Air and climate	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on air quality are anticipated as a result of this drought action.	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	This action would lead to reduced water use at household level, resulting in less energy required for water treatment and pumping and associated emissions.	None	Minor beneficial
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Demand measures are a key component of United Utilities' Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a moderate beneficial impact on adaptation to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	The ban is considered unlikely to have any direct impact on the historic environment, heritage assets and archaeologically important sites.	None	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	N/A	N/A	N/A	N/A	N/A	N/A	The ban is considered to have no direct impact on landscape and visual amenity or any changes to access to the countryside or open space.	None	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	Medium	Long-term	Temporary	Low (beneficial)	Medium	Reduction in water use (Material Assets and Resource Use) has the potential to positively affect other topics including Biodiversity, Flora and Fauna, and Water due to reduced requirement for abstraction at source. This impact has been summarised as minor beneficial.	None	Minor beneficial

Drought Plan Option Name: **Ordinary Drought Order (Non-Essential Use Ban)**

Drought Plan Option Description: **When implemented during drought (April–September), the Ordinary Drought Order is expected to deliver an additional 5% demand reduction, resulting in a cumulative summer saving of ~10% when combined with voluntary reductions and the Temporary Use Ban. This equates to an annualised saving of ~5%, as the measure is only active during drought months.**

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	An Ordinary Drought Order is considered to have no impact on biodiversity, flora or fauna. Reduced consumer demand for water will result in reduced requirement for abstraction at source (and therefore, potential for beneficial impacts on flow sensitive habitats/species). Overall, the impact of this action on biodiversity has been summarised as minor beneficial.	None	Negligible beneficial
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	No construction or groundworks activities associated with this action. An Ordinary Drought Order is considered to have no impact on biodiversity, flora or fauna. Reduced consumer demand for water will result in reduced requirement for abstraction at source (and therefore, potential for beneficial impacts on flow sensitive habitats/species). There is not expected to be any scope for delivery or provision of Biodiversity Net Gain as part of this action.	None	Negligible beneficial
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	An Ordinary Drought Order likely to have no impact on the introduction or spreading of INNS, with reduced abstraction requirements leaving more water in river systems.	None	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	High	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium	An Ordinary Drought Order will provide water savings which will contribute towards improving the security of supply of water in the United Utilities' supply region. Drinking water quality will not be affected by the restrictions. Temporary restrictions on non-essential water uses may reduce personal or community activities and may have a short-term impact on the standard of living.	Minor adverse	Moderate beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Medium	Medium	Short-term	Temporary	Medium (adverse) Low (beneficial)	Low	There may be potential for moderate adverse impacts upon recreational opportunity due to any restrictions on filling of non-domestic swimming pools and on water use in commercial premises, gardens and allotments etc. Negligible beneficial effects include the potential for maintaining flow levels in watercourses to support recreational activities.	Moderate adverse	Negligible beneficial
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Large	Medium	Short-term	Temporary	High (adverse) Medium (beneficial)	Medium	The action carries the risk of adverse economic impact on businesses that benefit directly or indirectly from water usage (e.g. window cleaning businesses, car washes, sports and leisure facilities including swimming pools, garden and landscape orientated businesses). Potential mitigation could involve publicity and consultation with the affected businesses in the run up to and during the drought. Beneficial impacts include the potential to maintain flow levels in watercourses and safeguard water supplies for critical needs, thereby supporting essential services during drought and contributing to economic sustainability.	Major adverse	Negligible beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Low	An Ordinary Drought Order will reduce the demand for water in the region. It will not result in any increase in the generation of waste.	None	Moderate beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium	An Ordinary Drought Order will ensure water is used for essential purposes only, enhancing the sustainable and efficient use of water resources. Impacts have been summarised as moderate beneficial and temporary (i.e., while the restrictions are in place).	None	Moderate beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	This action will not directly result in, or modify any abstraction (surface water or groundwater). Reduction in demand for water will result in reduced requirement for abstraction at source. Overall impacts have been assessed as minor beneficial.	None	Minor beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Reductions in demand for water would result in a reduced requirement for abstraction at source, reducing the risk of associated impacts on surface water quality in drought conditions, maintaining the natural dilution capacity in surface waters and aquifer integrity.	None	Minor beneficial
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	This action will not directly result in, or modify any abstraction (surface water or groundwater). Reduction in demand for water will result in reduced requirement for abstraction at source. Overall impacts have been assessed as minor beneficial.	None	Minor beneficial
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium	This action will have a moderate beneficial impact on water, acknowledging that reduced consumer demand for water will result in reduced requirement for abstraction at source.	None	Moderate beneficial
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on soils, geology and land use are anticipated as a result of this drought action.	None	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on catchment land management are anticipated as a result of this drought action.	None	None
Air and climate	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on air quality are anticipated as a result of this drought action.	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	This action would lead to reduced water use at household level, resulting in less energy required for water treatment and pumping and associated emissions.	None	Minor beneficial
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium	Demand measures are a key component of United Utilities' Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a moderate beneficial impact on adaptation to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	The ban is considered unlikely to have any direct impact on the historic environment, heritage assets and archaeologically important sites.	None	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	N/A	N/A	N/A	N/A	N/A	N/A	The ban is considered to have no direct impact on landscape and visual amenity or any changes to access to the countryside or open space.	None	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Reduction in water use (Material Assets and Resource Use) has the potential to positively affect other topics including Biodiversity, Flora and Fauna, and Water due to reduced requirement for abstraction at source. This impact has been summarised as minor beneficial.	None	Minor beneficial

Drought Plan Option Name: Pressure Management

Drought Plan Option Description: At drought levels 1, 2 and 3 United Utilities would consider reducing the pressure in certain parts of the water network, to help reduce demand. It is anticipated pressure reduction at level 1 will give savings of up to 4.8 Ml/d, level 2 up to 12.6 Ml/d and Level 3 up to 35.15 Ml/d. This corresponds to increased targeting of pressure reduction as a drought progresses. Pressure reduction in 2018 was predicted to provide 8 Ml/d benefit.

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Low	There are no construction activities associated with this drought action. Reducing the pressure in certain parts of the water network, to help reduce demand is considered to have no impact on biodiversity, flora or fauna, other than to acknowledge that reduced consumer demand for water will result in reduced requirement for abstraction at source (and therefore, potential for minor beneficial impacts on flow sensitive habitats/species).	None	Negligible beneficial
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	No construction associated with pressure management. This action will reduce demand on certain parts of the water network. A reduced requirement for abstraction at source may have beneficial impacts on flow sensitive habitats and species, supporting ecosystem services. There is no scope to provide Biodiversity Net Gain	None	Negligible beneficial
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Pressure Management is considered to have no impact on the introduction or spreading of INNS.	None	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium	Pressure management will result in annual water savings for level 1 of up to 4.8 Ml/d, level 2 up to 12.6 Ml/d and Level 3 up to 35.15 Ml/d per year, which will contribute towards improving the security of supply of water in United Utilities' supply region. The impact of this action has been summarised as moderate beneficial and temporary, taking into account the potential for reduced water consumption. Reduced pressure may have adverse impacts on activities that promote health and wellbeing e.g. filling of swimming pools, however these are assessed as negligible.	Negligible adverse	Moderate beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	Low	Short-term	Temporary	Low (adverse)	Low	Reduced pressure may have adverse impacts on water dependant recreational activities due to delays e.g. filling swimming pools and ponds, however these are assessed as negligible.	Negligible adverse	None
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Large	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium	Pressure management will result in annual water savings for level 1 of up to 4.8 Ml/d, level 2 up to 12.6 Ml/d and Level 3 up to 35.15 Ml/d per year, which will contribute towards improving the security of supply of water in United Utilities' supply region. Reduced pressure may have minor adverse impacts on water dependant businesses due to delays in providing services which rely on specific volumes or pressure of water e.g. non-domestic swimming pools, car/window washing businesses.	Minor adverse	Moderate beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium	Reducing the pressure in certain parts of the water network, to help reduce demand will not involve any increased material resource use. This action will result in annual water savings for level 1 of up to 4.8 Ml/d, level 2 up to 12.6 Ml/d and Level 3 up to 35.15 Ml/d per year. The impact of this action has been summarised as moderate and temporary, taking into account the potential for reduced water consumption.	None	Moderate beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium	Through concentrating on areas that would provide the biggest demand saving benefits and where there is a low risk of impacting customers and businesses, the risk to disruption to service levels would be minimised. This action will result in annual water savings for level 1 of up to 4.8 Ml/d, level 2 up to 12.6 Ml/d and Level 3 up to 35.15 Ml/d per year. Impacts have been summarised as moderate beneficial and temporary.	None	Moderate beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	This action will have a minor beneficial impact on surface and groundwater levels and flows, acknowledging that reduced consumer demand for water will result in reduced requirement for abstraction at source, by up to 4.8 Ml/d for level 1, level 2 up to 12.6 Ml/d and Level 3 up to 35.15 Ml/d Ml/d per year.	None	Minor beneficial
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	Reductions in demand for water would result in a reduced requirement for abstraction at source, reducing the risk of associated impacts on surface water quality in drought conditions, maintaining the natural dilution capacity in surface waters and aquifer integrity.	None	Minor beneficial
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Large	Medium	Short-term	Temporary	Medium (beneficial)	Medium	This action will have a moderate beneficial impact on maintaining water supplies, acknowledging that reduced consumer demand for water will result in reduced requirement for abstraction at source, by up to 4.8 Ml/d for level 1, level 2 up to 12.6 Ml/d and Level 3 up to 35.15 Ml/d per year.	None	Moderate beneficial
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	Pressure reduction doesn't change user behaviour or appliance efficiency; it mainly influences flow and leakage. Therefore, no impacts on promoting measures to enable and sustain long term improvement in water efficiency are anticipated.	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land	N/A	N/A	N/A	N/A	N/A	N/A	No impacts of pressure management on soil, geology and land use are anticipated.	None	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts of pressure management on catchment land management are anticipated.	None	None
Air and climate	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The option will not involve any increased resource use, or increased CO2 emissions. No impacts of pressure management on air and climate are anticipated.	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium	Reducing pressure means pumps work less hard, which decreases electricity consumption. Since electricity generation often involves fossil fuels, this translates to lower GHG emissions. Less water lost means less energy needed for treatment and distribution, reducing emissions associated with water production.	None	Moderate beneficial
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium	Demand measures are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a moderate beneficial impact on adaptation to climate change. Pressure optimisation is a scalable adaptive action that will build resilience in United Utilities' supply systems.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There is the potential for reduced consumer demand for water to result in reduced requirement for abstraction at source, potentially reducing impacts on water-dependent archaeology and cultural heritage assets.	None	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	N/A	N/A	N/A	N/A	N/A	N/A	Pressure management is considered to have no impact on landscape and visual amenity.	None	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Large	Medium	Long-term	Permanent	Medium (beneficial)	Medium	Reduction in water lost (Material Assets and Resource Use) has the potential to positively affect other topics including Biodiversity, Flora and Fauna and Water due to reduced requirement for abstraction at source. This impact has been summarised as moderate beneficial.	None	Minor beneficial

Plan Option Name: **Delph Reservoir**
Option Description: **Reduce compensation flow from 3.7 to 1.0 Ml/d.**

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Moderate	Short-term	Temporary	Low (adverse)	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Delph and included an assessment of impacts of the drought option on biodiversity. The option would reduce compensation flows from Delph Reservoir, resulting in reduced flows in Delph and Eagley Brook and downstream watercourses, retaining more water within the reservoir system. Impacts on brown trout spawning and incubation were assessed as moderate should the drought permit coincide with spawning (October-December) and egg incubation (January-March) periods. Impacts on river fish populations (brown trout, bullhead, coarse fish, rheophilic fish), macroinvertebrates and riverine macrophytes and diatoms were assessed as negligible but categorised as minor adverse (in the absence of a negligible rating). Impacts on all other ecological receptors (otters, water voles, great crested newts, wading birds, wildfowl and gulls, riverine birds) and habitats were assessed as negligible (bit categorised as minor). There are several designated sites within the study area, including one SSSI within the vicinity of Delph Reservoir and Brook, the West Pennine Moors SSSI. Several more SSSIs are in proximity to the study area, including The Tonge River Section, Nob End, Gale Clough & Shooterslee Wood, Longworth Clough and Oakfield SSSIs. However, these sites are anticipated to show low sensitivity to the predicted changes in the physical environment relative to the baseline scenario. Given the lack of potential impacts of the proposed drought permit on the identified designated sites, and the transitory nature of predicted changes in water level, velocity, depth and wetted width/perimeter, the potential impact is expected to be Minor for designated sites. Overall, impacts on biodiversity are assessed as minor adverse and temporary.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	High	Short-term	Temporary	Low (adverse)	Medium	As the option does not involve any construction works, no physical habitat loss or disturbance is expected, and therefore no compensatory planting or habitat enhancement is applicable. The Biodiversity Net Gain (BNG) policy does not apply to projects where no groundworks, site clearance, or construction footprint will occur, and where there is no physical intervention that could impact existing habitats. The proposed drought permit would retain more water within Delph Reservoir, which would reduce the drawdown rate during drought conditions. Following drought, the reduced drawdown level would also expedite a return to typical reservoir levels and downstream flows, benefiting both reservoir and in-stream environments. The EAR identifies medium to negligible impacts to in-stream habitats across all reaches. Implementation of the EMP during permit implementation would aid in reducing the significance of effects.	Minor adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Small	Moderate	Long-term	Temporary	Low (adverse)	Low	The environmental assessment considered likely impacts on INNS. Impacts towards the risk of further spreading Himalayan balsam, giant hogweed, Rhododendron and the common carp were assessed. The reduction to the compensation flow proposed by this drought permit, is expected to reduce the capacity for INNS to spread from the reservoir. Due to the low sensitivity of these species, reductions in water levels and flow velocities are considered to be of negligible significance. Therefore negligible impacts on the potential spread of INNS are anticipated.	Negligible adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Medium	High	Long-term	Temporary	Low (beneficial)	Medium	The reduction in compensation flow under drought powers would enable the continued supply of water and maintain compensation releases if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. No third-party abstractors have been identified in the study area that would be at risk from implementation of the drought permit. Overall, the impacts on population and human health have been assessed as minor beneficial, based on minor beneficial impacts on security of water supply.	None	Minor beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	Moderate	Long-term	Temporary	Low (adverse) Low (beneficial)	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Delph and included an assessment of impacts of the drought option on recreation including angling. The EAR indicates that beneficial impacts would occur at Delph reservoir due to more water being retained in the reservoir, supporting recreational activities e.g. sailing, walking, angling. Angling interest is limited in the upper reaches (e.g. Delph Brook and Eagley Brook) due to their small size with greater interest in downstream reaches (e.g. River Tonge and Croal). Given the minor to medium impacts on fish species, impacts on angling were assessed as minor adverse. Overall, the drought permit will have a minor beneficial and minor adverse impact on tourism/recreation.	Minor adverse	Minor beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	High	Long-term	Temporary	Low (beneficial)	Medium	The reduction in compensation flow under drought powers would enable the continued supply of water and maintain compensation releases if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. An Environmental Report has been prepared for drought contingency planning for the drought option at Delph. The report concluded negligible adverse socio-economic impacts. Overall, the impacts on population and human health have been assessed as beneficial, based on minor beneficial impacts on security of water supply.	None	Minor beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Moderate	Long-term	Temporary	Low (beneficial)	Low	No operational impacts on material assets and resource use are anticipated. The option involves modifications to compensation flow only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	High	Long-term	Temporary	Low (beneficial)	Low	No operational impacts on material assets and resource use are anticipated. The option involve modifications to compensation flow only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Moderate	Long-term	Temporary	Low (adverse)	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Delph and included an assessment of impacts of the drought option on hydrology. The report concluded negligible impacts on reservoir level and medium to negligible changes in river flows, with the greatest impacts in the upper reaches of Delph and Eagley brooks. Overall, given the small scale of the reduction in compensation flow, the impacts on water have been assessed as minor adverse and temporary.	Minor adverse	None
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	High	Long-term	Temporary	Low (adverse)	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Delph and included an assessment of impacts of the drought option on water quality. Water quality impacts of the drought option on the Eagley Brook (which receives compensation flow from Delph Reservoir) were assessed as negligible, whereas low magnitude and short-term impacts were concluded towards the Tonge Brook and Croal Brook. Impacts on the reservoir were assessed as negligible. Overall, the impacts on water have been assessed as minor adverse and temporary.	Minor adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	High	Long-term	Temporary	Low (adverse)	Low	The drought permit will likely have some minor, but temporary adverse impact on water dependent ecosystems in the affected reaches. There are no third party abstractors in the zone of influence of the drought permit (downstream of the Delph compensation release point).	Negligible adverse	None
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	High	Long-term	Temporary	Low (adverse)	Medium	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Delph, and included an assessment of impacts of the drought option on fluvial geomorphology which concluded negligible to low magnitude impacts due to the effects of changes in sedimentation and reductions in depth wetted perimeter and mean velocity on habitat and geomorphology which may be expected. Overall, minor adverse effects are anticipated.	Minor adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Delph Reservoir. No impacts on land, soils and geology are anticipated.	None	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	No operational impacts on air quality are anticipated. Option involves modifications to compensation flow only and no changes to energy use, and therefore greenhouse gas emissions, are envisaged.	None	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	Moderate	Short-term	Temporary	Low (beneficial)	Medium	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Medium	High	Long-term	Temporary	Low (adverse)	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Delph and included an assessment of impacts of the drought option on archaeology and cultural heritage. There are several listed buildings in the study area and one Scheduled Monument in proximity to the option (1km). No records were found to indicate that anaerobic / organic remains are located adjacent to the watercourses. In addition there may be unknown water dependent heritage assets, however in the context of natural drought baseline conditions, they are unlikely to be impacted over the duration of the drought permit implementation. A total of nine listed buildings were identified, but only three of these (former mills) occur immediately adjacent to the channels. Heritage features adjacent to the study area are unlikely to be impacted by reductions in flow rate, velocity or wetted perimeter as no pathway for impact has been identified. Overall, the report concluded impacts on archaeology were predicted to be negligible.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	High	Long-term	Temporary	Low (adverse) Low (beneficial)	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Delph and included an assessment of impacts of the drought option on landscape and visual amenity. The option is not within any designated landscape areas. The proposed Delph drought permit will result in more water being retained in Delph Reservoir, which would be expected to have a minor beneficial impact on aesthetics/landscape. The character of the landscape in the downstream reaches may be slightly impacted by a reduction in flows and wetted perimeter. Given that the sensitivity of the landscape is considered to be low, it is anticipated that the proposed drought permit will have an overall negligible adverse effect on the study area.	Negligible adverse	Minor beneficial
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Long-term	Temporary	Low (adverse)	Medium	Key inter-relationships include minor adverse impacts of hydrodynamics and water quality on biodiversity (fish and macrophyte populations).	Minor adverse	None

Drought Plan Option Name: Dovestone Reservoir

Drought Plan Option Description:

This option proposes reducing the compensation flow from Dovestone Reservoir to Chew Brook from 15.9 Ml/d to 10 Ml/d for a six-month period during an exceptional shortage of rainfall. The reduction would help retain more water in the reservoir system, slowing drawdown and delaying the point at which compensation flows cannot be maintained. This measure supports continued public water supply within the Strategic Resource Zone and expedites recovery of reservoir levels post-drought. Environmental impacts, including reduced river flows and potential effects on water quality and ecology, would be assessed in detail as part of the permit application.

There is no construction phase associated with this drought permit. The option involves modifying the abstraction regime by reducing the compensation flow and assumes use of existing abstraction points and treatment facilities. If any monitoring equipment or temporary pumps are required, these would have a small, temporary footprint.

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	An Environmental Assessment Report (EAR) has been prepared for drought contingency planning for the drought option at Dovestone and included an assessment of impacts of the drought option on biodiversity. Reduced flows during drought conditions may moderately affect aquatic habitats, primarily through exposure of channel margins and bed features, resulting in a reduction in wetted habitat availability. The EAR concluded that there are no designated sites within the affected water bodies that would experience significant impacts from the proposed drought permit. Any potential effects are considered negligible due to the short-term nature of the flow reduction and the resilience of the habitats involved. The assessment identified moderate adverse impacts on brown trout spawning and bullhead egg incubation if the drought permit is implemented during key periods (October–February for trout, March–June for bullhead). All other fish species and life stages are predicted to experience minor, short-lived impacts. Effects on macrophytes, phytobenthos, macroinvertebrates, and other ecological receptors (including otter, water vole, amphibians, birds, and great crested newts) are assessed as negligible to minor. Overall, the impact of the drought option is considered minor adverse and temporary.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	As the option does not involve any construction works, no physical habitat loss or disturbance is expected, and therefore no compensatory planting or habitat enhancement is applicable. The proposed drought permit is predicted to reduce water depth and flow velocity primarily in the Chew Brook, with impacts diminishing downstream due to natural flow accretion from the River Tame and its tributaries. Hydromorphological impacts are assessed as Medium magnitude in the Chew Brook, reducing to Low magnitude beyond the Tame confluence. Seasonal variation in effects is expected to be minimal, as the relative contribution of the flow reduction remains consistent throughout the year. Implementation of the EMP during permit implementation would aid in reducing the significance of effects.	Minor adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Medium	High	Short-term	Temporary	Low (adverse)	Medium	The EAR considered likely impacts on invasive non-native species (INNS). While reduced flows could limit downstream dispersal of some species and slightly increase upstream migration potential for motile species such as signal crayfish, overall effects are predicted to be minor and variable. A temporary increase in habitat for riparian INNS may occur due to lower water levels, but no species is expected to experience more than a minor beneficial change in fitness. Large-scale cascading impacts on native flora and fauna are considered unlikely, and conditions are expected to return to baseline post-implementation. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	Minor adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium	If any monitoring equipment or temporary pumps are required, these would entail limited works. The reduction in compensation flow under drought powers would enable the continued supply of water (up to 5.9 Ml/d in additional deployable output, subject to operational constraints and system requirements) and maintain compensation releases if dry weather persists. Without these powers during a severe drought, there would be an increasing risk of supply deficit, placing public water supplies at an unacceptable risk. Overall, the impacts on population and human health have been assessed as moderate beneficial due to the continued provision of drinking water.	None	Moderate beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	If any monitoring equipment or temporary pumps are required, these would have limited impacts on disturbance or accessibility. The EAR considered likely impacts on recreation, including angling and water-based activities. The proposed drought permit would slow reservoir drawdown, potentially offering a minor benefit for sailing; however, as implementation would occur during drought when levels are already low, overall effects are predicted to be negligible. Impacts on angling and river-based recreation, including canoeing on the River Tame, are also assessed as negligible.	Negligible adverse	Negligible beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium	If any monitoring equipment or temporary pumps are required, these would have limited impacts on disturbance or accessibility. The proposed drought permit would help secure water supplies for East Manchester, Tameside, Glossop, Stockport, and Oldham, supporting essential services and the wider regional economy. By reducing compensation flow, the permit could provide up to 5.9 Ml/d in additional deployable output, subject to operational constraints, ensuring continued drinking water supply and avoiding more severe drought measures. No significant adverse socio-economic impacts are anticipated, and the benefits of maintaining reliable water resources are considered moderate beneficial for population, human health, and economic resilience.	None	Moderate beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	High	Short-term	Temporary	Low (beneficial)	Low	If any monitoring equipment or temporary pumps are required, these would require limited resources and generate limited waste. No operational impacts on material assets and resource use are anticipated. The option involve modifications to compensation flow only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote the sustainable management of natural resources have been identified for this option. The drought option prioritises short term supply over long-term natural capital maintenance (via compensation flows) reducing available water downstream however this would be a temporary effect. The option utilises existing assets.	None	None
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	The proposed drought permit is predicted to have a low beneficial impact on Dovestone Reservoir by slowing drawdown and maintaining higher water levels. Downstream, hydrological impacts are assessed as medium magnitude on the Chew Brook, reducing to low magnitude on the River Tame (Chew Brook to Swineshaw Brook) and negligible further downstream on the Tame (Swineshaw Brook to Mersey) and River Mersey. Seasonal variation in effects is expected to be minimal. Overall, impacts on surface water flows are considered minor adverse and temporary, with no significant effect on groundwater.	Minor adverse	Minor beneficial
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	The proposed drought permit is predicted to cause only small, temporary changes to water quality. Impacts include minor increases in ammonia, biochemical oxygen demand (BOD), nitrate, and phosphate concentrations at some sites, with occasional short-term WFD status changes (e.g., phosphate from High to Good, ammonia approaching thresholds). Dissolved oxygen may decrease slightly in low-velocity areas, but not to harmful levels. Continuous monitoring of DO, ammonia, and pH is recommended as a precaution. Overall there is a minor adverse effect on water quality as a result of the drought option.	Minor adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Low	The proposed drought permit would enable appropriate and sustainable management of abstractions by reducing compensation flow to maintain water supplies during drought while continuing to release flows to protect downstream ecosystems. The EAR concluded that impacts on WFD status, future objectives, and supporting elements are negligible, with only temporary, minor changes predicted for water quality and hydrology. Overall, the drought permit supports the achievement of WFD compliance objectives while safeguarding essential water resources.	Negligible adverse	Minor beneficial
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	This option is aimed at resilience and security of supply, and will not contribute to the long-term improvement in water efficiency.	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	There would be no land use changes associated with this option and no impacts on soil or geology are anticipated. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme take place on previously developed land which supports efficient use of land. The EAR included an assessment of impacts of the drought option on fluvial geomorphology which identified that reductions in flow under the drought permit are predicted to cause modest reductions in wetted habitat space with potential for marginal exposure towards the riverbank at riffle locations. The report concluded negligible to medium magnitude impacts on receiving watercourses downstream of the reservoir, and no notable effects on geomorphology were modelled.	Negligible adverse	Negligible beneficial
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	Medium	N/A	N/A	N/A	N/A	N/A	This option is a technical supply-side measure, not a land management strategy. There would be no construction or land use changes associated with this option, and works are within the existing United Utilities site.	None	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	No operational impacts on air quality are anticipated. The option involves modifications to compensation flow only and no changes to energy use.	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	No operational impacts on greenhouse gas emissions are anticipated as the option involves modifications to compensation flow only and no changes to energy use.	None	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	The assessment found no definitive pathways for impact on archaeological or cultural heritage features from the proposed drought permit. While listed buildings and one scheduled monument occur within the study area, none are expected to be affected by changes in flow or water levels.	None	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	The proposed drought permit is expected to have negligible effects on landscape character and visual amenity. By slowing reservoir drawdown, the permit would help retain water levels during drought, offering a minor aesthetic benefit. Any reduction in wetted perimeter along rivers is predicted to be insignificant, and overall changes to landscape character are considered minimal. In-combination scenarios with other drought permits would not alter this conclusion. Overall, impacts are assessed as minor and temporary, with a medium confidence level.	Minor adverse	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	Key inter-relationships include minor adverse impacts of hydrodynamics and water quality on biodiversity (macrophyte populations and in-river habitats).	Minor adverse	None

Drought Plan Option Name: Dovestone Reservoir

Drought Plan Option Description: This option (drought option 2) involves a more significant reduction of the compensation flow from 15.9 Ml/d to 5 Ml/d for six months under severe drought conditions. It would maximize water retention in the reservoir, providing greater resilience for public supply and further delaying reservoir depletion. While this option offers the highest benefit for water resource security, it carries increased risk of environmental impacts, such as lower river flows, potential deterioration of water quality, and ecological stress. These impacts would be addressed through mitigation measures and detailed environmental assessment during the application process.

There is no construction phase associated with this drought permit. The option involves modifying the abstraction regime by reducing the compensation flow and assumes use of existing abstraction points and treatment facilities. If any monitoring equipment or temporary pumps are required, these would have a small, temporary footprint.

SEA topics and objectives		Assessment of option								
Topic	Objective	Scale of effect: geographical &/ or population affected (small/medium/large)	Certainty of effect (low/ medium/ high)	Short-term/ medium-term/ long-term	Permanence of effect (permanent/ temporary)	Magnitude of effect (low/ medium/ high)	Value/ sensitivity of receptor (low/ medium/ high)	Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary	Residual adverse effect significance (likely to remain after reasonable mitigation)	Residual beneficial effect significance (likely to remain after reasonable mitigation)
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	An Environmental Assessment Report (EAR) has been prepared for drought contingency planning for the drought option at Dovestone and included an assessment of impacts of the drought option on biodiversity. Reduced flows during drought conditions may moderately affect aquatic habitats, primarily through exposure of channel margins and bed features, resulting in a reduction in wetted habitat availability. The EAR concluded that there are no designated sites within the affected water bodies that would experience significant impacts from the proposed drought permit. Any potential effects are considered negligible due to the short-term nature of the flow reduction and the resilience of the habitats involved. The assessment identified moderate adverse impacts on brown trout spawning and bullhead egg incubation if the drought permit is implemented during key periods (October–December for trout, March–May for bullhead). All other fish species and life stages are predicted to experience minor, short-lived impacts. Effects on macrophytes, phytobenthos, macroinvertebrates, and other ecological receptors (including otter, water vole, amphibians, birds, and great crested newts) are assessed as negligible to minor. Overall, the impact of the drought option is considered minor adverse and temporary.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	As the option does not involve any construction works, no physical habitat loss or disturbance is expected, and therefore no compensatory planting or habitat enhancement is applicable. The proposed drought permit is expected to reduce water depth and flow velocity mainly in the Chew Brook, with impacts lessening downstream due to natural flow accretion from the River Tame and its tributaries. Hydromorphological impacts are assessed as Medium magnitude in the Chew Brook, reducing to Low magnitude beyond the Tame confluence. Seasonal variation in effects is anticipated to be minimal, as the relative contribution of the flow reduction remains consistent throughout the year. Implementation of the EMP would mitigate these operational effects	Minor adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Medium	High	Short-term	Temporary	Low (adverse)	Medium	The EAR considered likely impacts on invasive non-native species (INNS). While reduced flows could limit downstream dispersal of some species and slightly increase upstream migration potential for motile species such as signal crayfish, overall effects are predicted to be minor and variable. A temporary increase in habitat for riparian INNS may occur due to lower water levels, but no species is expected to experience more than a minor beneficial change in fitness. Large-scale cascading impacts on native flora and fauna are considered unlikely, and conditions are expected to return to baseline post-implementation. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	Minor adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium	If any monitoring equipment or temporary pumps are required, these would entail limited works. The reduction in compensation flow under drought powers would enable the continued supply of water (up to 10.9 Ml/d in additional deployable output, subject to operational constraints and system requirements) and maintain compensation releases if dry weather persists. Without these powers during a severe drought, there would be an increasing risk of supply deficit, placing public water supplies at an unacceptable risk. Overall, the impacts on population and human health have been assessed as moderate beneficial due to the continued provision of drinking water.	None	Moderate beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	If any monitoring equipment or temporary pumps are required, these would have limited impacts on disturbance or accessibility. The EAR considered likely impacts on recreation, including angling and water-based activities. The proposed drought permit would slow reservoir drawdown, potentially offering a minor benefit for sailing; however, as implementation would occur during drought when levels are already low, overall effects are predicted to be negligible. Impacts on angling and river-based recreation, including canoeing on the River Tame, are also assessed as negligible.	Negligible adverse	Negligible beneficial
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium	If any monitoring equipment or temporary pumps are required, these would have limited impacts on disturbance or accessibility. The proposed drought permit would help secure water supplies for East Manchester, Tameside, Glossop, Stockport, and Oldham, supporting essential services and the wider regional economy. By reducing compensation flow, the permit could provide up to 10.9 Ml/d in additional deployable output, subject to operational constraints, ensuring continued drinking water supply and avoiding more severe drought measures. No significant adverse socio-economic impacts are anticipated, and the benefits of maintaining reliable water resources are considered moderate beneficial for population, human health, and economic resilience.	None	Moderate beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	High	Short-term	Temporary	Low (beneficial)	Low	If any monitoring equipment or temporary pumps are required, these would require limited resources and generate limited waste. No operational impacts on material assets and resource use are anticipated. The option involve modifications to compensation flow only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote the sustainable management of natural resources have been identified for this option. The drought option prioritises short term supply over long-term natural capital maintenance (via compensation flows) reducing available water downstream however this would be a temporary effect. The option utilises existing assets.	None	None
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	Similar to drought permit option 1, the drought permit would have a low beneficial impact on reservoir levels by reducing drawdown. Hydrological impacts downstream are medium magnitude on the Chew Brook, low magnitude on both sections of the River Tame, and negligible on the River Mersey. Seasonal variation remains minimal. Overall, impacts on surface water flows are assessed as minor adverse and temporary, with no significant groundwater effects.	Minor adverse	Minor beneficial
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	Water quality impacts under the 5 Ml/d reduction are predicted to be small and temporary, with slightly greater potential for localised changes. Minor increases in ammonia and biochemical oxygen demand (BOD) could lead to short-term WFD status changes at some sites, but overall compliance with key standards remains unaffected. Risks of hazardous substance changes are low, and any effects on aquatic life are expected to be minimal. Monitoring is recommended during implementation. Overall there is a minor adverse effect on water quality as a result of the drought option.	Minor adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Low	The proposed drought permit would enable appropriate and sustainable management of abstractions by reducing compensation flow to maintain water supplies during drought while continuing to release flows to protect downstream ecosystems. The EAR concluded that impacts on WFD status, future objectives, and supporting elements are negligible, with only temporary, minor changes predicted for water quality and hydrology. Overall, the drought permit supports the achievement of WFD compliance objectives while safeguarding essential water resources.	Negligible adverse	Minor beneficial
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	This option is aimed at resilience and security of supply, and will not contribute to the long-term improvement in water efficiency.	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	There would be no land use changes associated with this option and no impacts on soil or geology are anticipated. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme take place on previously developed land which supports efficient use of land. The EAR included an assessment of impacts of the drought option on fluvial geomorphology which identified that reductions in flow under the drought permit are predicted to cause modest reductions in wetted habitat space with potential for marginal exposure towards the riverbank at riffle locations. The report concluded negligible to medium magnitude impacts on receiving watercourses downstream of the reservoir, and no notable effects on geomorphology were modelled.	Negligible adverse	Negligible beneficial
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	This option is a technical supply-side measure, not a land management strategy. There would be no construction or land use changes associated with this option, and works are within the existing United Utilities site.	None	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	No operational impacts on air quality are anticipated. The option involves modifications to compensation flow only and no changes to energy use.	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	No operational impacts on greenhouse gas emissions are anticipated as the option involves modifications to compensation flow only and no changes to energy use.	None	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	The assessment found no definitive pathways for impact on archaeological or cultural heritage features from the proposed drought permit. While listed buildings and one scheduled monument occur within the study area, none are expected to be affected by changes in flow or water levels.	None	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	The proposed drought permit is expected to have negligible effects on landscape character and visual amenity. By slowing reservoir drawdown, the permit would help retain water levels during drought, offering a minor aesthetic benefit. Any reduction in wetted perimeter along rivers is predicted to be insignificant, and overall changes to landscape character are considered minimal. In-combination scenarios with other drought permits would not alter this conclusion. Overall, impacts are assessed as minor and temporary, with a medium confidence level.	Minor adverse	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	Key inter-relationships include minor adverse impacts of hydrodynamics and water quality on biodiversity (macrophyte populations and in-river habitats).	Minor adverse	None

Drought Plan Option Name: Fernilee Reservoir
Drought Plan Option Description: Reduce compensation flow from 13.6 to 7.0 Ml/d.

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	High	Long-term	Temporary	Low	Medium	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** An Environmental Report has been prepared for drought contingency planning for the drought option at Fernilee and included an assessment of impacts of the drought option options on biodiversity. No impacts on South Pennine SAC, Peak District Moors (South Pennine Moors Phase 1) SPA, Goyt Valley SSSI and Todd brook Reservoir and Combs Reservoir SSSIs are anticipated. Several Local Nature Reserves (LNRs) are located within the River Goyt valley; two are on, or directly adjacent to, the impacted reaches: Goytside Meadows, Mousley Bottom LNR and Chadkirk Country Estate, Poise Brook and Mersey Vale Nature Park LNRs. Brookfield Pond Local Nature Reserve is also located close to the River Goyt; however the two are not hydrologically connected. It was considered unlikely that any of the flora and fauna supported by nature reserves located on, or directly adjacent to, the impacted reaches (The Goyt), would be directly impacted by changes in flow as a result of the drought permit and impacts are assessed as negligible. The report concluded moderate adverse impacts towards in-stream habitats for fish populations (brown trout (juvenile), bullhead and lamprey) and minor adverse impacts towards brown trout (spawning) and salmon upstream migration in the Goyt. Impacts on fish populations overall are reported as minor adverse, as these impacts are anticipated to be short-lived and the small reductions in wetted width and depth are considered unlikely to be of significance. Impacts towards other ecological receptors (otters, water vole, wading birds, wildfowl and gulls, riverine birds, great-crested newt, macrophytes and macroinvertebrates) were concluded as negligible.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.									
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Small	Moderate	Long-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** The environmental assessment considered likely impacts on INNS. Negligible impacts on the potential spread of INNS (including Himalayan balsam, giant hogweed, and Japanese knotweed) are anticipated.	Negligible adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Medium	Moderate	Long-term	Temporary	Low	Medium	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** The reduction in compensation flow under drought powers would enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. Overall, the impacts on population and human health have been assessed as minor beneficial based on continued supply of drinking water.	None	Minor beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	High	Short-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** An Environmental Report has been prepared for drought contingency planning for the drought options at Longdendale and included an assessment of impacts of the drought option on recreation, including walking and cycling around Fernilee Reservoir, which links to the adjacent Errwood Reservoir. The reservoir is not currently used for water sports; however, Errwood Sailing Club and Peak Paddlers operate from nearby Errwood Reservoir. The River Goyt is used for various recreational activities, including fishing, canoeing and kayaking. Overall, negligible effects are anticipated on recreation.	Negligible adverse	None
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	Moderate	Short-term	Temporary	Low	Medium	**Operation** Fernilee Reservoir provides drinking water for the Stockport area, significantly contributing to the provision of a safe and reliable water resource. The reduction in compensation flow under drought powers would enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. Overall, given the lack of significant negative socio-economic impacts on the regional community, and the benefits of reduced reservoir drawdown, impacts on population and human health have been assessed as minor beneficial.	None	Minor beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Moderate	Long-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** No operational impacts on material assets and resource use are anticipated. The option involve modifications to compensation flow only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	Moderate	Long-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** No operational impacts on material assets and resource use are anticipated. Option involves modifications to compensation flow only and no changes to energy use are envisaged.	Negligible adverse	Negligible beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	High	Short-term	Temporary	Low	Medium	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** An Environmental Report has been prepared for drought contingency planning for the drought option at Fernilee and included an assessment of impacts of the drought option options on hydrodynamics. Reduction in compensation flow to 7M/d was assessed as having a negligible impact on the water level and exposure of the Reservoir. Hydromorphological effects of the drought option on the River Mersey were considered. The drought option would cause limited reduction in depth and wetted width on the River Goyt, with effects being most noticeable upstream of the Randall Carr Brook confluence and less noticeable downstream of the Randall Carr Brook confluence. Minor adverse impacts are therefore anticipated towards the River Goyt. Overall, the impact on water has been summarised as minor adverse and temporary.	Minor adverse	None
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	High	Short-term	Temporary	Low	Medium	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** An Environmental Report has been prepared for drought contingency planning for the drought option at Fernilee and included an assessment of impacts of the drought option options on water quality. The drought option is likely to increase the concentrations of ammonia and/or orthophosphate downstream of the two STWs that operate downstream of the Reservoir. Elsewhere in the reach downstream of the Reservoir, the scale of the effect on water quality is expected to be small as there are no STWs for which dilution would be an issue. The impact of the drought option on the water quality of the River Goyt is considered to be short-term and of small scale and therefore of negligible magnitude. With mitigation, the impacts on riverine water quality are predicted to be negligible to minor adverse. Negligible impact on reservoir water quality are anticipated. Overall, the impact on water has been summarised as minor adverse and temporary.	Minor adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	High	Short-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** An Environmental Report has been prepared for drought contingency planning for the drought option at Fernilee and included an assessment of impacts of the drought option options on water quality and implications for achievement of WFD compliance. There are no predicted changes to WFD status. The potential impacts of the proposed drought option on the four downstream abstractors were considered and negligible impacts were concluded. Overall, negligible impacts are anticipated.	Negligible adverse	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	High	Long-term	Temporary	Low	Medium	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Fernilee and included an assessment of impacts of the drought option options on fluvial geomorphology. The report concluded negligible to low magnitude of flow effects on sediment dynamics. Given the regional value of the geomorphology of the rivers, an overall minor impact on geomorphology is anticipated.	Minor adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Fernilee. No impacts on land, soils and geology are anticipated.	None	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** No operational impacts on air quality are anticipated, Option involves modifications to compensation flow only and no changes to energy use and, therefore, greenhouse gas emissions, are envisaged.	None	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	Moderate	Short-term	Temporary	Low	Medium	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Medium	High	Short-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** An Environmental Report has been prepared for drought contingency planning for the drought options at Fernilee and included an assessment of impacts of the drought option options on archaeology. The only scheduled monument identified was Marple aqueduct, which is located over the River Goyt. A total of 25 listed buildings were identified, but only nine of these (mainly aqueducts and bridges) occur immediately adjacent to the channels. No records were found to indicate that anaerobic / organic remains are located within or immediately adjacent to the watercourses. The heritage features identified as within or immediately adjacent to the rivers within the area of study (including Marple aqueduct) are unlikely to be directly impacted by any reduction in flow rate, velocity or wetted perimeter and the overall impact on archaeology is considered to be negligible.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	High	Short-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** An Environmental Report has been prepared for drought contingency planning for the drought options at Fernilee and included an assessment of impacts of the drought option options on landscape. The aesthetics and landscape of the watercourses and reservoir in the Fernilee study area can be considered to be of parish/neighbourhood value. Fernilee reservoir is within the Peak District National Park boundary. Given that the magnitude of the changes in wetted perimeter, are likely to be negligible, it is anticipated that the proposed drought options will have a negligible impact on the aesthetics and landscape of the study area.	Negligible adverse	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Long-term	Temporary	Low	Medium	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** Key inter-relationships include the minor adverse impact of riverine flow reduction on water quality, fish populations and fluvial geomorphology.	Minor adverse	Negligible beneficial

Drought Plan Option Name: Jumbles Reservoir
ught Plan Option Description: Reduce compensation flow from 19.9 Ml/d to 12 Ml/d.

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Moderate	Short-term	Temporary	Low	High	An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on biodiversity. There are several designated sites in the study area, including six LNRs, multiple LWS, and one SSSI (Nob End SSSI). The assessment concluded that the under the drought permit it is expected that the changes in physical environment will not be significantly different than the predicted water level under the normal baseline conditions. Therefore, it is considered that these changes will likely be within the tolerance of any flora and fauna present. Pre-mitigation impacts on fish range from minor to negligible due to potential impacts on spawning and egg incubation as a result of reduced habitat availability. Impacts on macroinvertebrates, macrophytes and phytobenthos were assessed as minor adverse. Impacts on other protected species (e.g. otters, water voles, great crested newts, wading birds, wildfowl and gulls, riverine birds) were assessed as negligible. Implementation of the EMP has the potential to reduce the significance of overall effects on ecological receptors. The overall impact has been assessed as minor adverse and temporary.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Moderate	Short-term	Temporary	Low	Low	Additional hydrological pressures are anticipated as a result of the reduction of compensation flow from 19.0Ml/d to 12Ml/d. Impacts of the reduction in compensation flow are at their greatest on Bradshaw Brook (a Medium magnitude of impact), becoming progressively less downstream of the confluence with the River Tonge and becoming Negligible downstream of the confluence with the River Irwell. Impacts would manifest as a contraction in wetted area and, consequently, aquatic habitat availability. The Biodiversity Net Gain (BNG) policy does not apply to projects where no groundworks, site clearance, or construction footprint will occur, and where there is no physical intervention that could impact existing habitats.	Negligible adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Small	Moderate	Short-term	Temporary	Low	Medium	The environmental assessment considered likely impacts on INNS in the study area (e.g. Himalayan balsam, giant hogweed, rhododendron, yellow archangel, common carp). The reduction in compensation flow from the reservoir is expected to reduce the capacity for INNS to spread from the reservoir. Reduction in downstream river flow may influence the ability for INNS for disperse upstream and/or upstream. Reduction in downstream wetted width area may influence density of INNS and suitable habitat for colonisation. Overall, minor adverse impacts on the potential spread of INNS are anticipated.	Minor adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low	High	Jumbles Reservoir is used as a compensation release reservoir only (no water is abstracted from Jumbles reservoir for public supply). The function of the drought option at Jumbles would be to conserve storage in the reservoir, thereby reducing the transfer of water needed from Wayoh and Entwistle reservoirs to Jumbles and maintaining water in those reservoirs for abstraction and public water supply. An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles. Impacts were assessed as negligible. Overall, the impacts on population and human health have been assessed as minor beneficial, based on minor beneficial impacts on security of water supply.	None	Minor beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	High	Short-term	Temporary	Low	Medium	Jumbles Reservoir is used as a compensation release reservoir only (no water is abstracted from Jumbles reservoir for public supply). The function of the drought option at Jumbles would be to conserve storage in the reservoir, thereby reducing the transfer of water needed from Wayoh and Entwistle reservoirs to Jumbles and maintaining water in those reservoirs for abstraction and public water supply. An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on recreation including angling. Minor beneficial impacts were assessed due to the drought option resulting in more water being retained in Jumbles Reservoir, which would be expected to have a positive impact on tourism and recreational activities, e.g. sailing. Negligible impacts are expected towards angling groups.	Negligible adverse	Minor beneficial
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	High	Short-term	Temporary	Low	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles. The report identified that third-party surface water abstractions are not currently known to be present within the study area. Impacts were assessed as negligible. The reduction of compenstaion flow would enable to continued public supply of water during extended dry weather. Impacts on population and human health have been assessed as minor beneficial, based on minor beneficial impacts on security of water supply.	Negligible adverse	Minor beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Moderate	Short-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. The option involve modifications to compensation flow only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	Moderate	Short-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. The option involves modifications to compensation flow only and no changes to energy use are envisaged.	None	Negligible beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Moderate	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on hydrodynamics. The proposed drought permit will slow the rate of reservoir drawdown in Jumbles Reservoir and is predicted to have a negligible beneficial effect on reservoir water level and exposure. Hydrological impacts of the drought permit lessen with increasing distance from the compensation release to the downstream water bodies, varying from medium to negligible magnitude.	Minor adverse	Negligible beneficial
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	Moderate	Short-term	Temporary	Low	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on water quality. The impact assessment concluded that the magnitude of predicted changes on water quality would be small and temporary. The EAR concluded that the drought permit may result in: a temporary, small increases in total ammonia and nitrate concentrations, but no change in WFD status; a temporary decrease in dissolved oxygen concentration, but with no impact on aquatic life; and a temporary increase in BOD at the River Croal and phosphate concentration at Bradshaw Brook, with WFD status change from High to Good and Good to Moderate, respectively. No other failures of intermittent standards are anticipated. Overall, the potential impacts on water quality are considered negligible.	Negligible adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	High	Short-term	Temporary	Low	Low	An Environmental Assessment Report has been prepared for drought contingency planning for the drought option and included an assessment of impacts on WFD deterioration. The report concluded negligible impacts on the current WFD status, future WFD objectives and supporting element status of all waterbodies.	Negligible adverse	None
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	Low	Short-term	Temporary	Low	Medium	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on fluvial geomorphology. Negligible to low magnitude impacts were assessed towards impacted river water bodies due to changes in sedimentation and medium impacts towards in-stream habitats. As risk substantial sedimentation is low, minor adverse and temporary impacts are anticipated.	Minor adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles. No impacts on land, soils and geology are anticipated.	None	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Air and climate	6.2 Reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	No operational impacts on air quality are anticipated. The option involves modifications to compensation flow only and no changes to energy use, and therefore greenhouse gas emissions, are envisaged.	None	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	Moderate	Short-term	Temporary	Low	Low	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on archaeology and cultural heritage. There are no scheduled monuments located in the area and no records were found to indicate that anaerobic / organic remains are located adjacent to the watercourses. Several listed buildings were identified in the vicinity. The heritage features identified as occurring within or immediately adjacent to the rivers within the area of study are unlikely to be directly impacted by any reduction in flow rate, velocity or wetted perimeter. Features such as bridges have experienced a wide range of flows over time and are robust to these variations. As no pathway for impact has been identified, the sensitivity of this receptor is considered not sensitive as was not considered further for assessment.	None	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	An EAR has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on landscape and visual amenity. The option is not within any designated landscape. Minor beneficial impacts were assessed due to the drought option resulting in more water being retained in Jumbles Reservoir, which would be expected to have a positive impact on aesthetics. The drought option has potential to impact the aesthetic landscape value of the downstream water bodies. However, given the limited changes to the physical environment, low sensitivity of the landscape receptors and short-term nature of the drought permit, the overall effect is considered to be negligible adverse.	Negligible adverse	Minor beneficial
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Short-term	Temporary	Low	Medium	Key inter-relationships include minor adverse impacts of hydrodynamics and water quality on biodiversity (fish) and landscape.	Minor adverse	Negligible beneficial

Drought Plan Option Name: Jumbles Reservoir
Drought Plan Option Description: Reduce compensation flow from 19.9 Ml/d to 6 Ml/d

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	High	Short-term	Temporary	Medium	High	An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on biodiversity. There are several designated sites in the study area, including six LNRs, multiple LWS, and one SSSI (Nob End SSSI). The assessment concluded that the under the drought permit it is expected that the changes in physical environment will not be significantly different than the predicted water level under the normal baseline conditions. Therefore, it is considered that these changes will likely be within the tolerance of any flora and fauna present. Pre-mitigation impacts on fish range from moderate to negligible, with moderate impacts anticipated for juvenile brown trout and rheophilic coarse fish as a result of reduced habitat availability. Impacts on macroinvertebrates, macrophytes and phytobenthos were assessed as minor adverse. Impacts on other protected species (e.g. otters, water voles, great crested newts, wading birds, wildfowl and gulls, riverine birds) were assessed as negligible. Implementation of the EMP has the potential to reduce the significance of overall effects on ecological receptors. The overall impact has been assessed as moderate adverse and temporary.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Moderate	Short-term	Temporary	Low	Low	Additional hydrological pressures are anticipated as a result of the reduction of compensation flow from 19.0Ml/d to 6Ml/d. Impacts of the reduction in compensation flow are at their greatest on Bradshaw Brook (a Medium magnitude of impact), becoming progressively less downstream of the confluence with the River Tonge and becoming Negligible downstream of the confluence with the River Irwell. Impacts would manifest as a contraction in wetted area and, consequently, aquatic habitat availability. The Biodiversity Net Gain (BNG) policy does not apply to projects where no groundworks, site clearance, or construction footprint will occur, and where there is no physical intervention that could impact existing habitats.	Negligible adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Small	Moderate	Short-term	Temporary	Low	Medium	The environmental assessment considered likely impacts on INNS in the study area (e.g. Himalayan balsam, giant hogweed, rhododendron, yellow archangel, common carp). The reduction in compensation flow from the reservoir is expected to reduce the capacity of INNS to spread from the reservoir. Reduction in downstream river flow may influence the ability for INNS for disperse upstream and/or upstream. Reduction in downstream wetted width area may influence density of INNS and suitable habitat for colonisation. Overall, minor adverse impacts on the potential spread of INNS are anticipated.	Minor adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Medium	High	Jumbles Reservoir is used as a compensation release reservoir only (no water is abstracted from Jumbles reservoir for public supply). The function of the drought option at Jumbles would be to conserve storage in the reservoir, thereby reducing the transfer of water needed from Wayoh and Entwistle reservoirs to Jumbles and maintaining water in those reservoirs for abstraction and public water supply. An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles. Impacts were assessed as negligible. Overall, the impacts on population and human health have been assessed as minor beneficial, based on minor beneficial impacts on security of water supply.	None	Moderate beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	Jumbles Reservoir is used as a compensation release reservoir only (no water is abstracted from Jumbles reservoir for public supply). The function of the drought option at Jumbles would be to conserve storage in the reservoir, thereby reducing the transfer of water needed from Wayoh and Entwistle reservoirs to Jumbles and maintaining water in those reservoirs for abstraction and public water supply. An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on recreation including angling. Minor beneficial impacts were assessed due to the drought option resulting in more water being retained in Jumbles Reservoir, which would be expected to have a positive impact on tourism and recreational activities, e.g. sailing. Negligible impacts are expected towards angling groups.	Negligible adverse	Minor beneficial
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	High	Short-term	Temporary	Low (adverse) Medium (beneficial)	High	An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles. The report identified that third-party surface water abstractions are not currently known to be present within the study area. Impacts were assessed as negligible. The reduction of compensation flow would enable to continued public supply of water during extended dry weather. Impacts on population and human health have been assessed as moderate beneficial, based on moderate beneficial impacts on security of water supply.	Negligible adverse	Moderate beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Moderate	Short-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. The option involve modifications to compensation flow only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	Moderate	Short-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. The option involves modifications to compensation flow only and no changes to energy use are envisaged.	None	Negligible beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	High	Short-term	Temporary	Medium	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on hydrodynamics. The proposed drought permit will slow the rate of reservoir drawdown in Jumbles Reservoir and is predicted to have a negligible beneficial effect on reservoir water level and exposure. Hydrological impacts of the drought permit lessen with increasing distance from the compensation release to the downstream water bodies, with four water bodies assessed as medium magnitude and one as negligible.	Moderate adverse	None
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	Moderate	Short-term	Temporary	Low	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on water quality. The impact assessment concluded that the magnitude of predicted changes on water quality would be small and temporary. The EAR concluded that the drought permit may result in: a temporary, small increases in total ammonia and nitrate concentrations, but no change in WFD status; a temporary decrease in dissolved oxygen concentration, but with no impact on aquatic life; and a temporary increase in BOD at the River Croal and phosphate concentration at Bradshaw Brook, with WFD status change from High to Good and Good to Moderate, respectively. No other failures of intermittent standards are anticipated. Overall, the potential impacts on water quality are considered negligible.	Negligible adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	High	Short-term	Temporary	Low	Medium	An Environmental Assessment Report has been prepared for drought contingency planning for the drought option and included an assessment of impacts on WFD deterioration. The report concluded minor impacts on the current WFD status, future WFD objectives and supporting element status of all waterbodies.	Minor adverse	None
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	Low	Short-term	Temporary	Medium	Medium	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on fluvial geomorphology. Medium to negligible magnitude impacts were assessed towards impacted river water bodies due to changes in sedimentation and high to negligible impacts towards in-stream habitats. The greater flow reduction under a potential 6 Ml/d drought permit presents a greater risk of marginal exposure. As a result, moderate adverse and temporary impacts are anticipated.	Moderate adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles. No impacts on land, soils and geology are anticipated.	None	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Air and climate	6.2 Reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	No operational impacts on air quality are anticipated. The option involves modifications to compensation flow only and no changes to energy use, and therefore greenhouse gas emissions, are envisaged.	None	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Medium	High	Short-term	Temporary	Low	High	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Medium	High	Short-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on archaeology and cultural heritage. There are no scheduled monuments located in the area and no records were found to indicate that anaerobic / organic remains are located adjacent to the watercourses. Several listed buildings were identified in the vicinity. The heritage features identified as occurring within or immediately adjacent to the rivers within the area of study are unlikely to be directly impacted by any reduction in flow rate, velocity or wetted perimeter. Features such as bridges have experienced a wide range of flows over time and are robust to these variations. As no pathway for impact has been identified, the sensitivity of this receptor is considered not sensitive as was not considered further for assessment.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	An EAR has been prepared for drought contingency planning for the drought option at Jumbles and included an assessment of impacts of the drought option on landscape and visual amenity. The option is not within any designated landscape. Minor beneficial impacts were assessed due to the drought option resulting in more water being retained in Jumbles Reservoir, which would be expected to have a positive impact on aesthetics. The drought option has potential to impact the aesthetic landscape value of the downstream water bodies. However, given the limited changes to the physical environment, low sensitivity of the landscape receptors and short-term nature of the drought permit, the overall effect is considered to be negligible adverse.	Negligible adverse	Minor beneficial
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Short-term	Temporary	Low	Medium	Key inter-relationships include moderate adverse impacts of hydrodynamics and water quality on biodiversity (fish) and landscape.	Moderate adverse	Negligible beneficial

Drought Plan Option Name: Longdendale Reservoirs
Drought Plan Option Description: Reduce compensation flow from 45.5 to 15.0 Ml/d. There is no construction phase associated with this drought option as the option involves modifications to compensation flow only, the assessment considers operational impacts only.

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	High	Long-term	Temporary	Low	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on biodiversity. Overall, the impacts on brown trout, bullhead, brook lamprey and coarse fish were summarised as minor to moderate adverse. Impacts on a salmon (all life stages) are assessed as negligible all year round. Minor adverse impacts on macrophytes, phytobenthos and macroinvertebrates were also predicted. The impacts on other ecological receptors (otter, water vole, wading birds, wildfowl and gulls, riverine birds and great crested newts) were assessed as negligible. Impacts on designated sites, including Compstall Nature Reserve SSSI, are assessed as negligible.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	High	Short-term	Temporary	Low	Medium	The EAR for Longdendale revealed that impacts are considered minor to moderate for all receptors and moderate impact on hydrology. The Biodiversity Net Gain (BNG) policy does not apply to projects where no groundworks, site clearance, or construction footprint will occur, and where there is no physical intervention that could impact existing habitats. The option may result in lower water levels that could create new habitats for species. However, this would be temporary during drought conditions.	Negligible adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Small	Moderate	Long-term	Temporary	Low	Low	The environmental assessment considered likely impacts on INNS. The drought permit involves only a change to existing compensation release and does not involve intra or inter-catchment transfer and will not result in the introduction of new INNS. The drought permit implementation alone, and for all in-combination scenarios (with possible Fernilee and Dovestone drought permits) is considered likely to result in a negligible impact on the INNS communities of the affected reservoir and rivers. Negligible impacts on the potential spread of INNS are anticipated.	Negligible adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Medium	Moderate	Long-term	Temporary	Medium	High	The reduction in compensation flow under drought powers would enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. Overall, the impacts on population and human health have been assessed as major beneficial based on continued supply of drinking water.	None	Major beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	High	Long-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on recreation, including angling. The assessment concluded a minor negative impact predicted on the aesthetic value of the river channels.	Negligible adverse	None
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	Moderate	Long-term	Temporary	Medium	High	The reduction in compensation flow under drought powers would enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. Overall, the impacts on population and human health have been assessed as major beneficial based on continued supply of drinking water.	None	Major beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Moderate	Long-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. The option involve modifications to compensation flow only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	Moderate	Long-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. Option involves modifications to compensation flow only and no changes to energy use are envisaged.	None	Negligible beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	High	Long-term	Temporary	Medium	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on hydrodynamics. Reduction in compensation flow to 15M/d was assessed as having medium adverse impacts on riverine hydrodynamics. Negligible impact on reservoir hydrodynamics are anticipated. Overall, the impact on water has been summarised as moderate adverse and temporary.	Moderate adverse	None
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	High	Long-term	Temporary	Medium	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on water quality. With mitigation, the impacts on riverine water quality are predicted to be low to medium adverse. Overall, the impact on water quality has been summarised as minor adverse and temporary.	Minor adverse	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	Moderate	Long-term	Temporary	Medium	Low	The drought permit will likely have some minor, but temporary adverse impact on water dependent ecosystems in the affected reach. There are three abstractions in the zone of influence of the drought permit. The environmental assessment concluded that impacts on other abstractors are considered negligible.	Minor adverse	None
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	High	Long-term	Temporary	Low	Medium	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on fluvial geomorphology. The report concluded negligible to medium magnitude of flow effects on sediment dynamics. Given the regional value of the geomorphology of the rivers, an overall minor impact on geomorphology is anticipated.	Minor adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	Medium	N/A	N/A	N/A	N/A	N/A	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale. No impacts on land, soils and geology are anticipated.	None	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	Large	N/A	N/A	N/A	N/A	N/A	No operational impacts on air quality are anticipated. Option involves modifications to compensation flow only and no changes to energy use and, therefore, greenhouse gas emissions, are envisaged.	None	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Medium	High	Long-term	Temporary	Low	High	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Medium	High	Long-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on archaeology. The only scheduled monument identified was Marple aqueduct, which is located over the River Goyt. There were a number of listed buildings identified. No records were found to indicate that anaerobic / organic remains are located within or immediately adjacent to the watercourses. The heritage features identified as within or immediately adjacent to the rivers within the area of study (including Marple aqueduct) are unlikely to be directly impacted by any reduction in flow rate, velocity or wetted perimeter and the overall impact on archaeology is considered to be negligible.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	High	Long-term	Temporary	Low	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on landscape. The aesthetics and landscape of the watercourses and reservoir in the Longdendale study area can be considered to be of parish/neighbourhood value. Bottoms Reservoir (the lowest reservoir in the Longdendale reservoir chain from which the compensation flow to the River Etherow is released) is just within the Peak District National Park boundary. Given that the magnitude of the changes in wetted perimeter, are likely to be low, it is anticipated that the proposed drought option will have a minor adverse temporary impact on the aesthetics and landscape of the study area.	Minor adverse	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Long-term	Temporary	Low	Medium	Key inter-relationships include the minor adverse impact of riverine flow reduction on water quality, fish populations and landscape and visual amenity.	Minor adverse	Negligible beneficial

Drought Plan Option Name: River Lune LCUS abstraction
Drought Plan Option Description: Reduce prescribed flow from 365.0 to a minimum of 200 Ml/d. The drought permit could provide up to 27.4 Ml/d additional yielf over the course of a drought event. There is no construction phase associated with this drought option and all effects below are operational.

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	High	Long-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at the River Lune and included an assessment of impacts of the drought option on biodiversity. The report concluded negligible impacts on fish populations (salmon smolt, sea trout smolt, Atlantic salmon, brown trout, bullhead, coarse fish and lamprey species). Impacts macroinvertebrates are assessed as negligible. Impacts on all other ecological receptors (macrophytes and diatoms, macro-invertebrates, wildfowl, gulls, piscivorous birds and other riverine birds) were assessed as negligible to minor. No impacts on the Morecombe Bay SAC are anticipated. Overall, the impact of the drought option is summarised as negligible adverse and temporary.	Negligible adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	High	Long-term	Temporary	Low	Low	The EAR for River Lune revealed that impacts on downstream flows were assessed as negligible and short-term. Additionally, Morecombe Bay SAC site integrity is maintained, and therefore able to provide ecosystem services. The Biodiversity Net Gain (BNG) policy does not apply to projects where no groundworks, site clearance, or construction footprint will occur, and where there is no physical intervention that could impact existing habitats.	Negligible adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Small	Moderate	Long-term	Temporary	Low	Low	The drought permit involves only a change to existing minimum prescribed flow and does not involve intra or inter-catchment transfer and will not result in the introduction of new INNS. The drought permit implementation alone is considered likely to result in a negligible impact on the INNS (including Japanese knotweed and common cord-grass) of the affected reservoir and rivers, given that an overall reduction in the potential dispersal of INNS would be expected.	Negligible adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	High	Long-term	Temporary	High	Medium	The drought powers (reduction in hands-off flow) would allow water resources to be supported for a longer period, preserving reservoir storages elsewhere in the system, and at greater volumes than would otherwise be possible. However, if weather conditions prove to be favourable, abstraction would only be carried out under normal conditions. Only in sustained dry conditions would the drought powers be required. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. An Environmental Report has been prepared for drought contingency planning for the drought option at the River Lune. Overall, the impacts on population and human health have been assessed as moderate beneficial, taking into account minor negative impacts on recreation (canoeing & rowing) and on other abstractors and major beneficial impacts on security of water supply.	Negligible adverse	Major beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Medium	High	Long-term	Temporary	Medium	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at the River Lune and included an assessment of impacts of the drought option on recreation including angling and navigation. Minor adverse impacts were predicted for angling, canoeing, tourism and recreation, and navigation. However, net beneficial effects are anticipated for the Haaf net fishery on the Lune estuary, due to potentially increased catches of salmon.	Minor adverse	Minor beneficial
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Large	High	Long-term	Temporary	High	Medium	The drought powers (reduction in hands-off flow) would allow water resources to be supported for a longer period, preserving reservoir storages elsewhere in the system, and at greater volumes than would otherwise be possible. However, if weather conditions prove to be favourable, abstraction would only be carried out under normal conditions. Only in sustained dry conditions would the drought powers be required. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. Minor adverse impacts on other amenity and commercial abstractors were identified, which could result in adverse local socio-economic impacts. Overall, the impacts on population and human health have been assessed as moderate beneficial, taking into account minor negative impacts on recreation and on other abstractors and major beneficial impacts on security of water supply.	Negligible adverse	Major beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	High	Long-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. The option involve modifications to flow release only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	Moderate	Long-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. Option involves modifications to compensation flow only and no changes to energy use are envisaged.	None	Negligible beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	High	Long-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at the River Lune and included an assessment of impacts of the drought option on hydrodynamics. Impacts on river flows were assessed as short term and negligible, given that the drought option would not increase the frequency of the lowest flows (<200 Ml/d). Overall, the impacts on water have been assessed as negligible.	Negligible adverse	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	High	Long-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at the River Lune and included an assessment of impacts of the drought option on water quality. Impacts on water quality are negligible. Overall, the impacts on water quality have been assessed as negligible adverse and temporary.	Negligible adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Small	Moderate	Long-term	Temporary	Low	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at the River Lune and included an assessment of impacts of towards other abstractors. There are three relatively large industrial abstractions within Skerton pool. In operation, although sufficient depth will always be present for existing abstraction pipework to remain submerged, some uncertainty remains given the inability to confirm recent years abstraction experiences from one third party abstraction. Therefore a low magnitude of effect is concluded and the resultant impact significance is determined to be negligible. No change in the WFD status of the River Lune is predicted with respect to water quality.	Negligible adverse	None
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	High	Long-term	Temporary	Low	Low	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at the River Lune and included an assessment of impacts of the drought option on fluvial geomorphology which the report concluded to be negligible.	Negligible adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at the River Lune. No impacts on land, soils and geology are anticipated.	None	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	No operational impacts on air quality are anticipated. Option involves modifications to hands-off flow only and no changes to energy use, and therefore greenhouse gas emissions, are envisaged.	None	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	Moderate	Short-term	Temporary	Low	Medium	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Medium	High	Long-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at the River Lune and included an assessment of impacts of the drought option on archaeology and cultural heritage. The four heritage features identified as occurring within or immediately adjacent to the River Lune were assessed as unlikely to be directly impacted by any reduction in flow rate, velocity or wetted perimeter. The overall impact on archaeology is considered to be negligible.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	High	Long-term	Temporary	Low	High	An Environmental Report has been prepared for drought contingency planning for the drought option at the River Lune and included an assessment of impacts of the drought option on landscape and visual amenity. The River Lune LCUS pumping station is just within the Forest of Bowland AONB. However, any impacts would be short-term and the landscape character would be unlikely to change (of local value). The Environmental Report identified the impact on landscape and visual amenity as minor adverse or negligible and temporary.	Negligible adverse	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Long-term	Temporary	Low	Medium	Key inter-relationships include minor adverse impacts of hydrodynamics on recreation (including angling), navigation and other users (abstractors).	Minor adverse	Negligible beneficial

Rivington Reservoirs – Brinscall Brook
Reduce compensation flow from 3.9 to 2.0 Ml/d.

	Assessment of option								
Objective	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	High	Short-term	Temporary	Medium	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (Brinscall Brook) and included an assessment of impacts of the drought option on biodiversity. The environmental study identified moderate impacts on fish species including brown trout and bullhead during key spawning and egg incubation periods in one water body. Impacts on all other receptors were concluded as minor or negligible. Impacts on in-river habitats within the study area were assessed as minor adverse. Impacts to the West Pennine Moors SSSI and Charnock Richrd Pasture SSSI were assessed as negligible adverse due to the low sensitivity of the sites and negligible hydrological impacts anticipated there. No impacts on ecological features are predicted. A number of precautionary mitigation measures have been developed to reduce the impacts of the proposed drought permit and will be discussed and agreed with the EA during implementation. Overall, a precautionary approach has been applied and the impacts on biodiversity have been assessed as moderate adverse and temporary.	Moderate adverse	None
1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Low	Medium	As the option does not involve any construction works, no physical habitat loss or disturbance is expected, and therefore no compensatory planting or habitat enhancement is applicable. The Biodiversity Net Gain (BNG) policy does not apply to this option because no groundworks, site clearance or construction footprint will occur. The proposed drought permit is predicted to reduce flows and cause modest reductions in wetted habitat space. Impacts on habitat and geomorphology range between Medium and Low magnitude. Changes in sedimentation are not predicted as velocities are anticipated to remain above the threshold for fine sediment deposition.	Minor adverse	None
1.3 Avoid introducing or spreading INNS.	Small	Low	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	The environmental assessment of the drought permit considered the risk of spread of INNS. The EAR identifies potential adverse impacts due a reduction in downstream wetted area and flow under the drought permit which may lead to an increase in the relative density or viability of existing aquatic INNS (Himalayan balsam, giant hogweed, rhododendron, yellow archangel and common carp). For downstream water bodies, the proposed drought permit is anticipated to result in minor to major impacts on INNS fitness, with impacts varying depending on taxa. It is unlikely that the changes to INNS fitness during the permit implementation period will lead to observable cascading impacts on native flora and fauna. The overall assessment is assessed as negligible adverse. The reduction in compensation flow from the reservoir with limit the downstream dispersal of INNS, resulting in a negligible beneficial effect for this objective.	Negligible adverse	Negligible beneficial
2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low	High	The reduction in compensation flow under drought powers would enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (White Coppice). Consistent with the savings anticipated from this measure, a minor beneficial effect is assessed. It is not expected that the implementation of the proposed drought permit will lead to any interruptions to public water supply. Therefore, there will not be any adverse impacts on vulnerable customers, schools, the Health Service and other essential users. Overall, the impacts on population and human health have been assessed as minor beneficial based on continued supply of drinking water.	None	Minor beneficial
2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	High	Short-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (Brinscall Brook). Impacts were assessed as negligible.	Negligible adverse	None

	Assessment of option								
Objective	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	High	Short-term	Temporary	Low	High	The reduction in compensation flow under drought powers would enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. Overall, the impacts on population and human health have been assessed as moderate beneficial based on continued supply of drinking water.	None	Moderate beneficial
3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	High	Short-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. The option involve modifications to compensation flow only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial
3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	High	Short-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. Option involves modifications to compensation flow only and no changes to energy use are envisaged.	None	Negligible beneficial
4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Medium	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (White Coppice) and included an assessment of impacts of the drought option on hydrology. The report concluded adverse impacts on hydrodynamics of the affected riverine water bodies of medium to low magnitude, with a 50% reduction in Q95 flows downstream of the compensation release. Hydrological effects are predicted to decrease downstream of the confluence with the River Yarrow, becoming low. In Rake Brook Reservoir, the drought permit will slow the rate of drawdown and is predicted to have a negligible effect on reservoir water level and exposure. Overall, the impact is summarised as moderate adverse and temporary.	Moderate adverse	Negligible beneficial
4.2 Protect and enhance the quality of surface and groundwater resources.	Small	Low	Short-term	Temporary	Medium	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (White Coppice) and included an assessment of impacts of the drought option on water quality. The EAR concluded that the reduction in compensation release would have impacts to water quality varying from medium to low magnitude. The drought permit presented a risk of reduced water levels in fishing lodges, which could cause or exacerbate water temperature increases, thermal stratification, oxygen depletion, release of nutrients and metals from sediment, enhanced algal growth, increased UIA and resuspension of sediment. Elsewhere the downstream watercourses may experience minor adverse effects, including: a temporary, small increase in ammonia and BOD concentrations, with no change in WFD status; a temporary increase in phosphate concentration, with a risk of WFD status change from Good to Moderate at Black Brook above the confluence with the River Yarrow; a temporary increase in nitrate concentration, well within the Nitrates Directive guideline limit; and a temporary decrease in dissolved oxygen concentration, but with no impact on aquatic life. Overall, given the low confidence in water quality assessment a precautionary approach has been applied and the impact is summarised as moderate adverse and temporary.	Moderate adverse	None
4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance	Medium	Moderate	Short-term	Temporary	Low	Medium	The drought permit will likely have some minor, but temporary adverse impact on water dependent ecosystems in the affected reach.	Minor adverse	None
4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None

	Assessment of option								
Objective	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Small	Medium	Short-term	Temporary	Low	Low	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington and included an assessment of impacts of the drought option on fluvial geomorphology. The assessment concluded impacts to change in sedimentation would be of low magnitude and the change in availability of in-stream habitat would vary between medium and low. Reductions in flow are predicted to cause modest reductions in wetted habitat space with potential for marginal exposure towards the riverbank at some locations. Overall, minor adverse effects are assessed in relation to this objective.	Minor adverse	None
5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (Brinscall Brook). No impacts on land, soils and geology are anticipated.	None	None
6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
6.2 Reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	No operational impacts on air quality are anticipated. The option involves modifications to compensation flow only and no changes to energy use, and therefore greenhouse gas emissions, are envisaged.	None	None
6.3 Adapt and improve resilience to the threats of climate change.	Small	Moderate	Short-term	Temporary	Low	Medium	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Minor beneficial
7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Medium	High	Short-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (Brinscall Brook) and included an assessment of impacts of the drought option on archaeology and cultural heritage. The only scheduled monument identified in the study area was Croston Town Bridge, which is located over the River Yarrow. No records were found to indicate that anaerobic / organic remains are located adjacent to the watercourses. The report concluded that heritage features identified as occurring within or immediately adjacent to the rivers within the area of study are unlikely to be directly impacted by any reduction in flow rate, velocity or wetted perimeter and the overall impact on archaeology is negligible.	Negligible adverse	None
8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (Brinscall Brook) and included an assessment of impacts of the drought option on landscape and visual amenity. There are no designated landscape areas in the study area. Implementation of the drought permit would be a reduction in the rate of drawdown of Rake Brook Reservoir, leading to more water being retained for longer. This is anticipated to have a negligible beneficial impact on the aesthetic value of the reservoir. The downstream water bodies will experience a reduction in wetted perimeter during low flow conditions, although this is not anticipated to impact the aesthetic value. Visual amenity of the downstream rivers should recover quickly from any changes to flow regime and is therefore considered to be low sensitivity. The overall impact is considered to be negligible.	Negligible adverse	Negligible beneficial

	Assessment of option								
Objective	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Short-term	Temporary	Low	Medium	Key inter-relationships include the potential minor adverse impacts of hydrodynamics and water quality on riverine fish populations and impact on water dependent ecosystems in the affected reach.	Moderate adverse	Negligible beneficial

Drought Plan Option Name: Rivington Reservoirs – White Coppice
Drought Plan Option Description: Reduce compensation flow from 4.9 to 2.0 Ml/d.

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	High	Short-term	Temporary	Medium	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (White Coppice) and included an assessment of impacts of the drought option on biodiversity. The environmental study identified moderate impacts on fish species including brown trout and bullhead during key spawning and egg incubation periods in one water body. Impacts on all other receptors were concluded as minor or negligible. Impacts on in-river habitats within the study area were assessed as minor adverse. Impacts to the West Pennine Moors SSSI and Charnock Richrd Pasture SSSI were assessed as negligible adverse due to the low sensitivity of the sites and negligible hydrological impacts anticipated there. No impacts on ecological features are predicted. A number of precautionary mitigation measures have been developed to reduce the impacts of the proposed drought permit and will be discussed and agreed with the EA during implementation. Overall, a precautionary approach has been applied and the impacts on biodiversity have been assessed as moderate adverse and temporary.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Low	Medium	As the option does not involve any construction works, no physical habitat loss or disturbance is expected, and therefore no compensatory planting or habitat enhancement is applicable. The Biodiversity Net Gain (BNG) policy does not apply to this option because no groundworks, site clearance or construction footprint will occur. The proposed drought permit is predicted to reduce flows and cause modest reductions in wetted habitat space. Impacts on habitat and geomorphology range between Medium and Low magnitude. Changes in sedimentation are not predicted as velocities are anticipated to remain above the threshold for fine sediment deposition.	Minor adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Small	Low	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	The environmental assessment of the drought permit considered the risk of spread of INNS. The EAR identifies potential adverse impacts due a reduction in downstream wetted area and flow under the drought permit which may lead to an increase in the relative density or viability of existing aquatic INNS (Himalayan balsam, giant hogweed, rhododendron, yellow archangel and common carp). For downstream water bodies, the proposed drought permit is anticipated to result in minor to major impacts on INNS fitness, with impacts varying depending on taxa. It is unlikely that the changes to INNS fitness during the permit implementation period will lead to observable cascading impacts on native flora and fauna. The overall assessment is assessed as negligible adverse. The reduction in compensation flow from the reservoir with limit the downstream dispersal of INNS, resulting in a negligible beneficial effect for this objective.	Negligible adverse	Negligible beneficial
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low	High	The reduction in compensation flow under drought powers would enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (White Coppice). Consistent with the savings anticipated from this measure, a minor beneficial effect is assessed. It is not expected that the implementation of the proposed drought permit will lead to any interruptions to public water supply. Therefore, there will not be any adverse impacts on vulnerable customers, schools, the Health Service and other essential users. Overall, the impacts on population and human health have been assessed as minor beneficial based on continued supply of drinking water.	None	Minor beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	Moderate	Short-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington and included an assessment of impacts of the drought option on recreation. The reduction in compensation flow could have a negative impact on crop irrigation further downstream, which in turn could reduce crop yields and therefore farming incomes. However, any drought permit in force will only be implemented during natural drought conditions, meaning that river flows will be unaffected for the majority of the time. Given the lack of Rivington Reservoir is an important recreational asset, used for canoeing, sailing and walking. The reduced reservoir drawdown is anticipated to have a negligible beneficial effect on users of the reservoir. including angling. Impacts were assessed as negligible.	Negligible adverse	Negligible beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	High	Short-term	Temporary	Low	High	The reduction in compensation flow under drought powers would enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. The reduction in drawdown from the reservoir will also Overall, the impacts on population and human health have been assessed as minor beneficial based on continued supply of drinking water.	None	Minor beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	High	Short-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. The option involve modifications to compensation flow only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	High	Short-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. Option involves modifications to compensation flow only and no changes to energy use are envisaged.	None	Negligible beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Medium	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (White Coppice) and included an assessment of impacts of the drought option on hydrology. The report concluded adverse impacts on hydrodynamics of the affected riverine water bodies of medium to low magnitude, with a 57% reduction in Q95 flows downstream of the compensation release. Hydrological effects are predicted to decrease downstream of the confluence with the River Yarrow, becoming low. In Rake Brook Reservoir, the drought permit will slow the rate of drawdown and is predicted to have a negligible beneficial effect on reservoir water level and exposure. Overall, the impact is summarised as moderate adverse and temporary.	Moderate adverse	Negligible beneficial
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Small	Low	Short-term	Temporary	Medium	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (White Coppice) and included an assessment of impacts of the drought option on water quality. The EAR concluded that the reduction in compensation release would have impacts to water quality varying from medium to low magnitude. The drought permit presented a risk of reduced water levels in fishing lodges, which could cause or exacerbate water temperature increases, thermal stratification, oxygen depletion, release of nutrients and metals from sediment, enhanced algal growth, increased UIA and resuspension of sediment. Elsewhere the downstream watercourses may experience minor adverse effects, including: a temporary, small increase in ammonia and BOD concentrations, with no change in WFD status; a temporary increase in phosphate concentration, with a risk of WFD status change from Good to Moderate at Black Brook above the confluence with the River Yarrow; a temporary increase in nitrate concentration, well within the Nitrates Directive guideline limit; and a temporary decrease in dissolved oxygen concentration, but with no impact on aquatic life. Overall, given the low confidence in water quality assessment a precautionary approach has been applied and the impact is summarised as moderate adverse and temporary.	Moderate adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	Moderate	Short-term	Temporary	Low	Medium	The drought permit will likely have some minor, but temporary adverse impact on water dependent ecosystems in the affected reach.	Minor adverse	None
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Small	Medium	Short-term	Temporary	Low	Low	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington and included an assessment of impacts of the drought option on fluvial geomorphology. The assessment concluded impacts to change in sedimentation would be of low magnitude and the change in availability of in-stream habitat would vary between medium and low. Reductions in flow are predicted to cause modest reductions in wetted habitat space with potential for marginal exposure towards the riverbank at some locations. Overall, minor adverse effects are assessed in relation to this objective.	Minor adverse	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (White Coppice). No impacts on land, soils and geology are anticipated.	None	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	No operational impacts on air quality are anticipated. Option involves modifications to compensation flow only and no changes to energy use, and therefore greenhouse gas emissions, are envisaged.	None	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	Moderate	Short-term	Temporary	Low	Medium	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Medium	High	Short-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (White Coppice) and included an assessment of impacts of the drought option on archaeology and cultural heritage. The only scheduled monument identified in the study area was Croston Town Bridge, which is located over the River Yarrow. No records were found to indicate that anaerobic / organic remains are located adjacent to the watercourses. The report concluded that heritage features identified as occurring within or immediately adjacent to the rivers within the area of study are unlikely to be directly impacted by any reduction in flow rate, velocity or wetted perimeter and the overall impact on archaeology is negligible.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Rivington (White Coppice) and included an assessment of impacts of the drought option on landscape and visual amenity. There are no designated landscape areas in the study area. Implementation of the drought permit would be a reduction in the rate of drawdown of Rake Brook Reservoir, leading to more water being retained for longer. This is anticipated to have a negligible beneficial impact on the aesthetic value of the reservoir. The downstream water bodies will experience a reduction in wetted perimeter during low flow conditions, although this is not anticipated to impact the aesthetic value. Visual amenity of the downstream rivers should recover quickly from any changes to flow regime and is therefore considered to be low sensitivity. The overall impact is considered to be negligible.	Negligible adverse	Negligible beneficial
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Short-term	Temporary	Low	Medium	Key inter-relationships include the potential minor adverse impacts of hydrodynamics and water quality on riverine fish populations and impact on water dependent ecosystems in the affected reach.	Moderate adverse	Negligible beneficial

Drought Plan Option Name: Ullswater

Drought Plan Option Description: The Ullswater drought permit would allow United Utilities to temporarily suspend the annual abstraction limit and continue taking up to 363 Ml/d from Ullswater between January and July, provided River Eamont flows at Pooley Bridge remain above 175 Ml/d.

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	High	Short-term	Temporary	Low (adverse)	Medium	There are 7 SACs within 10km of the zone of influence including Lake District High Fells, Ullswater Oakwoods, River Eden (c.3.2km away), Tarn Moss (c.6.6km away), Naddle Forest (c.6.8km away), River Derwent & Bassenthwaite Lake (c.6.8km away) and North Pennine Dales Meadows (c.9.7km away). There are also 7 SSSIs within 1km including River Eden and Tributaries, Pooley Bridge Section, Helvellyn & Fairfield (0.8km away), Hallinhag Wood, Gowbarrow Park, Glencoyne Wood (c.15m away)and Birk Fell. Ullswater and the River Eamont form part the Eden catchment and are included in the River Eden SAC which is also designated as the River Eden and Tributaries SSSI. An Environmental Report has been prepared for drought contingency planning for Ullswater, and includes an assessment of the hydrological, water quality and ecological impacts of the drought option. Increased abstraction and reduced hands-off flow could reduce water levels and stress aquatic habitats and species, especially those dependent on higher flows. However, the EAR and HRA screening confirm that while increased abstraction and reduced hands-off flow could lower water levels and stress aquatic habitats, no likely significant effects on SAC or SSSI receptors have been identified. Species such as white-clawed crayfish, lamprey species, bullhead, otter, and Atlantic salmon are assessed as having negligible impacts. Freshwater macrophyte and macro-invertebrate communities are also expected to experience negligible effects. The HRA confirms there are no additional hydrologically linked sites or species beyond those assessed. No cumulative or in-combination effects are anticipated. Overall, the adverse effect on biodiversity is assessed as minor adverse.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	High	Short-term	Temporary	Low (adverse)	Medium	The EAR for Ullswater revealed that impacts on the River Eamont as a result of the drought permit are considered negligible for all receptors. Additionally, River Eden SAC and SSSI integrity is maintained, and therefore able to provide ecosystem services. The Biodiversity Net Gain (BNG) policy does not apply to projects where no groundworks, site clearance, or construction footprint will occur, and where there is no physical intervention that could impact existing habitats. The option may result in lower water levels that could create new habitats for species. However, this would be temporary during drought conditions.	Minor adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Medium	High	Short-term	Permanent	Low (adverse)	Low	Lower flows and warmer water can favour some INNS and exposed margins can create new colonisation zones , however operation would be temporary during drought conditions. Negligible impacts on the potential spread of INNS, including Himalayan balsam, are anticipated.	Negligible adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	Medium	Short-term	Temporary	High (beneficial)	Medium	The water abstracted from Ullswater under drought powers would augment the storage in Haweswater Reservoir if dry weather continues. Without these powers, in a severe drought, there would be a growing risk of a storage deficit, placing public water supplies at an unacceptable risk. During periods when river flow is between the statutory HoF and 175 Ml/d, the incremental deployable output could be well above 25 Ml/d, subject to lake level and asset constraints. This option is, therefore, deemed to have a beneficial impact in ensuring security of supply of drinking water. Overall, the impacts on population and human health have been assessed as major beneficial based on the additional water supply and on the continued provision of public water supplies.	None	Major beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	Medium	Short-term	Temporary	Low (adverse)	Low	Recreational activities on Ullswater include angling, boating, commercial navigation (including lake cruisers), water sports and walking. With implementation of this drought option there would be no deviation in lake level outside the normal envelope of extremes at any time of the year. Moreover, majority of angling takes place between August and October, which is outside the period of drought permit implementation. Impacts on recreational and / or commercial activities are, therefore, negligible. Canoeing is carried out on the Eamont, mainly from downstream of Eamont Bridge. Other recreational activities along the Eamont include angling and walking. Implementation of the drought option will have negligible impacts on angling and canoeing.	Negligible adverse	None
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Large	High	Short-term	Temporary	High (beneficial)	Medium	The water abstracted from Ullswater under drought powers would augment the storage in Haweswater Reservoir if dry weather continues. Without these powers, in a severe drought, there would be a growing risk of a storage deficit, placing public water supplies at an unacceptable risk. This option is, therefore, deemed to have a beneficial impact on the economy and the provision of essential services by ensuring security of supply of drinking water.	None	Major beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium	The abstraction of water from Ullswater is via pumped abstraction and will result in associated increase in resource use. The option will make use of existing infrastructure. The option has beneficial effects through optimising the use of water in the system, reducing the risk of supply interruptions and avoiding wastage.	Minor adverse	Moderate beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium	This option will support the maintenance of essential public water supplies during drought conditions.	None	Moderate beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	High	Short-term	Temporary	Low (adverse)	Low	An EAR has been prepared for drought contingency planning for Ullswater, and includes an assessment of the hydrological impacts of the drought option. The increased abstractions and reductions in lake level associated with the drought permit would be short-term, reversible, and remain within normal lake level envelopes. For this reason, the impact on lake levels is considered negligible. Similarly, any short-term reductions in river flows resulting from the drought permit would remain within the normal flow envelopes. As a considerable volume of water would still be present in the lake (above the natural sill level) when the 175 Ml/d "hands-off" flow resumes, there would be no change to minimum river flows. Overall, the report concludes that the drought option would have minimal effect on water levels in both Ullswater and the River Eamont, and therefore negligible environmental impacts have been identified.	Negligible adverse	None
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	High	Short-term	Temporary	Low (adverse)	Low	Increased abstraction may result in lower dilution capacity and higher concentrations of pollutants. Increased temperature and lower oxygen levels can harm aquatic receptors. An EAR has been prepared for drought contingency planning for Ullswater, and includes an assessment of the water quality impacts of the drought option. The report concluded that implementation of the drought option would result in negligible impacts to the physical environment of the land and river including water quality and hydrodynamics.	Negligible adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Large	High	Short-term	Temporary	Low (adverse) High (beneficial)	Low	The drought permit will have a negligible impact on water dependent ecosystems in the affected reach. Impacts towards other abstractors were assessed as negligible. Overall, the risk to WFD status for ammonia, dissolved oxygen, and phosphates is assessed as negligible, given the negligible hydrological impact and current High/Good status for these parameters. This conclusion assumes adherence to key safeguards, including maintaining the drought permit HoF of 175 Ml/d (January–July), no abstraction below the lake level limit of 145.05 m AOD, and continued operation of existing discharge permits. Routine water quality monitoring during low-flow periods will also help ensure compliance and protect WFD objectives.	Negligible adverse	Moderate beneficial
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	This option is aimed at resilience and security of supply, and will not contribute to the long-term improvement in water efficiency.	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	The option would take place on previously developed land which supports efficient use of land. There would be no significant land use changes associated with this option. An EAR has been prepared for drought contingency planning for Ullswater, and includes an assessment of geomorphological impacts. Overall, the impacts on geomorphology have been summarised as negligible.	Negligible adverse	Negligible beneficial
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	N/A	N/A	N/A	N/A	N/A	N/A	The drought permit itself does not directly promote a catchment-wide approach to land management, as it is an operational measure using existing infrastructure.	None	None
Air and climate	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium	The abstraction of water from Ullswater is via pumped abstraction and will increase energy consumption and, therefore, may contribute to the worsening of air quality. This impact has been assessed as minor adverse.	Minor adverse	None
Air and climate	6.2 Reduce greenhouse gas emissions.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium	The abstraction of water from Ullswater is via pumped abstraction and will increase energy consumption and, therefore, greenhouse gas emissions. This impact has been assessed as minor adverse.	Minor adverse	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	Medium	Short-term	Temporary	High (beneficial)	Medium	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Major beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low	Eamont Bridge is a scheduled ancient monument located approximately 2.5km from the Ullswater outflow at Pooley Bridge. Under drought option conditions, flow variation in the River Eamont is likely to be within the natural fluctuations experienced in the river, although minor adverse impacts to flows may occur in autumn / winter. However, no significant implications for Eamont Bridge or any previously undiscovered anaerobic / organic remains are anticipated. There is one Scheduled Ancient Monument within the zone of influence of the drought permit on Ullswater - a Moated site and annexe south of Gale Bay. Impacts on archaeology are not anticipated as there will be no reduction in lake level outside of the normal lake level envelope. Impacts on archaeology and cultural heritage are, therefore, considered to be negligible.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	Medium	Short-term	Temporary	Low (adverse)	Low	Reduction in water levels of lake/ rivers might mean temporary loss of visual amenity. Ullswater and the River Eamont are set within the Lake District National Park. An EAR has been prepared for drought contingency planning for Ullswater, and includes an assessment of landscape impacts. There would be no deviation in lake level outside the normal envelope of extremes at any time of the year therefore, the drought permit is considered to have a negligible impact on the landscape and visual amenity of Ullswater and its environs. The River Eamont is designated as a SAC and SSSI, and therefore has significant landscape and recreational value. The flow variation in the river is likely to be within the natural fluctuations experienced in the river, and the impact on visual amenity is therefore negligible.	Negligible adverse	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	Key inter-relationships in the operational phase impacts of increased abstraction and reduced HoF on biodiversity, noting the potential benefits resulting from augmented flows in spring / summer.	Negligible adverse	Negligible beneficial

Drought Plan Option Name: **Lake Windermere – Scenario 1**
Drought Plan Option Description: **Reduce hands-off flow conditions to a minimum of 95 Ml/d. Relax 12-month rolling abstraction licence limit.**

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	High	Long-term	Temporary	Low	Medium	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** An Environmental Report has been prepared for drought contingency planning for the drought option at Lake Windermere, and includes an assessment of the hydrological, water quality and ecological impacts of the drought option scenario. Windermere is designated as a County Wildlife Site, and a small proportion of Windermere is within the Low Wray Bay Site of Special Scientific Interest (SSSI). Other sites within the study area include Roudsea Wood and Mossess SAC/SSSI and Morecambe Bay SAC/SPA/SSSI and there are also various Local Wildlife Sites (LWS) and Sites of Invertebrate Significance (SIS) located within the study area. Impacts on designated sites are predicted to be negligible. Predicted reductions in depth and wetted perimeter in the River Leven pose a low risk of dewatering of salmonid and lamprey spawning habitat, and/or exposure of eggs/alevins which are assessed as a moderate impact on juvenile Atlantic salmon, sea trout, brown trout, brook lamprey, river lamprey, sea lamprey and bullhead. Under the drought permit draw down of lake levels would not be beyond those which may occur under baseline natural drought conditions, and the impact on other fish and white-clawed crayfish, salmonid, bullhead and lamprey), macrophytes and invertebrates will be negligible and short term. Likewise, impacts towards protected species (waterbirds, otter, smooth newt and Eurasian water shrew) are expected to be negligible, given the negligible changes to lake level and shoreline exposure and negligible to low impacts on river flow and levels predicted under the drought permit scenario. Overall this impact has been assessed as minor adverse and temporary.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	High	Long-term	Temporary	Low	Low	"The EAR for Lake Windermere revealed that under the drought permit draw down of lake levels would not be beyond those which may occur under baseline natural drought conditions. Minimum flows in the River Leven flows would not be significantly influenced, but the duration of low flows would be slightly increased. The Biodiversity Net Gain (BNG) policy does not apply to projects where no groundworks, site clearance, or construction footprint will occur, and where there is no physical intervention that could impact existing habitats."	Negligible adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Lake Windermere, which considered the risk of introducing or spreading of seven non-native INNS. It concluded that given the frequency of events in relation to the drought permit where HoF levels would fall below the baseline scenario, and the negligible changes to lake level and shoreline exposure predicted, potential INNS risks are not predicted. Negligible effects are anticipated.	Negligible adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	High	Long-term	Temporary	High	High	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** The water abstracted from Windermere under a drought option would effectively reduce abstraction of water from Haweswater reservoir and other UU reservoirs and thus conserve reservoir storage if dry weather continues. This measure will serve to safeguard public water supplies. An Environmental Report has been prepared for drought contingency planning for the drought option at Lake Windermere. which concluded negligible adverse effects. Overall, the impact of the drought option on population and human health has been assessed as major beneficial based on continued provision of public water supplies.	None	Major beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Medium	High	Long-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** An Environmental Report has been prepared for drought contingency planning for the drought option at Lake Windermere, and includes an assessment of the impacts on recreation. Water-based commercial (including lake cruisers) and recreational activities will not be significantly affected and the impact will be negligible. Negligible impacts on angling opportunity are anticipated. Overall, given that the drought permit is predicted to have a negligible impact on lake levels and shoreline exposure and the River Leven flow regime throughout the study area in comparison with the baseline situation. It is therefore unlikely that there would be any adverse impact on Lake Windermere or River Leven users and the local visitor economy and negligible effects are anticipated.	Negligible adverse	None
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Large	High	Long-term	Temporary	High	High	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** The water abstracted from Windermere under a drought option would effectively reduce abstraction of water from Haweswater reservoir and other UU reservoirs and thus conserve reservoir storage if dry weather continues. This measure will serve to safeguard public water supplies.	None	Major beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Long-term	Temporary	Medium	Low	**Construction** There is no construction phase associated with this drought option. Option involves modifications to abstraction regime and compensation flow only. **Operation** The abstraction of water from Windermere is via pumped abstraction and will increase energy consumption. This impact has been assessed as minor adverse and temporary. The option will make use of existing infrastructure.	Minor adverse	Negligible beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote the sustainable management of natural resources have been identified for this option.	None	None
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	High	Long-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** An Environmental Report has been prepared for drought contingency planning for Windermere, and includes an assessment of the hydrological and ecological impacts of drought option. The conclusions of the report were that the drought option would have a negligible impact on lake levels and shoreline exposure throughout the study area in comparison with the baseline situation. Hence this drought option would not significantly impact on lake levels during periods of summer drought, constituting only a negligible impact on water levels, and would not significantly influence the minimum flow seen in the River Leven, but would slightly increase the duration of low flows. Overall, the impact of the drought option on water has been assessed as negligible.	Negligible adverse	None
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	High	Long-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** An Environmental Report has been prepared for drought contingency planning for Windermere, and includes an assessment of the water quality and ecological impacts of the drought option. The drought option is expected to have negligible impact on lake hydrochemistry and water quality and any effects would be short term, i.e. during summer, when algal production is greatest. Similarly, the magnitude of impact on the River Leven is predicted to be low between April and June when conditions for algal and plant growth are most favourable and negligible at other times of the year. Overall, the impact of the drought option on water has been assessed as negligible, based on negligible impacts to river water quality.	Negligible adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	High	Long-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. The option involves modifications to compensation flow only. **Operation** An Environmental Assessment Report has been prepared for drought contingency planning for the drought option and included an assessment of impacts on WFD deterioration. The report concluded negligible impacts on the current WFD status, future WFD objectives and supporting element status of all waterbodies.	Negligible adverse	None
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	High	Long-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for Windermere, and includes an assessment of geomorphological impacts. Lake drawdown under the drought option is similar to a normal drought situation and changes in geomorphological function of the lake would be negligible. The low flow and the velocity envelope in the River Leven would be very similar to normal drought conditions throughout the year, as the hands-off flow protects the lowest flows. No changes in geomorphological function would therefore be expected and the impact is negligible. The impact on sediment transport in the River Leven would also be negligible.	Negligible adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	Medium	N/A	N/A	N/A	N/A	N/A	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** There would be no land use changes associated with this option.	None	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Air and climate	6.2 Reduce greenhouse gas emissions.	Large	Moderate	Long-term	Temporary	Medium	Low	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** The abstraction of water from Windermere is via pumped abstraction and will increase energy consumption and, therefore, greenhouse gas emissions.	Minor adverse	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Medium	High	Long-term	Temporary	Low	High	**Construction** There is no construction phase associated with this drought option. Option involves modifications to compensation flow only. **Operation** Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Medium	Moderate	Long-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** The only known Scheduled Monument on Windermere or the River Leven is Newby Bridge itself and there are no known water level dependent archaeological/cultural heritage features. Changes to hydrodynamics are assessed as negligible, therefore, no implications for any previously undiscovered anaerobic / organic remains are anticipated. Impacts on cultural heritage are therefore considered to be negligible.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	Moderate	Long-term	Temporary	Low	Low	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** Windermere and the River Leven are set within the Lake District National Park. An Environmental Report has been prepared for drought contingency planning for Windermere, and includes an assessment of landscape impacts. Under Scenario 1, lake levels would remain within the normal drought envelope and effect on river levels and wetted area are predicted to be negligible therefore landscape impacts are assessed as negligible. Overall, landscape impacts are assessed as negligible.	Negligible adverse	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Long-term	Temporary	Low	Medium	**Construction** There is no construction phase associated with this drought option. The option involves modifications to abstraction regime and compensation flow only. **Operation** Key adverse inter-relationships between river flows, water quality and biodiversity. This has been as assessed as a minor adverse inter-relationship.	Minor adverse	Negligible beneficial

Drought Plan Option Name: NEBs - Bowscar

Drought Plan Option Description: The drought permit would raise the annual abstraction limit from 618.26 Ml/year to 1,227.86 Ml/year, while keeping the maximum daily rate at 3.364 Ml/d. This could provide up to an additional 1.674 Ml/d on average.

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	High	Short-term	Temporary	Low (adverse)	Medium	An EAR has been prepared for drought contingency planning for the drought option at Bowscar (part of the North Eden boreholes group). Assessment indicates moderate temporary increase in groundwater drawdown (> 0.5 m) within a radius of 1600m from source. The associated cumulative flow depletion is predicted to reach a maximum of c.0.25 Ml/d which is negligible and therefore, no significant effect is predicted for the River Eamont. Due to negligible flow changes predicted as part of the hydrological assessment, habitats and geomorphology were not assessed, similarly for macrophytes, diatoms, macroinvertebrates, fish, and protected species. There are no anticipated impacts on the River Eden SAC, River Eden and Tributaries SSSI, River Eden SAC, Wan Fell SSSI, Newton Reigny Moss SSSI, Great Salkeld Shingle Bank Site of Invertebrate Significance, Lazonby Fell SSSI, Cowraik Quarry SSSI and LNR. No impacts on ecological features are predicted.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	High	Short-term	Temporary	Low (adverse)	Medium	Additional hydrological pressures are anticipated as a result of the temporary increased abstraction during drought conditions. The EAR for the North Eden Boreholes (NEBs) revealed that at Bowscar, changes in groundwater level under the proposed drought permit are predicted to be of negligible magnitude for all nearby receptors. The Biodiversity Net Gain (BNG) policy does not apply to projects where no groundworks, site clearance, or construction footprint will occur, and where there is no physical intervention that could impact existing habitats.	Minor adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	The environmental assessment considered likely impacts on INNS. Due to negligible flow changes predicted as part of the hydrological assessment, no impacts are anticipated.	None	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	Increased groundwater abstraction may adversely impact other licensed abstractors/users through lowering local groundwater tables. The EAR indicates that at Bowscar, changes in groundwater level under the proposed drought permit are predicted to be negligible for all nearby receptors. The potential impacts on third-party groundwater abstractions remain uncertain, primarily because the sensitivity of individual sources to groundwater drawdown is not confirmed. Liaison and monitoring are recommended to manage this uncertainty. The drought option would provide up to 1.674 Ml/d and enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk.	Minor adverse	Minor beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	High	Short-term	Temporary	Low (adverse)	Low	The EAR indicates that at Bowscar, modelled changes are negligible and too small to affect river-based recreation or tourism activities. While angling occurs nearby, it was not assessed due to the negligible hydrological impact.	Negligible adverse	None
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium	The drought option would provide up to 1.674 Ml/d and enable the continued supply of water if dry weather continues. Without this option, in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk.	None	Minor beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	The option involves increase of the annual licensed limit to enable continuation of the maximum daily abstraction rate. Increased pumping of water from the boreholes will result in an associated increase in energy use. Given the amount of additional water abstracted, the impact has been assessed as negligible.	Negligible adverse	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Small	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	The option maximises use of existing infrastructure. Small, temporary changes to energy use are envisaged due to increased pumping of water from the boreholes. However, this impact has been assessed as negligible. This action will however support the maintenance of essential public water supplies during drought conditions.	Negligible adverse	Negligible beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low	The options involves temporary increase in abstraction from existing boreholes which may impact groundwater and surface water flows. An EAR has been prepared for drought contingency planning for the drought option at Bowscar. Hydrogeological assessment predicts a moderate, temporary drawdown within 1.6 km of the source, with a maximum cumulative flow depletion of about 0.25 Ml/d, which is very small compared to typical low-flow conditions in the river. No significant impact is expected on the River Eamont, with no major changes in water level, velocity, depth, wetted width, or area. Overall, modelling indicates the drought option at Bowscar is unlikely to cause measurable effects on flows in the River Eamont or its tributaries.	Negligible adverse	None
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Small	High	Short-term/Medium-term	Temporary	Low (adverse)	Low	Lowering groundwater levels can draw in poorer-quality water from adjacent strata or mobilise contaminants. However, because the hydrological assessment predicts negligible changes in flow, the potential impacts on water quality are considered negligible. For the Eden Valley and Carlisle Basin Permo-Triassic Sandstone groundwater body, impacts are assessed as short-term and low to medium, limited to groundwater level changes within a small radius around the Bowscar source.	Negligible adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	An EAR has been prepared for drought contingency planning for the Bowscar drought permit option. The potential impacts on third-party groundwater abstractions remain uncertain, primarily because the sensitivity of individual sources to groundwater drawdown is not confirmed. Liaison and monitoring are recommended to manage this uncertainty. The impact on water quality was not assessed due to negligible flow changes predicted as part of the hydrological assessment, meaning there is no risk to the achievement of WFD compliance objectives.	Negligible adverse	Negligible beneficial
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	The drought permit does not directly improve water efficiency or reduce leakage.	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Small	High	Short-term	Temporary	Low (beneficial)	Low	The scheme would take place on previously developed land which supports efficient use of land. There would be no land use changes associated with this option. An EAR has been prepared for drought contingency planning for the drought option at Bowscar and impacts on geomorphology were not assessed due to negligible flow changes predicted as part of the hydrological assessment.	None	Negligible beneficial
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low	There would be no land use changes associated with this option. An EAR has been prepared for drought contingency planning for the drought option at Bowscar. No impacts on land, soils and geology are anticipated. Increased abstraction may indirectly affect other land uses.	Negligible adverse	None
Air and climate	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	This drought option involves modifications to annual licensed limit only. Minor changes to energy use and therefore CO2 emissions are envisaged due to increased pumping of water from the borehole. This impact on air quality has been assessed as negligible.	Negligible adverse	None
Air and climate	6.2 Reduce greenhouse gas emissions.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	This drought option involves modifications to annual licensed limit only. Minor changes to energy use and therefore CO2 emissions are envisaged due to increased pumping of water from the borehole. This impact has been assessed as negligible.	Negligible adverse	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Small	High	Short-term	Temporary	Low (adverse)	Low	An EAR has been prepared for drought contingency planning for the drought option at Bowscar and included an assessment of impacts on archaeology. The report concluded that given that groundwater levels at Bowscar are significantly below the surface, no pathway for impact has been identified.	Negligible adverse	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Small	Medium	Short-term	Temporary	Low (adverse)	Low	An EAR has been prepared for drought contingency planning for the drought option at Bowscar and included an assessment of impacts on landscape and visual amenity, which concluded that additional groundwater drawdown may reduce hydrologically connected surface water flows, resulting in reductions in wetted perimeter and water depth.	Negligible adverse	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	Key inter-relationships include the impact of riverine flow reduction on biodiversity, geomorphology and landscape. However, as the impact on flow reductions are predicted to be negligible, negligible impacts on other topics are anticipated.	Negligible adverse	Negligible beneficial

Drought Plan Option Name: **NEBs - Gamblesby**

Drought Plan Option Description: **In the event of an extended dry period, United Utilities may apply for a drought permit to increase the annual abstraction limit from 500 Ml/year to 584 Ml/year, while maintaining the current maximum daily rate of 1.6 Ml/day. This could provide up to an additional 0.23 Ml/day on average.**

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	The option involves increase of the annual licensed limit to enable continuation of the maximum daily abstraction rate. An EAR has been prepared for drought contingency planning for the drought option at Bowscar (part of the North Eden boreholes group). Assessment indicates minor groundwater drawdown, with changes of less than 0.5 m beyond 500 m from the source and greater drawdown within 500 m. Cumulative flow depletion is predicted to peak at 0.061 Ml/d, reducing minimum flows by 6% in Raven Beck, 1.2% in Hazelrigg Beck, and less than 1% in Gamblesby Beck and Gill Beck. Impacts on habitats, geomorphology, and aquatic ecology, including macrophytes, diatoms, macroinvertebrates, fish, and protected species, are negligible. Designated sites within 10 km (North Pennine Moors SPA/SAC, Tyne & Nent, River Eden, and Moor House-Upper Teesdale SAC) are not expected to experience significant changes, as additional drawdown remains within tolerance levels.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	Additional hydrological pressures are anticipated as a result of the temporary increased abstraction during drought conditions. The EAR for the North Eden Boreholes (NEBs) revealed that at Gamblesby, changes in groundwater level under the proposed drought permit are predicted to be of negligible magnitude for all nearby receptors. The Biodiversity Net Gain (BNG) policy does not apply to projects where no groundworks, site clearance, or construction footprint will occur, and where there is no physical intervention that could impact existing habitats.	Minor adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Medium	Low to Medium	Short-term	Temporary	Low (adverse)	Medium	The EAR assessed likely impacts on INNS and found that pathways associated with this drought permit could influence species fitness. Two INNS were identified: Himalayan balsam and Jenkins' Spire Snail (a priority INNS). Himalayan balsam may experience a minor negative fitness change due to reduced flow limiting seed dispersal, while Jenkins' Spire Snail may be affected by reduced wetted habitats from hydrogeological changes, despite some tolerance to desiccation. Overall, INNS impacts are considered minor negative, with medium confidence for Himalayan balsam and low confidence for Jenkins' Spire Snail.	Minor adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	Increased groundwater abstraction may adversely impact other licensed abstractors and users by lowering local groundwater tables. The EAR indicates that at Gamblesby, changes in groundwater level under the proposed drought permit are predicted to be minor but could affect springs supplying multiple properties and surface water abstractions, depending on licence conditions and infrastructure. The potential impacts on third-party abstractions remain uncertain, primarily because the sensitivity of individual sources to groundwater drawdown is not confirmed. Liaison and monitoring are recommended to manage this uncertainty. The drought option would provide up to 0.23 Ml/d and enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk.	Minor adverse	Minor beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	High	Short-term	Temporary	Low (adverse)	Low	The EAR indicates that at Gamblesby, modelled changes are negligible and too small to affect river-based recreation or tourism activities. The assessed water bodies (Glassonby Beck and Raven Beck) are not likely to provide significant angling opportunities, and no impacts on tourism or recreation are anticipated.	Negligible adverse	None
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium	The drought option would provide up to 0.23 Ml/d and enable the continued supply of water if dry weather continues. Without this option, in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk.	None	Minor beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	The option involves increase of the annual licensed limit to enable continuation of the maximum daily abstraction rate. Increased pumping of water from the boreholes will result in an associated increase in energy use. Given the amount of additional water abstracted, the impact has been assessed as negligible.	Negligible adverse	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Small	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	The option maximises use of existing infrastructure. Small, temporary changes to energy use are envisaged due to increased pumping of water from the boreholes. However, this impact has been assessed as negligible. This action will however support the maintenance of essential public water supplies during drought conditions.	Negligible adverse	Negligible beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low	The options involves temporary increase in abstraction from existing boreholes which may impact groundwater and surface water flows. An EAR has been prepared for drought contingency planning for the drought option at Gamblesby. Hydrogeological modelling predicts a maximum cumulative flow depletion of about 0.061 Ml/d, equivalent to approximately 6% reduction in minimum flows in Raven Beck, 1.2% in Hazelrigg Beck, and less than 1% in Gamblesby Beck and Gill Beck. Sensitivity analysis indicates that, even under a reasonable worst-case scenario, reductions in Raven Beck flows are unlikely to exceed 10%. While uncertainty remains due to limited flow data and simplified modelling, overall impacts are expected to be minor and temporary, with the greatest potential effect on Raven Beck.	Negligible adverse	None
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low	Lowering groundwater levels can draw in poorer-quality water from adjacent strata or mobilise contaminants. However, because the hydrological assessment predicts negligible changes in flow, the potential impacts on surface water quality are considered negligible. Similarly, negligible impacts are anticipated on the Eden Valley and Carlisle Basin Permo-Triassic Sandstone groundwater body.	Negligible adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	High	Short-term	Temporary	Low (adverse)	Low	An EAR has been prepared for drought contingency planning for the drought options at Gamblesby. Reductions in river flow could affect water quality by reducing dilution of point sources such as Renwick STW and diffuse inputs. However, predicted flow reductions on Raven Beck are very small, and there is no historical evidence of significant effects during dry periods. Any impacts would be short term and unlikely to cause toxic effects on fish. Lowering groundwater levels can draw in poorer-quality water from adjacent strata or mobilise contaminants, but no deterioration of the Eden Valley and Carlisle Basin Permo-Triassic Sandstone groundwater body is anticipated. The EAR concluded minor adverse impacts on third-party surface water abstractions within the zone of influence, while WFD compliance risks were not assessed due to negligible flow changes predicted by the hydrological assessment.	Negligible adverse	None
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	The drought permit does not directly improve water efficiency or reduce leakage.	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Small	Low	Short-term	Temporary	Low (adverse)	Low	There would be no land use changes associated with this option. An EAR for the Gamblesby drought option concluded negligible impacts on fluvial geomorphology. Modelling shows water levels under the drought permit would be similar to those predicted during a drought under normal abstraction. In-stream habitat and geomorphological processes are expected to remain unaffected, though confidence is low due to limited data.	Negligible adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low	There would be no land use changes associated with this option. An EAR has been prepared for drought contingency planning for the drought options at Gamblesby. No impacts on land, soils and geology are anticipated. Increased abstraction may indirectly affect other land uses.	Negligible adverse	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	This drought option involves modifications to annual licensed limit only. Minor changes to energy use and therefore CO2 emissions are envisaged due to increased pumping of water from the boreholes. This impact on air quality has been assessed as negligible.	Negligible adverse	None
Air and climate	6.2 Reduce greenhouse gas emissions.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	This drought option involves modifications to annual licensed limit only. Minor changes to energy use and therefore CO2 emissions are envisaged due to increased pumping of water from the boreholes. This impact has been assessed as negligible.	Negligible adverse	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Minor beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Small	High	Short-term	Temporary	Low (adverse)	Low	An EAR has been prepared for drought contingency planning for the drought option at Gamblesby and included an assessment of impacts on archaeology. The report concluded that additional drawdown could alter soil or water chemistry and potentially damage archaeological deposits; however, most of the area around the Gamblesby source is covered by superficial deposits, so features such as the Harescugh Fell medieval settlement are unlikely to be affected by changes in groundwater levels in the underlying sandstone.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Small	Medium	Short-term	Temporary	Low (adverse)	Low	An EAR has been prepared for drought contingency planning for the drought option at Gamblesby and included an assessment of impacts on landscape and visual amenity, which concluded that additional groundwater drawdown may reduce hydrologically connected surface water flows, resulting in reductions in wetted perimeter and water depth.	Negligible adverse	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	Key inter-relationships include the impact of riverine flow reduction on biodiversity, geomorphology and landscape. However, as the impact on flow reductions are predicted to be negligible, negligible impacts on other topics are anticipated.	Negligible adverse	Negligible beneficial

Drought Plan Option Name: NEBs - Tarn Wood

Drought Plan Option Description: The drought permit would increase the annual abstraction limit from 592.27 Ml/year to 865.78 Ml/year, while maintaining the current maximum daily rate of 2.372 Ml/day. This could provide up to an additional 0.75 Ml/d on average.

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	The option involves increase of the annual licensed limit to enable continuation of the maximum daily abstraction rate. An EAR has been prepared for drought contingency planning for the drought option at Bowscar (part of the North Eden boreholes group). Assessment predicts a moderate, temporary groundwater drawdown (>0.5 m) within 1,200 m of the boreholes, with negligible changes in river flows and an estimated maximum depletion of ~0.6 Ml/d in the River Eden. Due to these negligible flow changes, no significant impacts are anticipated on habitats, geomorphology, or aquatic ecology, including macrophytes, diatoms, macroinvertebrates, fish, and protected species. Designated sites such as the River Eden & Tributaries SSSI/SAC, Moor House-Upper Teesdale SAC, North Pennine Moors SAC/SPA, Melmerby to Alston Road SSSI, and the North Pennines National Landscape are not expected to be affected.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium	Additional hydrological pressures are anticipated as a result of the temporary increased abstraction during drought conditions. The EAR for the North Eden Boreholes (NEBs) revealed that at Tarn Wood, changes in groundwater level under the proposed drought permit are predicted to be of negligible magnitude for all nearby receptors. The Biodiversity Net Gain (BNG) policy does not apply to projects where no groundworks, site clearance, or construction footprint will occur, and where there is no physical intervention that could impact existing habitats.	Minor adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	The EAR considered likely impacts on INNS. Due to negligible flow changes predicted as part of the hydrological assessment, no impacts are anticipated.	None	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Large	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium	Increased groundwater abstraction may adversely impact other licensed abstractors and users by lowering local groundwater tables. The EAR indicates that at Tarn Wood, changes in groundwater level under the proposed drought permit are predicted to be minor but could affect a nearby private spring/borehole supply. This source is likely to have some resilience due to the ability to switch to boreholes or lower pumps if the spring dries up. However, uncertainty remains regarding the magnitude and spatial extent of impacts and the sensitivity of individual sources. Liaison and monitoring are recommended to manage this uncertainty. The drought option would provide up to 0.75 Ml/d and enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk.	Minor adverse	Minor beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	High	Short-term	Temporary	Low (adverse)	Low	The EAR indicates that at Tarn Wood, modelled changes are negligible and too small to affect river-based recreation or tourism activities. While angling occurs nearby, it was not assessed due to the negligible hydrological impact.	Negligible adverse	None
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium	The drought option would provide up to 0.75 Ml/d and enable the continued supply of water if dry weather continues. Without this option, in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk.	None	Minor beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (adverse)	Low	The option involves increase of the annual licensed limit to enable continuation of the maximum daily abstraction rate. Increased pumping of water from the boreholes will result in an associated increase in energy use. Given the amount of additional water abstracted, the impact has been assessed as negligible.	Negligible adverse	None
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Small	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	The option maximises use of existing infrastructure. Small, temporary changes to energy use are envisaged due to increased pumping of water from the boreholes. However, this impact has been assessed as negligible. This action will however support the maintenance of essential public water supplies during drought conditions.	Negligible adverse	Negligible beneficial

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	The options involves temporary increase in abstraction from existing boreholes which may impact groundwater and surface water flows. An EAR has been prepared for drought contingency planning for the drought option at Tarn Wood. Hydrogeological modelling predicts a maximum cumulative flow depletion of about 0.6 Ml/d, which is negligible compared to typical low-flow conditions in the River Eden. While some uncertainty remains due to assumptions about ground properties, sensitivity analysis confirms that any impact will be minor. Overall, the drought option at Tarn Wood is unlikely to cause measurable changes in river levels or flow characteristics.	Negligible adverse	None
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Small	High	Short-term	Temporary	Low (adverse)	Low	Lowering groundwater levels can draw in poorer-quality water from adjacent strata or mobilise contaminants. However, because the hydrological assessment predicts negligible changes in flow, the potential impacts on surface water quality are considered negligible. Similarly, negligible impacts are anticipated on the Eden Valley and Carlisle Basin Permo-Triassic Sandstone groundwater body.	Negligible adverse	None
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low	An EAR has been prepared for drought contingency planning for the drought options at Tarn Wood. The assessment concluded minor adverse, short-term impacts on a nearby private spring and borehole supply. Lowering groundwater levels can draw in poorer-quality water from adjacent strata or mobilise contaminants; however, no deterioration of the Eden Valley and Carlisle Basin Permo-Triassic Sandstone groundwater body is anticipated. Impacts on surface waterbody WFD compliance were not assessed due to negligible flow changes predicted by the hydrological assessment.	Negligible adverse	None
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	The drought permit does not directly improve water efficiency or reduce leakage.	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Small	High	Short-term	Temporary	Low (adverse)	Low	There would be no land use changes associated with this option. An EAR has been prepared for drought contingency planning for the drought option at Bowscar and impacts on geomorphology were not assessed due to negligible flow changes predicted as part of the hydrological assessment.	Negligible adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low	There would be no land use changes associated with this option. An EAR has been prepared for drought contingency planning for the drought options at Tarn Wood. No impacts on land, soils and geology are anticipated. Increased abstraction may indirectly affect other land uses.	Negligible adverse	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	This drought option involves modifications to annual licensed limit only. Minor changes to energy use and therefore CO2 emissions are envisaged due to increased pumping of water from the borehole. This impact on air quality has been assessed as negligible.	Negligible adverse	None
Air and climate	6.2 Reduce greenhouse gas emissions.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	This drought option involves modifications to annual licensed limit only. Minimal change to energy use and therefore CO2 emissions are envisaged due to increased pumping of water from the boreholes. This impact has been assessed as negligible.	Negligible adverse	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Small	High	Short-term	Temporary	Low (adverse)	Low	An EAR has been prepared for drought contingency planning for the drought option at Tarn Wood and included an assessment of impacts on archaeology. The report concluded that given that groundwater levels at Tarn Wood are significantly below the surface, no pathway for impact has been identified.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Small	Medium	Short-term	Temporary	Low (adverse)	Low	An EAR has been prepared for drought contingency planning for the drought option at Tarn Wood and included an assessment of impacts on landscape and visual amenity, which concluded that additional groundwater drawdown may reduce hydrologically connected surface water flows, resulting in reductions in wetted perimeter and water depth.	Negligible adverse	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ medium/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low	Key inter-relationships include the impact of riverine flow reduction on biodiversity, geomorphology and landscape. However, as the impact on flow reductions are predicted to be negligible, negligible impacts on other topics are anticipated.	Negligible adverse	Negligible beneficial

Drought Plan Option Name: Longdendale Reservoirs
Drought Plan Option Description: Reduce compensation flow from 45.5 to 22.5 Ml/d. There is no construction phase associated with this drought option as the option involves modifications to compensation flow only, the assessment considers operational impacts only.

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Biodiversity, flora and fauna	1.1 Protect and enhance biodiversity, including designated sites of nature conservation interest and protected habitats and species (with particular regard to avoiding the effects of over-abstraction on sensitive sites, habitats and species), enhance ecosystem resilience and habitat connectivity.	Medium	High	Short-term	Temporary	Low	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on biodiversity. Overall, the impacts on brown trout, bullhead, brook lamprey and coarse fish were summarised as minor to moderate adverse. Impacts on a salmon (all life stages) are assessed as negligible all year round. Minor adverse impacts on macrophytes, phytobenthos and macroinvertebrates were also predicted. The impacts on other ecological receptors (otter, water vole, wading birds, wildfowl and gulls, riverine birds and great crested newts) were assessed as negligible. Impacts on designated sites, including Compstall Nature Reserve SSSI, are assessed as negligible.	Minor adverse	None
Biodiversity, flora and fauna	1.2 Protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	High	Short-term	Temporary	Low	Medium	The EAR for Longdendale revealed that impacts are considered minor to moderate for all receptors and moderate impact on hydrology. The Biodiversity Net Gain (BNG) policy does not apply to projects where no groundworks, site clearance, or construction footprint will occur, and where there is no physical intervention that could impact existing habitats. The option may result in lower water levels that could create new habitats for species. However, this would be temporary during drought conditions.	Negligible adverse	None
Biodiversity, flora and fauna	1.3 Avoid introducing or spreading INNS.	Small	Moderate	Short-term	Temporary	Low	Low	The environmental assessment considered likely impacts on INNS. The drought permit involves only a change to existing compensation release and does not involve intra or inter-catchment transfer and will not result in the introduction of new INNS. The drought permit implementation alone, and for all in-combination scenarios (with possible Fernilee and Dovestone drought permits) is considered likely to result in a negligible impact on the INNS communities of the affected reservoir and rivers. Negligible impacts on the potential spread of INNS are anticipated.	Negligible adverse	None
Population and human health	2.1 Protect and improve health and well-being (including raising awareness of the importance and value of the water environment for health and wellbeing).	Medium	Moderate	Short-term	Temporary	Medium	High	The reduction in compensation flow under drought powers would enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. Overall, the impacts on population and human health have been assessed as major beneficial based on continued supply of drinking water.	None	Major beneficial
Population and human health	2.2 Protect and enhance the water environment for other users including recreation, tourism, navigation, as well as terrestrial recreational resources (including National Trails and Public Rights of Way).	Small	High	Short-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on recreation, including angling. The assessment concluded a minor negative impact predicted on the aesthetic value of the river channels.	Negligible adverse	None
Population and human health	2.3 Promote a sustainable economy with good access to essential services, including a resilient, high quality and affordable supply of water.	Medium	Moderate	Short-term	Temporary		High	The reduction in compensation flow under drought powers would enable the continued supply of water if dry weather continues. Without these powers in a severe drought, there would be a growing risk of a deficit, placing public water supplies at an unacceptable risk. Overall, the impacts on population and human health have been assessed as major beneficial based on continued supply of drinking water.	None	Major beneficial
Material assets and resource use	3.1 Minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Moderate	Short-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. The option involve modifications to compensation flow only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Negligible beneficial
Material assets and resource use	3.2 Promote and enhance the sustainable and efficient use of resilient water resources and to ensure water supply for homes and industry in the area is maintained.	Medium	Moderate	Short-term	Temporary	Low	Low	No operational impacts on material assets and resource use are anticipated. Option involves modifications to compensation flow only and no changes to energy use are envisaged.	None	Negligible beneficial
Water	4.1 Protect and enhance surface and groundwater levels and flows.	Medium	High	Short-term	Temporary	Medium	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on hydrodynamics. Reduction in compensation flow to 25M/d was assessed as having medium adverse impacts on riverine hydrodynamics. Negligible impact on reservoir hydrodynamics are anticipated. Overall, the impact on water has been summarised as moderate adverse and temporary.	Moderate adverse	None
Water	4.2 Protect and enhance the quality of surface and groundwater resources.	Medium	High	Short-term	Temporary	Medium	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on water quality. With mitigation, the impacts on riverine water quality are predicted to be low to medium adverse. Overall, the impact on water quality has been summarised as minor adverse and temporary.	Minor adverse	None

SEA topics and objectives		Assessment of option								
Topic	**Objective**	**Scale of effect: geographical &/ or population affected (small/medium/large)**	**Certainty of effect (low/ moderate/ high)**	**Short-term/ medium-term/ long-term**	**Permanence of effect (permanent/ temporary)**	**Magnitude of effect (low/ medium/ high)**	**Value/ sensitivity of receptor (low/ medium/ high)**	**Potential residual effect on sensitive receptors (assuming good practice construction methods) Commentary**	**Residual adverse effect significance (likely to remain after reasonable mitigation)**	**Residual beneficial effect significance (likely to remain after reasonable mitigation)**
Water	4.3 Ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions and services that rely on water resources including contributing to the achievement of WFD compliance objectives.	Medium	Moderate	Short-term	Temporary	Medium	Low	The drought permit will likely have some minor, but temporary adverse impact on water dependent ecosystems in the affected reach. There are three abstractions in the zone of influence of the drought permit. The environmental assessment concluded that impacts on other abstractors are considered negligible.	Minor adverse	None
Water	4.4 Promote measures to enable and sustain long term improvement in water efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Soil, geology and land use	5.1 Protect and enhance soil quantity, quality and functionality and geodiversity and ensure the appropriate and efficient use of land.	Medium	High	Short-term	Temporary	Low	Medium	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on fluvial geomorphology. The report concluded negligible to medium magnitude of flow effects on sediment dynamics. Given the regional value of the geomorphology of the rivers, an overall minor impact on geomorphology is anticipated.	Minor adverse	None
Soil, geology and land use	5.2 Promote a catchment-wide approach to catchment land management.	Medium	N/A	N/A	N/A	N/A	N/A	There would be no land use changes associated with this option. An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale. No impacts on land, soils and geology are anticipated.	None	None
Soil, geology and land use	6.1 Minimise emissions of pollutant gases and particulates and enhance air quality.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None	None
Air and climate	6.2 Reduce greenhouse gas emissions.	Large	N/A	N/A	N/A	N/A	N/A	No operational impacts on air quality are anticipated. Option involves modifications to compensation flow only and no changes to energy use and, therefore, greenhouse gas emissions, are envisaged.	None	None
Air and climate	6.3 Adapt and improve resilience to the threats of climate change.	Small	Moderate	Short-term	Temporary	Low	Medium	Drought permits are a key component of United Utilities Drought Plan. The Plan aims to ensure resilience of water supplies to drought, and therefore will have a beneficial impact on adaptation to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 Conserve and enhance the historic environment including the significance of heritage assets and their settings and archaeologically important sites.	Medium	High	Short-term	Temporary	Low	Low	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on archaeology. The only scheduled monument identified was Marple aqueduct, which is located over the River Goyt. There were a number of listed buildings identified. No records were found to indicate that anaerobic / organic remains are located within or immediately adjacent to the watercourses. The heritage features identified as within or immediately adjacent to the rivers within the area of study (including Marple aqueduct) are unlikely to be directly impacted by any reduction in flow rate, velocity or wetted perimeter and the overall impact on archaeology is considered to be negligible.	Negligible adverse	None
Landscape and Visual Amenity	8.1 Conserve, protect and enhance landscape character and visual amenity	Medium	High	Short-term	Temporary	Low	Medium	An Environmental Report has been prepared for drought contingency planning for the drought option at Longdendale and included an assessment of impacts of the drought option on landscape. The aesthetics and landscape of the watercourses and reservoir in the Longdendale study area can be considered to be of parish/neighbourhood value. Bottoms Reservoir (the lowest reservoir in the Longdendale reservoir chain from which the compensation flow to the River Etherow is released) is just within the Peak District National Park boundary. Given that the magnitude of the changes in wetted perimeter, are likely to be low, it is anticipated that the proposed drought option will have a minor adverse temporary impact on the aesthetics and landscape of the study area.	Minor adverse	None
Inter-relationships	9.1 Acknowledge and understand the potential for inter-relationships between topics and anticipate synergistic effects.	Medium	High	Short-term	Temporary	Low	Medium	Key inter-relationships include the minor adverse impact of riverine flow reduction on water quality, fish populations and landscape and visual amenity.	Minor adverse	Negligible beneficial

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